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### SECTIONS

ARCHITECTURE AND DESIGN  
BUSINESS AND MANAGEMENT  
ECONOMICS AND TOURISM  
FINANCE  
LAW  
POLITICAL SCIENCES  
URBAN STUDIES, PLANNING  
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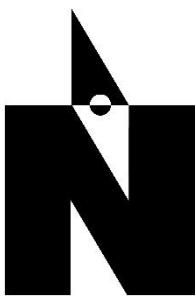
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Section ARCHITECTURE AND DESIGN

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# CONCEPT OF “THE GOD PARTICLE” IN DESIGN WORK OF MAREK BUDZYNSKI

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## ABSTRACT

Marek Budzynski belongs to the forerunners of the ecologically oriented architecture in Poland. The period of his greatest creative activity falls on the years 1975-2000, when widely understood “deep ecology movement” found its specific Polish alteration. This direction was inspired by works of Henryk Skolimowski, regarded as the father of eco-philosophy and homilies of Pope John Paul II, in which Christian values have been combined with the love of nature. In this intellectual climate, Marek Budzynski created his own concept of “the God Particle” manifesting itself in architecture through harmony with greenery and the native landscape, which is understood as a carrier of a national tradition. The article presents the development of this idea. The authors focus on the most narrative works of Marek Budzynski and Zbigniew Badowski: the University of Warsaw Library (project: 1993, construction: 1994-1998, roof: 2002) and the Temple of God’s Providence (2000), awarded the 1<sup>st</sup> prize in an architectural competition but later rejected for a more conservative vision. Analyses have led to establishing a specific “code of nature” and the other distinctive features of these concepts, comparing them to the similar architectural projects from the same time realised by Friedensreich Hundertwasser and Emilio Ambasz.

**Keywords:** *eco-philosophy, Marek Budzynski, Zbigniew Badowski, the University of Warsaw Library, the Temple of Divine Providence in Warsaw*

## INTRODUCTION

People started to notice the devastation of the environment by a predatory human economy at the end of the 1960's, when the alarming scenarios for the future shook the global public opinion initiating a wave of deep worldview reevaluation. In Poland, they gained additional dimension related to the growing resistance movement against the communist order. An important role in this process was played by the Catholic church, which became an autonomous "state in the state", providing support to alternative educational associations, artistic and self-help movements as well as other activities aimed at regaining political and religious freedom [1].

Cut off by the Iron Curtain from much of the world, Polish ecological movements turned either towards the national-Christian tradition, or they sought inspiration in the philosophy of the Far East, opposed to the consumer culture of the West. Among the architects, the first movement was developed by Marek Budzynski (born in 1939) and the second by Janusz Korbel (1946-2015), the founder of the Laboratory for All Beings (1989), connected with Zen Buddhism. However, the main trend in the formation of the intellectual climate of the last

decades of the twentieth century was associated with the personality and teachings of John Paul II, who combined his deep attachment to homeland with love of nature and native landscapes. Calling the believers to an ecological conversion, the Pope perceived moral crisis of the modern man as a source of environmental crisis [2].

The opening up to the world through transcendence, understanding life as a call to do good and developing the core values is expressed by the concept of "the God Particle", guiding the work of Marek Budzynski, the author of several prominent architectural works that are integrated with nature in an organic way. Although in many respects he can be compared to Friedensreich Hundertwasser (formally Friedrich Stowasser; 1928 - 2000) or Emilio Ambasz (born in 1943), who are considered to be the precursors of the green architecture, his projects have a specific form of narration. This attempt to present the works of Marek Budzynski is based on materials from his private archive that have been made available to Joanna Ways. "God Particle" occupying a central position in his creative manifesto becomes a key to understanding the specific "code of nature," which can be found in the works of the team Marek Budzynski and Zbigniew Badowski, and which deserves more attention.

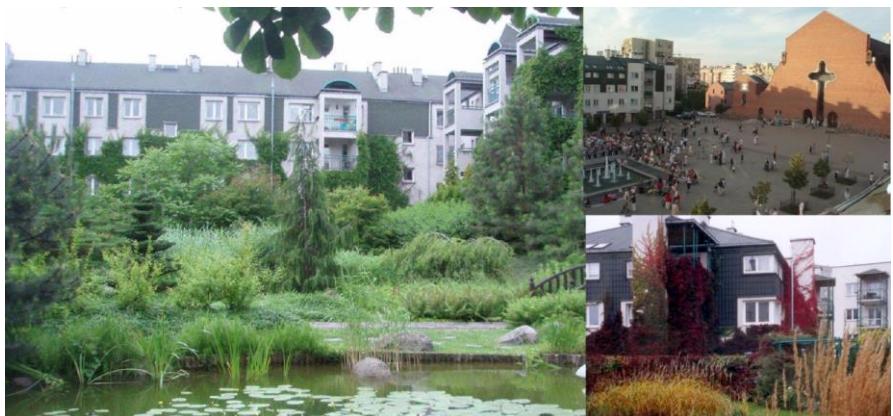
## **URSYNÓW ESTATE AND "THE GOD PARTICLE"**

The spectacular career of Marek Budzynski began in 1972 when he was offered the function of a team leader in the development of the post-competition concept of the Ursynow Nord complex in Warsaw. The task concerned designing a new district addressed to approximately 40.000 inhabitants. Describing the long-term process of creating this "city in the city", Lidia Pankow emphasizes a number of modifications introduced by Budzynski in relation to the primary vision. According to the principle of linear concentration of services in separated inner streets, public spaces were to find a counterweight in the form of large interconnected backyards creating a community park [3]. The cooperation with Irena Bajerska as the landscape architect has become a phenomenon in the contemporary design practice. Perhaps for this reason, in terms of the quality of open areas, Ursynow is unparalleled among Polish modernist housing estates [4]. The dense new plantings and climbers, which covered the building facades as well as differentiation of landform contributed to the balanced cut and fill (Kopa Cwila, Kazurek hill, Horse's valley) and are ahead of the so noticed housing projects as Zoliborz Orchards (Polish: Sady Zoliborskie, 1958-1963) by Halina Skibniewska (1921-2011) [5].

Contrary to the designers' expectations, this diverse greenery enclave did not receive the acceptance of the local community, which after some time began to systematically remove the climber [3]. However, despite numerous setbacks and compromises, the estate belongs to the more successful examples of the built environment of that time. Special attention deserves the so called Ursynowski Passage, with one of the first roof gardens in Poland by Barbara Kraus-Galińska (1995). This is illustrated in Image 1.

Both the aforementioned political background and the sense of responsibility for the quality of life of several thousand inhabitants led Budzynski to recognize the cultural heritage and empathy for nature as the basic source of inspiration. His notes contain a significant declaration:

"In my opinion, the essence of creativity consists in resorting to subconscious emotional associations, imperatives and valuations and using them in a rational way to awaken certain instinctive feelings. Hence the necessity of feeling and understanding of self, the others, the cultural heritage and the universe. For me, creativity means shaping a new reality. It's not only Music, Sculpture, Dance or Architecture. It's also Ideology, Politics, Organization, Constructing. It is primarily the creation of patterns that guide the will to act" [6].



*Image 1. The Ursynowski Passage: a) the roof garden, b) public space in front of the church of the Ascension, c) another roof garden. Photographs from the private archive of Marek Budzynski.*

Creative imperative of this concept differs from the attitude of reverence, aimed at protecting and promoting life, which has become the leitmotif in the considerations of Henryk Skolimowski (1930-2018), Polish eco-philosopher and the author of the work:

A Sacred Place to Dwell: Living With Reverence Upon the Earth (1993). According to Skolimowski, cultural values are "indispensable parts of human strategies for survival and dignified life" and a proper understanding of religious messages should lead to the recognition of some kind of cosmic ethics [7].

Budzynski, however, had to confront his philosophical attitude with reality. As an urban planner and architect he perceives his profession as an opportunity to convey to people the Higgs boson-like "God Particle", which is like a binder of the universe. In his creative manifesto the term taken from the popular scientific book of Leon M. Lederman "The God Particle: If the Universe Is the Answer, What Is the Question"? gains the new meaning. It becomes the ability of creation given to man in order to combine nature with the built environment into one harmonious whole. In unpublished materials from the 1990s, Budzynski notes:

"I belong to those who are deeply convinced that the biosphere has been created as a very small part of the process that we humans call Divine Creation or Evolution. Created to allow the birth and maintenance of life (maybe because it is so small it is the first attempt?) (...) Space exists. We only transform it" [6].

In this approach the God Particle reveals its existence in the field of social and cultural interactions, leading to the emergence of increasingly organized living systems. The architect's mission is to become involved in the evolution of the human habitat by restoring to it the divine elements of nature. Budzynski is looking for a hint in tradition, he tries to combine opposites: past with present, nature and culture. He believes that the progress of knowledge will help people return to their own roots and accept the attitude of solidarity towards other living beings. Being a designer, he expresses his search in monumental buildings, such as the University of Warsaw Library (1994-1998) and the adjacent building of the Faculty of Law and Administration of the University of Warsaw (1996-1997), the seat of the Supreme Court in Warsaw (1995-1999), Temple of Divine Providence in Warsaw (concept: 2000), Podlasie Opera and Philharmonic in Białystok (2005-2012) and University of Białystok Campus (2011 - 2013).

### **THE UNIVERSITY OF WARSAW LIBRARY – AN INNER CITY AND THE MOTIF OF A MOUNTAIN**

Church of the Ascension (1981-1989) designed by the team of Marek Budzynski, Zbigniew Badowski and Piotr Wicha became their first interpretation of historical heritage in the language of contemporary architecture [8]. This year was marked in a special way in the Polish history: on the one hand as the peak moment of civil resistance associated with the Independent Self-governing Labor Union "Solidarity", on the other - as the beginning of a two-year period of martial law (1981-1983). Reference to the national tradition in building of the sacred architecture contained a clear symbolic message at that time. The front elevation of the church, which is the subject of the greatest criticism, was the first reinterpretation of a mountain theme appearing later in Budzynski's works. The high and squat body of the building is supported by the massive side buttresses. Thanks to them, the church seems to grow out of the ground, giving the impression of durability and power. It belongs to a complex of buildings, which surround a hidden courtyard like a defensive wall and protect it against the sphere of the profane. The whole resembles a holy city, a kind of the New Jerusalem, through which the "divine particle" manifests its existence in the middle of the largest Polish settlement from the communist era. The union of spirit, energy and matter takes place in the rays of the light from a large glazed cross on the front facade, which acts as a gate leading to the interior, becoming an illustration of the often quoted statements of Christ: "I am the way and the truth and the life. No one comes to the Father Except through Me" (John 14:6-7, NIV).

The idea of an inner city reappears in the building complex of the Warsaw University Library and the Faculty of Law and Administration headquarter of the same university. As follows from the Fig. 2, Budzynski cut them off from the surroundings with smooth outer walls, offering at the same time inviting entrances to the hidden microcosm of science. The project was developed in the same year as Fukuoka Prefectural International Hall (1994-1995) by Emilio Ambasz, whose aim was to compensate for the loss of the last remaining green area in the cityscape. Therefore, he introduced green spaces onto the 15 stepped terraces dominating the surroundings, but the similarities end there. The Warsaw complex of university buildings resembles a massive plateau covered by a green roof. The inner alleys and main rooms of this "temple of knowledge" are lit with natural light that passes

through skylights or across the atrium courtyards. Inside there are spaces of various purpose, where one can spend the whole day at work, leisure or social life.

The roof garden of 2000 m<sup>2</sup> offers visitors great vantage points of the city and the landscape of the Vistula valley. Greenery and water run down the gentle slope leading to the lower garden of 15.000 m<sup>2</sup> and the nearby river bank. All technical infrastructure devices are closely integrated with shrubs, natural meadows and decorative gardens designed by Irena Bajerska[9]. Although in this place Budzynski planned a kind of botanical garden that would complement the educational function of the library through the selection of native plants, his idea was rejected as too avant-garde and far from the expectations of the mass audience. Finally, the gardens of colours at the top of the artificial mountain enjoy general interest and won a number of prestigious awards.



*Image 2. The Warsaw University Library: a) the bird's-eye view of the whole area concept from the archive of Marek Budzynski; b) the internal street with climbing plants on the walls, c) the Propylea – main entrance to the open library collection Ways; d) the roofs garden. Photographs by Joanna Wys.*

As shown in Image 2, the library hall is kept in a manner of "the Akademos' grove". The readers are sitting here under canopies of the tree-like supporting pillars through which mild greenish light is filtered from above. The Propylaea, called the colonnade of philosophers, forms the monumental entrance, crowned at the top with the figures of prominent Polish thinkers of the twentieth century. On the outer side of the building facing the street, the walls are covered in large plaques with excerpts of texts in different languages, including musical and mathematical notation. Referring to the Hellenic roots of European culture and the academy as a community of knowledge lovers, Budzynski applied classic architectural quotes, like propylaea, peristyles or wall-mounted columns supporting vines. The continuity of the internal and external space is noticeable at every step and the climbing plants growing on the walls of the inner alley are connected with the greenery from the garden through the glass roof. Technical infrastructure devices, which have been shaped like garden art objects, appear as "the signs of time" perfectly integrated into the construction of the green roof. The idea of the God Particle understood as the fusion of spirit (science) with energy (light) and matter

(green, architecture) permeates and connects all this isolated world of harmony created by man.

### **THE TEMPLE OF DIVINE PROVIDENCE - THE WHOLE COUNTRY AT THE FEET OF GOD**

The most clear manifestation of the God Particle in the works of Marek Budzynski was to become the Temple of Divine Providence in Warsaw. The architectural competition for the construction of the “national vote of gratitude” was recognized as the event of the year 2000, as did the chosen concept of Marek Budzyński. The vision of the church hidden inside the pyramidal Holy Mountain topped with a glass building as a sign of Providence stirred public opinion. At the foot of the hill the project envisioned four churches-gates with neo-traditional forms typical for various parts of Poland, through which four roads were to run towards this luminous crown (Image 3).



*Image 3. The Temple of Divine Providence: a) the bird's-eye view of the whole area concept; b-d) views of selected parts of the area. From the archive of Marek Budzynski.*

The soaring form of the skylight can trigger distant associations with Lucile Halsell Conservatory (1988) by Emilio Ambasz, but this is where the similarities end. The skylight seems too big and competes with the mountain, whose size is emphasized by the reflection on the surface of the lake that fills the Square of the Truth. Budzynski planned that during larger gatherings the water would flow to other parts of the garden revealing the bottom and allowing the faithful to be in direct contact with the figure of Christ standing in the middle.

An important role in this scenery is played by the slopes of the artificial mountain, covered with a diversified layer of the native plants, from which Tomasz Chylinski formed meadows, groves and alleys. The topography of the area includes green infrastructure for the collection of rainwater, which points to a balanced approach to the design of sacral architecture. Despite a number of debatable solutions, in the opinion of the proponents the whole project contained unique potential of creative thought. Nevertheless, such a fresh look at the house of God aroused resistance among more conservative church circles, as described by Julia

Sowinska-Heim in the article entitled: "A kurgan grave or an orange squeezer?" The name "orange squeezer" was given by the inhabitants of Warsaw due to the shape of the church which finally emerged after the second competition [10].

Although Holy Mountain was not created in Warsaw, a similar motif appeared five years later in the Podlasie Opera and Philharmonic project in Białystok, where the rectangular body of the main hall towers over the adjacent park from the top of the artificial hill. The creepers begin to overgrow this "temple of music", changing its appearance and merging it with the green roof. Architecture is subjected to the process of evolution - it disappears under the green cover, it is visible and at the same time hidden, integrated with the landscape, ruled by nature and man. Budzynski remains faithful to his mission also in subsequent projects, where he consistently uses green roofs and creepers as elements of his architectural-landscaping creation.

## CONCLUSION

Symbolic references to the past give Budzynski's works some features that are recognizable in relation to other green architecture designers, such as Hundertwasser, who in art and nature sought liberation from an oppressive culture. His houses are full of painterly expression and the trees-tenants growing on the roofs become a contradictory sign of opposition to the desert urban reality. Spiritual environments of Emilio Ambasz are characterized by rationalism and simplicity of forms that are oriented towards the future and innovative technologies. Against this background, Budzynski represents a romantic attitude, facing the idealized past. His inner cities are carrying people in an another world isolated from external influences and yet associated with nature, a world full of meanings that define the function of place on the metaphysical plane (See Table 1).

*Table 1. The meaning and the form in the analysed works of Marek Budzynski (by Alina Drapella-Hermansdorfer).*

Meaning	Form	Occurrence
Affirmation of human unity with nature in terms of protecting the fundamental good of life in all its manifestations [2];	Mountain-like buildings, bringing people back to the Earth as well as to the world of plants and animals living on the green roofs and external walls;	Green roof at Ursynowski Passage (1995-1998), the Warsaw University Library (1994-1998) and the WU Law Faculty building (1996-1997), Temple of Divine Providence (2000, conception), Warsaw; the Podlasie Opera and Philharmonic (2005-2012), Białystok;
Affirmation of cultural heritage in terms of social bond and place identity;	Inner city with a human scale, quotes from regional or classical architecture, inscriptions;	Church of Ascension (1981-1989) and the above mentioned objects except the Ursynowski Passage;

Affirmation of God (as God Particle) connecting the world in a harmonious whole;	Natural light penetrating inside the buildings through symbolic holes (cross, the sign of Divine Providence, glass roof);	As above;
Affirmation "here and now";	Exposing the technical infrastructure, sustainability features;	The Warsaw University Library and WU Law Faculty building, Temple of Divine Providence, Warsaw (conception).

All these motifs can be found in the eco-philosophy of Henryk Skolimowski and the teaching of John Paul II, that have inspired Marek Budzynski's green architecture and his concept of a specific "code of nature" understood as the God Particle connecting people and nature.

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# DESIGN, TECHNOLOGY AND EMOTION MEASUREMENT

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## ABSTRACT

Emotion is a complex field with growing attention from several other fields of research. Recent scientific discoveries in Neuroscience and Affective Computing are providing insights on the most hidden and unconscious mental processes. By measuring what people experience when using a product, designers can gather useful data that aids them understanding their needs and expectations [1]. Due to the contribution of this new knowledge, Design faces new challenges and great opportunities to evolve.

Although information on research methods for measuring emotions is readily accessible in books, scientific journals, websites, among others, no data was found in a coherent and comprehensive manner to manage all. As a result, this article is intended as a framework for three distinct methods for physiology measurement – Eye tracking, Galvanic Skin Response and Facial expression analysis, which resort to sophisticated sensor-based equipment to track specific functions of the human body, namely, pupil dilation, conductivity of the skin and facial behavior. These equipment are becoming affordable, less evasive and portable, making possible field experiments and remote research [2]. These methods were elected because they offer researchers unique paths to explore unconscious behavior. Thus, they are valuable to assess emotional states — prior studies found evidence of patterns in physiological responses for specific emotions [3].

In order to explore these issues, material from books and academic research was gathered and studied. Each method is described, some studies are pointed out and recommendations are given. The literature revealed that these methods provide valuable insights about bodily responses, but they have limitations and disadvantages. Furthermore, it requires technical expertise, knowledge about research planning and analysis of the acquired data sets. Nevertheless, published findings support that the true power of these methods unfolds as they are combined with each other.

The main purpose of this article is to briefly inform designers and researchers about specific techniques and equipment available for emotion measurement in order to aid them in making more informed decisions. In addition, it is aimed to encourage different approaches in Design research in order to develop better products and experiences. Future prospects for Design are also discussed.

**Keywords:** *Design, Emotions, Eye Tracking, Galvanic Skin Response, Facial Expression Analysis.*

## INTRODUCTION

How can designers create pleasurable and meaningful experiences? How can designers understand what people want? Positive and negative emotions that people

experience when using a product are viable entry points to understand their needs and expectations and can also provide insights about pleasure and enjoyment that products trigger [1]. Therefore, emotional measurement can generate useful data to improve and design better products.

Studying emotions is not simple though, they vary and have different intensities. Nonetheless, studies of emotional processes in human body and advances in the fields of Affective Computing and Neuroscience are enhancing the way researchers collect and analyze data. This has led to an increasing application of technological devices to several fields of research. The available equipment helps to demystify bodily processes that cannot be consciously controlled, opening new paths for designers to include other sciences into Design practice.

Hence, it is necessary to know the available methodologies and understand its potentialities and drawbacks to opt for the best solutions and take full advantage of them. Thorring *et al.* [2] provide a literature-based overview about technologies for emotion measurement and suggest a framework to serve as a guideline for researchers. They argue that one of the main advantages of using different technologies is the possibility for triangulation of different data sources.

Following this line of thought, it was decided to collect and explore information about three specific methods for physiology measurement: Eye tracking, Galvanic Skin Response and Facial expression analysis. They all provide important metrics to understand emotions.

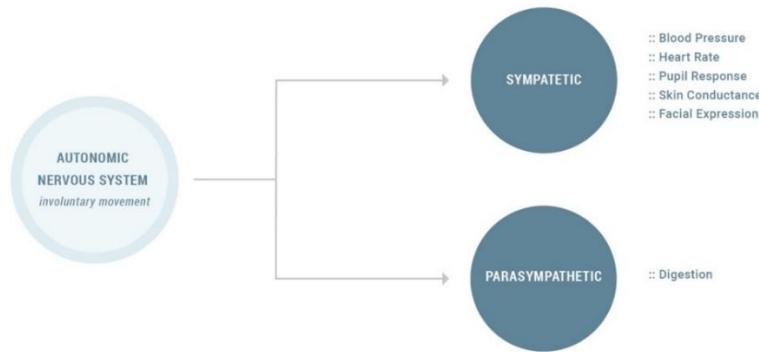
### **Present research**

The purpose of this article was to provide an overview for designers, students, researchers, and practitioners who are not specialists in these particular approaches. It was gather material from academic research and study, books, among other sources. The paper will first introduce some important concepts related to emotions and the brain. The next sections will approach three distinct methods that resort to technological equipment; it will be discussed what they are, what they measure, and some studies will be pointed out. Finally, the paper concludes with a general discussion and avenues for future research are mentioned.

## **THE EMOCIONAL BRAIN**

In emotional situations the body acts and triggers responses automatically — the heart pounds, flutters, stops and drops; palms sweat; muscles tense and relax; blood boils; faces blush, flush, frown, and smile [4]. The autonomic nervous system (ANS) is one avenue for the brain to regulate the body internal environment — it carries the brain commands to the body internal organs and sends sensations back up to the brain [5]. More broadly, the autonomic nervous system can be separated in two subdivisions (figure 1):

- The sympathetic nervous system: associated with bodily indicators such as heart rate, breathing rate, sweating, digestion, hunger, pupil dilation, sexual arousal and responsible for motor action (“fight or flight”) that tells the body to spend its energy resources;
- The parasympathetic nervous system: regulates slowly changing processes associated with “rest and digest”.



**Figure 1.** Components of ANS and bodily indicators.

It is possible to study emotional processes in human brain and body through different technologies and approaches. The following sections describe three different methods that are being applied to measure emotions.

### Eye tracking

Eye tracking holds out the promise of another window into the mind: the semi-magical ability to know what people are looking at [6]. This methodology – which has been applied to several fields of research e.g., human factors, cognitive psychology, marketing, human-computer interaction, among others – allows to detect what people see and where they look by tracking their eye movements and how long they fixate on a certain point, aiding researchers understand visual attention.

Commonly conducted with a device called an eye tracker (remote or wearable), eye tracking uses infrared light-emitting diodes and cameras to track and record where participant is looking, based on the relative position of the pupil center and corneal reflection [6].

A complete eye tracker system includes software that easily allow to produce visualizations of eye tracking data instantaneously. Usually, the most used visualizations are heatmaps (figure 2) and gaze plots that highlight where the person looked, the length of time and the gaze pattern their eyes followed. Using the words of Bojko [6]: “these visualizations are the eye candy of eye tracking”.



**Figure 2.** Heatmap from a PhD student research project.

Eye tracking has over a hundred metrics: the most used for analysis are fixation duration, dwell time and number of fixations. One of the measures that is useful for emotional measurement is the information about pupil diameter, since research suggests that pupil dilation is determined by emotional arousal [7].

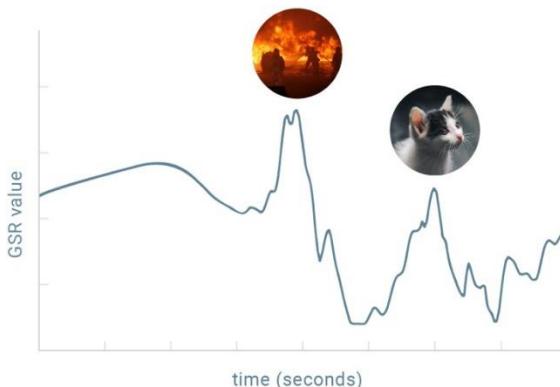
This method is being applied in marketing studies to understand consumers' visual attention behavior in different settings. But it also appears that researchers are taking different approaches: Cho [8] explored the visual behavior of people when glancing at a detached house and Agost *et al.* [9] studied the impact that context, through different decoration styles, had on the subjective impressions evoked by a particular ceramic floor.

Well, researchers do recognize that eye tracking reveals important information about how people see, but they know that it is not enough. The Achilles' heel of eye tracking is that it does not reveal the reasons why people stare to visual stimuli. Hence, it is necessary to resort to other methods, seeking for more information to establish connections between data to better understand visual behavior.

### Galvanic Skin Response

The skin is the largest organ of the human body and it is a rich source of information about what people are thinking and feeling. Sweating on hands and feet is triggered when arousal increases — physiological low conductivity is associated to emotional states such as calm relaxation or deactivating depression, whereas high conductivity relates to states that include hot anger or exuberant joy [10].

Also known as Skin Conductance (SC), Electrodermal Activity (EDA), Electrodermal Response (EDR), and Psychogalvanic Reflex (PGR), Galvanic Skin Response (GSR) reflects subtle variations in the electrical characteristics of the skin. It is generally measured by applying two electrodes in the surface of the skin, using a conductive gel to improve the conductivity between the skin and the electrode. Phasic skin conductance measurements can be interpreted as a direct arousal response to stimuli, e.g., sounds and images. Generally, when an emotionally arousing stimulus event occurs, the variations in the phasic component are visible as rapid signal increases, named "peaks", also referred as Skin Conductance Responses (SCRs) — figure 3.



**Figure 3.** GSR shows peaks in emotionally arousing content.

However, GSR per se cannot determine if the arousal was due to positive or negative content — it only tells if a person is activated or not. Jeon [11] points out other downsides of this approach: physiological sensors are intrusive; mapping between sensing data and a specific emotional state is not robust and other practical issues observed in research, e.g. hairy skin, different size of body part and sweating in the summer.

Reported in practically all psychology, psychiatry, and psychophysiology research journals, GSR has been one of the most widely used response systems in the history of psychophysiology and it has been applied to several questions from basic research examining attention, information processing and emotion, to more applied clinical research examining predictors and/or correlates of normal and abnormal behavior [4].

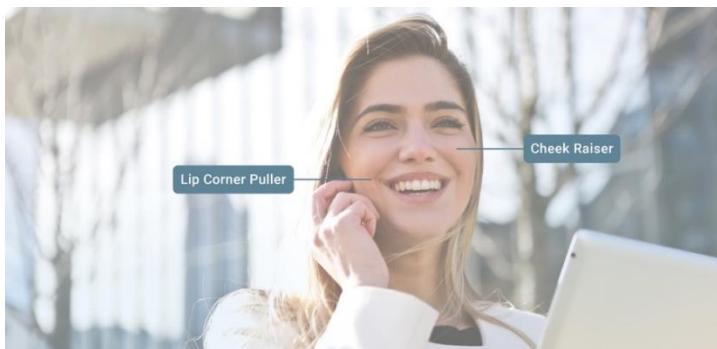
Design studies are also embedding GSR and the results are positive. Trujillo *et al.* [12] explored how an Immersive Virtual Environment influence people's emotions. The authors considered that GSR was an appropriate tool to quantify emotional states inside environments and it has potential for the development of emotional cartographic. From other perspective, Moreira *et al.* [13] used GSR to understand consumers' perception regarding car exterior designs and they encourage the use of more physiological measurements to interpret their attention or emotional nature.

## Facial Expression Analysis

Human face can produce thousands of different facial behaviors and configurations through 20 structurally independent muscles, which may function independently of each other or as a group. Produced by muscle contractions, facial behaviors change the shape of features by producing appearance changes in wrinkle patterns, bulges of skin, dimpling, and other observable, rapid signs [14].

Affectiva's Affdex technology, Insights (nViso) and FaceReader (Noldus Information Technology) are some examples of commercial software for automated facial image analysis — a technique that is used to measure facial expression that has the advantage of not requiring sensors. These solutions resort to embedded cameras in laptops, tablets and mobile phones or stand-alone webcams and they are capable of recognizing facial expression patterns through the caption of video (online or offline) or images.

The implemented algorithms in the software have been developed based on Ekman and Friesen's Facial Action Coding System (FACS). The latter is a measurement system that allows a modular construction of emotions based on the combination of Action Units (AU): each AU matches an individual face muscle or muscle group. As illustrated in figure 4, happiness results from a combination of AU 6 (Cheek Raiser) with AU 12 (Lip Corner Puller — commonly referred to a smile).



**Figure 4.** Happiness.

Each analysis software differs by metrics but in general they all include outputs related to seven basic emotions (joy, anger, disgust, surprise, fear, sadness, contempt); valence; arousal; appearance (age, gender, ethnicity), face tracking and head angle estimation.

Automated facial image analysis is a powerful visual method to convey emotions but according to Hwang and Matsumoto [14] it is not easy to analyze emotions on faces across ethnicities because some ethnic groups have slightly different facial structures and baselines — Asian upper faces are less easy to detect the intensity and appearance changes of certain muscles in comparison with European upper faces due to the different bone and skin features. Moreover, the authors highlight other difficulties: training and the need for certifying developers; analyzing facial expressions frame by frame; setting up videos and using research methodologies to capture facial movements validity.

## CONCLUSION

With a broader sense of the available technology and a brief knowledge on the procedures, it can be concluded that these methods offer solutions for a variety of scenarios: they allow to conduct experiments in research labs or real life.

This study also evidenced that the analysed approaches can help answering research questions about people and the mechanisms that underlie emotions, but they have limitations. Oddly, looking at the current state of literature in Design, it seems that these methods are underutilized. Some major reasons can be suggested: these methods are time-consuming; it is required knowledge and technical expertise; recruitment of participants could be challenging; lack of funds.

Despite of the potential of Eye tracking, GSR and Facial expression analysis, there are still questions to improve and to solve. Hwang and Matsumoto [14] mentioned that they do not believe in the existence of automated solutions that can access the complexity and sophistication of facial expressions. However, technology will keep evolving and better solutions will be created.

Indeed, researchers are developing more portable and less evasive devices along with software which offers easy access to data. For example, created by Empatica, the E4 wristband is an unobtrusive monitoring wearable research device that offers

real-time physiological data acquisition and software for in-depth analysis and visualization. As another example, the company Emotiv offer products to brain measuring that use a sensor technology that does not require extensive preparation and conductive materials.

At the same time, software management tools that explore the potential of combining multiple technologies, such as iMotions, are starting to emerge. Researchers argue that studies can be empowered by the use of multiple technologies and are combining methods or even creating new ones: Roza and Postolache [15] designed a mobile application for emotions' analysis using electrocardiography and GSR.

Eye tracking, GSR and Facial expression analysis provides insights that vary with emotional valence, i.e., emotions can be either positive or negative, but the technologies alone do not enable the identification of a specific emotion. We believe that the triangulation of emotional data from these three technologies will lead to the finding of patterns and detailed relationships between changes in physiological activity and the displayed emotion that will lead to a better understanding of what people feel — thus, improving product development process.

In addition, we consider that crossing information from related areas could also contribute with valuable information to improve emotion measurement. For instance, Wearable Technology is a category that is using biometrics, such as heart rate, to monitor emotions.

Understanding and predicting emotions is and will remain a challenging work. Designers and academicians have numerous opportunities to explore in future researches and a number of obstacles to overcome. The premise of this study is that knowledge is power, but its purpose was also to encourage designers leaving their comfort zones by searching other fields of research and instigate them to try more interdisciplinary scientific research to understand people's perception of products in order to create better experiences.

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# „FROM THE LUFTWAFFE HEADQUARTERS TO A SANATORIUM”. THE ARCHITECTURE OF THE HOLIDAY RESORT OF THE WARSAW EXECUTIVE BOARD OF THE TRADE UNION OF THE BOOK, PRESS AND RADIO EMPLOYEES IN GOŁDAP, MASURIA

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## ABSTRACT

This article presents the architecture, origin and the vicissitudes of the holiday resort which was dedicated to employees of the state media institutions of that time and which is representative of Polish holiday centres in Poland in the 1970s. It was developed near a town called Gołdap in northern Poland in the area of the Masurian Lake District which constituted a part of German East Prussia before 1945. The centre was planned in the land which operated as the Main Headquarters of the General Command of Luftwaffe during II World War. One of the key principles assumed by the designer of the holiday resort was not only the use of the natural advantages of the place but also the maximum adaptation of the preserved facilities, the foundations of the buildings and the infrastructure of the former military complex. The unusual architecture, attractive location and the scale of the constructed complex bespoke of the investors' considerable wealth. The history of the centre entwined closely with important events in general history and the political and economic changes which occurred in Poland after 1989 determined the decision to introduce a new function of a sanatorium to the facility. The complex was then partially reconstructed and developed.

This article was based on a number of researches. A detailed analysis was made of the related archival materials and scientific publications. A comparative analysis was conducted of the architecture of the centre and other facilities used for the same purpose which had been built in the 1960s and 1970s in Poland. The required field studies and photographic documentation of all the premises were performed simultaneously.

**Keywords:** *architecture, resort, employee holiday centre, sanatorium*

## INTRODUCTION

The city of Gołdap is located in the Masurian Lake District, in the valley of the Gołdap River, and at the foot of the Szekeskie Hills. Three and a half kilometres northeast of the city centre, at the edge of the Romincka Forest, is Lake Gołdap, a small ribbon lake surrounded by forests, and intersected by the Russian border at its northern end. The varied landscape is accompanied by lush nature, but the continental climate is one of the harshest in Poland, and is more suited for winter tourism than summer tourism. For this reason, as well as its secluded location near the Russian border, and its single train connection with Ełk (terminal station), few vacation facilities were built at the lake during Poland's post-war period relative to

other Masurian lakes. Of those that were built, the most important was a centre for book, press and radio workers from Warsaw.

## **GOLDAP AND THE SURROUNDING AREA UNDER GERMAN RULE**

Originally a German name, Gołdap and its surroundings were part of East Prussia until the end of World War II. The Romincka Forest was a hunting ground for German rulers. The heart of the ground was near the town of Rominten (currently Радужное, Russia), around 20 kilometres northeast of Gołdap. It was here that in 1891 Wilhelm II erected a wooden, Dragestil hunting lodge designed by Norwegian architects Holm Hansen Munthe (1848–1898) and Ole Sverre (1865–1932). During the Third Reich in 1936, Herman Göring - the prime minister of Prussia, commander of the Luftwaffe, State Forest Inspector and Head Gamekeeper - commissioned construction of another wooden hunting lodge designed by Friedrich Hetzelt (1903–1986) near the previous one. After the German attack on the USSR, Rominten became Göring's main quarters. In 1940, a bomb shelter was built next to the lodge [5].

Beginning in 1878, train networks were built connecting Gołdap with the German capital and important cities in Prussia, which was of essential importance in using the area surrounding Gołdap for recreational purposes, as well as for development of the town itself. Furthermore, Wilhelm's lodge in Rominten boosted the status of the city and its surroundings. During the interwar period, Gołdap came to be seen as a health resort town, and began to attract tourists. Recreation facilities were thus built around the lake [1]. In the town of Gross Kummetschen (Hermeshof from 1934-1945), located along the shore of the lake on the side of Gołdap, were a hotel and youth shelter with a swimming hole, and a pier with a diving tower at the end. Next to the shelter was a tennis court and sports pitch. In the small town of Schillinnen (currently Szyliny) on the other side of the lake was a health resort (Kurhaus) [6], [7].

During the Second World War, Gołdap and its surroundings enjoyed relative peace, although its location near the border meant that it was a close witness to battles on the Eastern Front. The village of Hermeshof played an important strategic role in the war, as the Luftwaffe headquarters were build there in 1940. Several Luftwaffe operations in Europe and North Africa were directed from here between 1941-1944. This also kept commanders close to Göring's main quarters in Rominten. The complex, which was called Robinson, was built around 300 meters from the shore of the lake, with a railway embankment running in between. Up until this point, there were only a few residential buildings scattered throughout the area. The Nazi complex consisted of several facilities, including bomb shelters, aboveground bunkers, brick buildings, barracks, and infrastructure [3], [5], [7].

The Robinson complex in Hermeshof and Göring's quarters in Rominten were destroyed by the retreating German army in October of 1944. Gołdap was captured by the Red Army in January of 1945. Nearly 90% of it had been razed by the fighting.

## **GÓŁDAP - A HOLIDAY RESORT FOR THE PEOPLE'S POLAND**

As a result of the Potsdam Conference in 1945, around 2/3 of East Prussia was incorporated into Poland. The new border between Poland and the USSR cut from East to West through the pre-war Gołdap country (Kreis Goldap in German). Poland received the Southern part, including Gołdap itself, as well as the majority of Lake Gołdap. Soon after the capture of East Prussia, the Russians initiated a new wave of destruction. In 1949 and 1950, Wilhelm II's hunting lodge, which survived the war unscathed, was disassembled and moved to Kaliningrad. The railways running from Gołdap were dismantled, and the tracks were sent back to the USSR. In 1948, only the connection between Ełk and Gołdap was restored. Reconstruction of Gołdap began immediately after the war, and lasted nearly three decades. Despite the efforts of planners, the original street layout could not be preserved. Furthermore, the new buildings were low-quality, and lacked architectural integrity. The city thus lost its picturesque, small-town character [1], [6].

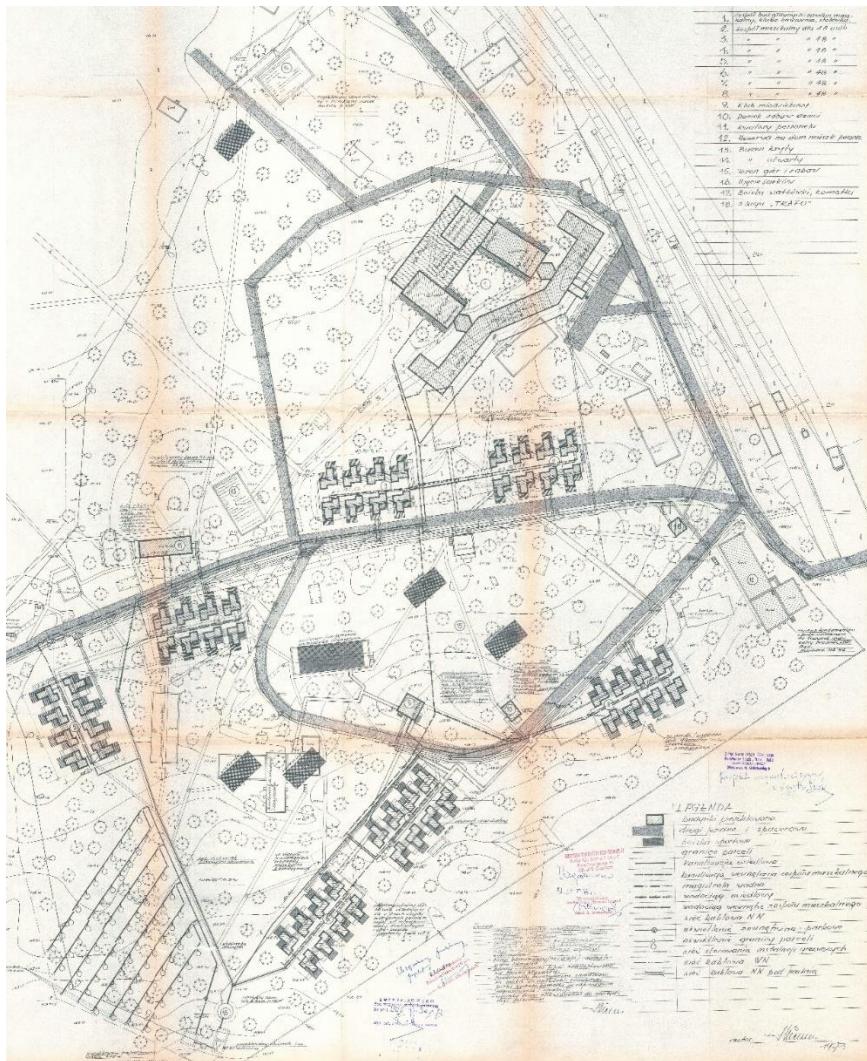
In the 1960s, recreational facilities began to appear around Lake Gołdap. One of the first was a small, low-standard complex that resembled a school building in the former Hermeshof. By 1974, at least four other recreational facilities had been erected. They belonged to businesses and government institutions (including the Ministry of Labour, Wages and Social Affairs) in Gołdap, Białystok and Warsaw. In the years that followed, the ministerial centre operated year-round. Furthermore, three new, year-round complexes were added to the holiday facilities in Gołdap. The largest and most impressive was the holiday resort of the Warsaw Executive Board of the Trade Union of the Book, Press and Radio Employees, built between 1974-1977 [4], [7].

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The main residential and recreational part of the center took the place of the Luftwaffe headquarters in pre-war Hermeshof (currently Gołdap's Kumiecie district). This area was especially attractive for tourists due to its proximity to the lake, which is surrounded by dense, ancient forests and lush groundcover. Furthermore, utilization of the ruins of earlier buildings would cut significant costs. The design was prepared by Warsaw architect Tadeusz Michalczewski in 1973.

The main building complex would consist of an oblong residential pavilion connected to a dining room and a cafe-bar, located in two aboveground bunkers of the Luftwaffe headquarters. The twin bunkers each had an original area of 400 m<sup>2</sup> and height of 5.80 m. A new wing for maintenance (cooking, laundry, etc.) would also be added to the northeast part of the main complex. The residential part of the main building would be supplemented by eight units built on the foundation of the former barracks. Each unit would consist of eight, two-story duplexes connected to one another by an open corridor. The architect also planned to build a puppet theatre and youth club using the foundations and walls of the former boiler room and pump room. The permanent staff would have six apartments in a new building constructed on top of an old foundation with a basement. The bunker of the former power station would be adapted to house seasonal staff. The plan even intended to utilize German-built structures such as water reservoirs for firefighting. One was

refashioned into an outdoor pool for summer, and the other into an indoor pool for winter. Forest clearance was limited to the required minimum, and the old network of roads was used [3]. Unfortunately, however, the majority of the program was not executed. No residential complexes were built in the forest, and neither were many of the accompanying facilities such as pools and sports pitches.



**Fig. 1.** Michalczewski T., Site layout plan of the holiday resort of the Warsaw Executive Board of the Trade Union of the Book, Press and Radio Employees in Gołdap, dated - 1973. Archive of the Wital sanatorium in Gołdap.

The most important of the four sections of the main building was the two-story residential pavilion with entrance hall. The three wings of the pavilion housed comfortable double rooms with bathrooms and balconies. The wings were connected by foyers. In the northwest, hexagonal staircases lined the walls of the

foyers, and connected it to the old bunkers. On the roofs of the bunkers, which housed the dining room and cafe-bar, were spacious sunbathing terraces with a combined area of 800 m<sup>2</sup>, connected by a footbridge. The fourth and final section of the complex was a rectangular building that housed a kitchen, boiler room, laundry room, and a separate, closed courtyard. It was linked to both the dining room and cafe-bar, and it also had a basement [2].



*Fig. 2. The main complex of the holiday resort of the Warsaw Executive Board of the Trade Union of the Book, Press and Radio Employees in Goldap from 1978-1981. Photo: L. Surowiec. [www.fotopolska.eu](http://www.fotopolska.eu).*

The residential pavilion featured parallel, gable roofs, and the upper part of the façade resembled a triangular, attic-style roof comb. This look was complemented by the triangular balconies below. These motifs decorated the smooth, white-plastered walls divided by horizontal rows of balconies, and a cordon cornice between the second floor and attic. The façade is accented only by the light construction of the entrance foyer wall, which is wood-finished, largely glazed, and divided similarly to its white-plastered counterpart. The upper part of the wall is closed off by the rectangular, white-plastered wall of the attic. The entirety resembles a large gate. The wood used for the entrance is a logical reference to the surrounding environment, and gives the architecture a friendly and warm atmosphere. It is also worth mentioning that the architect originally intended to create a type of open corridors along the walls of the bunkers. A roof-like structure would have sloped towards the ground from the railings of the terrace, allowing visitors to walk along the wall of the building under its cover. The eaves would have been lined with sawteeth, and would have referred to the other triangular elements of the building [2].

An example of subtle, late-modernist architecture, the aesthetic expression of the central building generally fit in with contemporary design trends. The two delicate angles in the shape of the building, combined with the unusual shape of the balconies, produced a seeming effect of undulation. At the time, such a look was

similar to that of other Polish holiday centres situated in mountain areas in accordance with the contour lines on the map. Examples include the flagship Home of the Polish Teachers' Union in Jaszowiec, designed in 1960 by Henryk Buszko and Aleksander Franta, as well as the lesser-known Office of the Council of Ministers in Zakopane, designed in 1961-62 by Edward Mój, Antoni Kowal and Bolesław Klimek. Yet the contrast between its white walls, wood and glass gives the centre in Gołdap a certain distinctive character.

## **RECENT HISTORY**

The history of the complex as a holiday centre came to an end just a few years after its completion. Its location near the border was an important determinant of how it was used after the introduction of martial law in December of 1981. From January to August of 1982, female Polish democratic opposition activists were forced to stay at the centre. In the 1980s, workers' holidays in Poland declined in significance. Many centres required constant investment, which was difficult during the abovementioned crisis. We know that in Gołdap in 1988, services were being offered by 12 holiday facilities (5 year-round) whose technical conditions left much to be desired. The holiday resort of the Warsaw Executive Board of the Trade Union of the Book, Press and Radio Employees was the largest and best-equipped. Its 7 brick buildings and bunkers were in good technical condition, and its residential wing housed 169 beds [4]. After 1989, the Polish People's Republic's system of workers' holidays was replaced by private investment in holiday centres. The health-resort potential of Gołdap county was soon recognized as its greatest source of capital. The city and its surroundings were confirmed to have specific climate conditions, mineral water springs, and valuable mud deposits. According to the development strategy of 1989, the Kumiecie district could become the "heart" of the new resort. The holiday resort of the Warsaw Executive Board of the Trade Union of the Book, Press and Radio Employees was adapted into a health resort complex, and constructed around it were hotels, guesthouses and above all - graduation towers [1]. Unfortunately, however, the main building lost its original aesthetic merits during this adaptation. The light, wood-finished wall in the main facade was replaced with a traditional, plastered brick construction; the residential pavilion was covered with asymmetrical, gable roofs; and the characteristic attic with triangular peaks was discarded. Additional floors were built in place of the attractive terraces on top of the dining room and café.

## **CONCLUSION**

The architecture of the holiday resort of the Warsaw Executive Board of the Trade Union of the Book, Press and Radio Employees in Gołdap was exceptional due to its adaptation of the military complex left behind by the Nazis. Its balanced aesthetics, high quality of workmanship, and high standard of use were characteristic of other holiday centres for workers of central institutions in Warsaw. The history of the centre after 1989 is typical for Polish holiday centres built between 1955 and 1980. Architecture from this period commonly evokes negative associations, and its merits often go unrecognized. New owners are thus adapting old centres according to their own needs and tastes. Most often, they seek to increase the useable surface area, usually with inexpensive construction materials. It therefore seems necessary to grant legal protection to Poland's most valuable

architectural accomplishments, and educate the public on the merits of the most important holiday centres from the times of the Polish People's Republic.

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## FUN AND LEARN OUTDOORS: EDUCATION IN EXHIBITION GARDENS

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### ABSTRACT

The educational aspect - especially in terms of presenting horticultural novelties and introducing new plant species - was always one of the main aims of organization various horticultural fairs, shows and exhibitions. However, nowadays it has much wider meaning. It seems that the educational aspect is becoming more and more important, as designers treat the space as a communication between them and visitors. Their projects are planned meticulously, not only to astonish the public with bold spatial solutions and innovative approach, but even more often their main purpose is to trigger some reaction and stimulate thinking. However at the same time their important feature is to create pleasant to eye environment where people can relax. In many cases they also involve the humoristic and ludic aspects, which brings vitality to the area.

The main objective of the study is to present and compare current approach in designing garden exhibitions in Poland and Germany. The study is depicted by examples of garden exhibitions held in Germany in 2015 and 2017; and in Poland organized by Arboretum and Institute of Physiography in Bolestraszyce in 2016 and 2017. Comparison of exhibition gardens presented in Poland and in Germany enable to recognize general trends in designing these areas.

The paper is a continuation of Author's research on educational aspect of contemporary exhibition gardens. In contemporary exhibition gardens the educational aspects seems to be more and more important. Theme gardens and playground areas usually gain symbolical meaning as designers through play of forms and materials advocate for some issue. Mostly they refer to *genius loci*, local heritage, social problems and environmental issues. Theme gardens in Poland seem to refer more often to environment. In Germany themes cover also problems of tangible and intangible heritage.

**Keywords:** *fun and learn, show gardens, didactic gardens, green spaces, environmental education*

### INTRODUCTION

The garden is a place combining nature and culture, sometimes a piece of art, sometimes a piece kitsch. Nowadays many parks and gardens gain educational values, not only in terms of history of gardening, but also in terms of environmental education [1], [2]. Contemporary exhibition gardens are perceived as a special kind of garden by many researchers [2], [3], [4], [5], [6]. They are meticulously planned not only to create pleasant to eyes environment, but also used to present horticultural novelties as well as new, imaginative designs. Also almost always they

are temporary. While designing artists have a chance to express themselves, to present their thoughts and values, filtered by their sensitivity. According to Izabela Myszka-Stapór "*The exhibition garden becomes the content, not only the decoration*" [4]. Therefore the exhibition garden becomes a piece of artwork that usually is socially engaged, sometimes designed to shock or amuse, but always bring attention towards important issues and high values [2], [3], [4], [5]. Exhibition gardens can be also recognized as theme gardens, as they often focus on specific topic.

Anna Komorowska describes temporary spaces including exhibition gardens as an experiment or even a provocation, that interacts strongly with visitors, forcing them to notice neglected issues. She also points out that these temporary elements teach to how analyze the space, how to decipher story hidden between the 'lines' [5].

## **FUN AS IMPORTANT FACTOR IN CONTEMPORARY SPATIAL DESIGN**

Fun and entertainment are perceived as very important parts of human life that enable to feel free. The play can be defined as all activities undertaken as different from ordinary, everyday life [6]. Philosophers often discussed the topic of fun. Plato emphasized role of play as one of the most important values in life (next to learning) [6]. Play colloquially connected only with pleasure, in fact very often have educational values, helping in further development of children and adults [7]. Some researchers emphasize that play help in passing traditions and customs. German philosopher and poet Friedrich Schiller also emphasized the role of play: "Man only plays when he is in the fullest sense of the word a human being, and he is only fully a human being when he plays" and also „Dare to err and to dream. Deep meaning often lies in childish plays".

Play is often connected with physical manipulation, therefore various artifacts may be perceived as playful (such as moveable, multifunctional elements or objects designed for specific plays e.g merry-go-round, boules). However humour is more refined and usually is manifested by surprising, unexpected connections, contrasts, off-scale elements, or connotations. Worth mentioning here is the example of baroque villa d'Este gardens in Tivoli, Italy, where so called 'giochi d'acqua' were implemented as an element introducing surprise and fun.

According to latest trends play and humour seems to be very important factors in creating educational spaces both for children and adults. Also places offering positive emotions become activity magnets [7]. The wide range of potential activities including entertainment (also as passive activity concentrated on observation of other people) is very important in attracting visitors and creating vital public spaces. Jan Gehl compares children playgrounds with 'adult' frontyards and community gardens, treating both as flexible meeting space, where different activities are possible [8]. It is also important to provide flexible places in the city, where temporary, creative initiatives can occur (festivals, exhibitions etc.). He also discusses the playful potential of the city landscape in general [9].

Wojciech Kosiński claims that contemporary public parks provide places both for active and passive rest, but especially for fun. According to his observations

they are often focused on recreation and entertainment [10]. Educational elements that have humorous, playful design makes learning also fun [5].



**Fig. 1** Humorous design. Ogród Pop Art czy Žart (Pop Art or Prank Garden), 3rd Garden Festival in Bolestraszyce, 2013. Photograph by Narcyz Piórecki, 2014. Courtesy of Arboretum and Institute of Physiography in Bolestraszyce.

**Fig. 2** Flexible space of 'Move me! The name says it all,' garden, IGA Berlin, 2017. Photograph by Agnieszka Wójcik-Popek, 2017.

## GERMAN HORTICULTURAL EXHIBITIONS

Contemporary German horticultural festival formula crystallized after II WW, based on previous experiences. This is one of the most interesting outdoor, large scale exhibition garden movement. Exhibitions held in different venues have important role in improving the cityscape. They are organized of three levels - regional, national and international. International festivals *Internationale Garten Ausstellung* (abbrev. IGA) are organized every ten years, national festivals *Bundesgartenschau* (abbrev. BUGA) every two years. Regional festivals - *Landesgartenschau* (abbrev. LAGA) frequency is variable and depends on the Land [11]. Thanks to special formula over 2700 ha of previously degraded areas were transformed into public spaces since first exhibition in 1951 [12]. The study is depicted by examples of exhibitions garden presented on BUGA 2015 exhibition held in Havel region and on IGA 2017 in Berlin.

## POLISH HORTICULTURAL EXHIBITIONS

In Poland outdoor horticultural festivals are relatively new trend. The most popular garden exhibitions are indoor fairs such as Gardenia in Poznań and Zieleń to Życie (Green is life) in Warsaw [13]. The Garden Festival in Arboretum in Bolestraszyce is a small outdoor festival. It has been organized annually in Bolestraszyce village (south-eastern Poland, 8 km from Przemyśl) since 2011. It was the joint initiative of landscape architecture professors from few Polish universities. It was even described as a training ground, that presents how new forms of contemporary art are applied to gardening. The first Festival was relatively small - 10 exhibition gardens were presented [13]. Each Festival gained more and more attention - in 2016 during 6<sup>th</sup> Festival 30 gardens were presented [14]. Garden festivals in Bolestraszyce are often accompanied with art exhibitions. The study is

depicted by examples of exhibitions garden presented on 6<sup>th</sup> and 7<sup>th</sup> Garden Festival presented in Bolestraszyce Arboretum (in 2016 and 2017).

## EDUCATION AND FUN IN EXHIBITION GARDENS

Exhibition gardens are specific kind of garden. They combine aspects of natural and constructed environment with art. They have educational values [2], [3], [4], focusing on selected aspect of life, filtered by the designer's sensitivity. Therefore they can be considered as theme gardens as well.

Education aspect was the main goal of fairs and exhibitions. Along with development of exhibition it gained new levels, not only presenting horticultural novelties [3]. According to previous research around 70% of exhibition gardens created for BUGA 2015 exhibition had educational values. Especially popular were references to current problems of ecology and sustainability as well as local identity [2].

Playground areas as part of German horticultural exhibitions sometimes often have educational values eg. Slavic village playground in Havelberg and Otto Lilienthal playground in Rhinow/Stölln (BUGA 2015) concentrating on cultural education or 'Konrads Reise in die Südsee' (IGA 2017) with whale as the main element (also with internal organs). The exhibition areas often also include typical educational facilities like ecological education centre 'Haus der Flüsse' (House of the River) in Havelberg (BUGA 2015) or Umweltbildungszentrum (Environmental Education Center), Naturerfahrungsraum and Schaufläche Mischwald (Mixed forest exhibition area) in Berlin (IGA 2017).

Table below presents examples divided into following types: gardens presenting landscapes, gardens popularizing biological knowledge and ecological awarness, gardens presenting cultural heritage, gardens discussing social problems, gardens presenting physical phenomenon, gardens presenting horticultural novelties, symbolical gardens. Some examples may belong to more than one group, as their theme focuses on 'mulitlayered' issue.

**Table 1.** Examples of exhibition gardens focusing on educational values. By A. Wójcik-Popek 2018. Based on [12], [14], [15].

type	examples
gardens presenting 'national' landscapes	IGA 2017: group of gardens presenting landscapes of: China, Brasil, Lebanon, Thailand, USA, South Africa etc.; BUGA 2015: Garden of Lithuania; Garden Festival 2017: none; Garden Festival 2016: Pantheon of Forgotten Polish Flowers (Pantheon Zapomnianych Kwiatów Polskich);
gardens popularizing biological knowledge and ecological awarness	IGA 2017: Honey Suite Garden, Collector's Dream, Inside the Flower, 'ne echte Berliner Pflanze!' (Native Berliners), Bee garden; BUGA 2015: Unterwegs (On the way), Sukzessionsgarten (Garden of Succesion), Havelgeschichte (Story of the Havel river); Garden Festival 2017: 2030+ miejski ogród przyszłości (2030+ city garden of future);

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	Garden Festival 2016: Protest Garden III „Nasadzenia Przestępce” (“Criminal Plantings”), Fractal Garden (Ogród Fraktali), Litosfera (Lithosphere), Drzewa na opał (Fire-Wood);
gardens presenting cultural heritage	IGA 2017: group of gardens presenting typical traditional gardens of: China, England, Korea, Japan, Italy (reinassaince), etc.; Archeological Garden; BUGA 2015: Asian Koi Garden, Der Segen des Herren von Ribbeck (The blessing of the Lord of Ribbeck), Brandenburg Chic, Fluss-Land-Stadt (River-Land-City); Mensch und Pflanze (People and Plants); Garden Festival 2017: Arboretowe Bajania (Arboretum Tales); Garden Festival 2016: Panteon of Forgotten Polish Flowers (Panteon Zapomnianych Kwiatów Polskich), Ogród Kalwaria (Calvary Garden);
gardens discussing social problems	IGA 2017: Pop-up Deck, Global Hunger Aid, slowtime!; BUGA 2015: Havelgeschichte (Story of the Havel river), Junger Stadtgarten (Young City Garden); Garden Festival 2017: Protest Garden IV „Już nie wychodzą na pole lub na dwór” (Protest Garden IV „They do not go out anymore”); Drzewo Życia (Tree of Life), 2030+ miejski ogród przyszłości (2030+ city garden of future); Garden Festival 2016: Protest Garden III „Nasadzenia przestępce” (Protest Garden III „Criminal Plantings”), Pochwała powolności (Praise of slowness);
gardens presenting physical phenomenon	IGA 2017: none BUGA 2015: Optic Park in Rathenow, Grünzug (green area with devices for the presentation of physical phenomena related to water as the formation of whirlpools) Garden Festival 2016: none Garden Festival 2017: none
gardens presenting horticultural novelties	IGA 2017: gardens presenting new varieties - Neuheiten (Novelties), or dedicated to specific species of: roses, dahlias, rhododendrons, grasses etc.; gardens presenting new solutions like Aquaponic-Garten; BUGA 2015: Birch garden, Erhaltungskulturen (Cultivation Maintenance), Lianengarten (Liane garden); Garden Festival 2016: none Garden Festival 2017: none
symbolical gardens	IGA 2017: Christian garden, Japanese ‘Garden of merging water’ BUGA 2015: Garden Eden, Die Zelle (The Cell), Beauty Box; Garden Festival 2017: Ogród I (Garden I), Drzewo Życia (Tree of Life), Ogród „Kontrast” (Garden ‘Contrast’), Garden Festival 2016: Ogród Fraktali (Fractal Garden), Ogród Znaczeń (Garden of Meanings), Próby przetrwania w sztuce / Wyspa Lesbos (Trials of survival in art / Lesbos island), Ogród Reinkarnacja (Reincarnation Garden),

	Kapliczka postindustrialna (Postindustrial chapel), Kreowanie świątyni (Temple creation);
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**Fig. 3** From left: Garden of Australia ‘Cultivated by Fire’ IGA 2017 Berlin; middle above: Erhaltungskulturen BUGA 2015, Brandenburg a. H., right above: Inside the Flower IGA 2017 Berlin; below: Aqua-Ponic Garden IGA 2017 Berlin. Photographs by Agnieszka Wójcik-Popek

Table below presents examples where humour and playfulness were introduced in the exhibitions’ landscape. These features manifest themselves in various areas of garden exhibitions: theme gardens, public spaces, playgrounds and educational areas.

**Table 2.** Examples of spaces introducing humorous and playful features. By A. Wójcik-Popek 2018. Based on [12], [14], [15].

type of space	examples
theme gardens and stands	IGA 2017: ‘ne echte Berliner Pflanze!’ (Native Berliners), Los Angeles Garden (national USA garden), Move me! The name says it all, Prairie with wood, Perspektivenwechsel (Change of Perspective), Honey Suite Garden, ‘Not all stories had been told...’, Promenade Aquatica Water Gardens, Collector’s Dream, Pop-up Deck, Global Hunger Aid, slowtime!; BUGA 2015: Havelgeschichte (Story of the Havel river), Die Zelle (The Cell);

	Garden Festival 2017: Protest Garden IV „Już nie wychodzą na pole lub na dwór” ('They do not go out anymore'), Arboretowe Bajania (Arboretum Tales); Garden Festival 2016: Ogród Fraktali (Fractal Garden), Ogród Znaczeń (Garden of Meanings), Próby przetrwania w sztuce / Wyspa Lesbos (Trials of survival in art / Lesbos island), Protest Garden III „Nasadzenia przestępzcze” ('Criminal Plantings'), Okrągły stół (Round table),
public space*	horned pugs (Brandenburg a. H., BUGA 2015),
playgrounds*	Slavic village playground in Havelberg (BUGA 2015), Konrad with the Polynesian giant ant (IGA 2017)
educational areas*	open-air educational space around 'Haus der Flüsse' in Havelberg (BUGA 2015)

\* not appearing as a part of Garden Festivals organized in Bolestraszyce



Fig. 4 From left: Drzewa na opał (Fire-wood) garden, 6<sup>th</sup> Garden Festival, Bolestraszyce 2016; middle above: 'Konrads Reise in die Südsee' (heart of whale) IGA 2017, Berlin; left above: Protest Garden IV „Już nie wychodzą na pole lub na dwór” ('They do not go out anymore'), below: Grazing animals as a part of open-air educational area around education centre 'Haus der Flüsse', Havelberg, BUGA 2015. Photographs by Agnieszka Wójcik-Popek

## CONCLUSION

Contemporary garden exhibition are becoming widely known, recognizable event. During their development throughout years they gained new levels of education features. Nowadays they do not focus only on presenting horticultural novelties and new techniques of plants cultivation.

Contemporary exhibition areas on Polish and German examples are characterized by high rate engagement in the problems of society and ecological

awareness. Polish Garden Festival organized in Bolestraszyce has smaller of influence on society, as it is much less recognizable and popular. As exhibition organized at the same venue every year (semi-private area) it also has different specifics (e.g. lack of playground and typically educational areas) or Polish theme gardens presented during 6<sup>th</sup> and 7<sup>th</sup> Garden Festival in Bolestraszyce more often tend to introduce symbolical compositions, presenting more artistic approach. However there are not present any collection gardens. International exhibitions usually involves theme gardens presenting landscapes of particular countries like Chinese Garden.

Humours, playful, liveable design makes the education values less recognizable, yet easier to ‘consume’. They are used to create pleasant memories and positive connotations that enhance learning processes. Playful elements are sometimes used for collecting donations (like Global Hunger Aid stand equipped with wooden slide for rented balls).

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# INVESTIGATING THE INTEGRATION OF MODERNISM WITH THE ARCHITECTURE OF THE QAJAR PERIOD IN THE HISTORICAL BASE OF HOUSES IN TABRIZ

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## **ABSTRACT**

Today the most notable issue is that increasing need for technology employment in architecture and considerable changes in the field have influenced historical texture and spaces of the society due to political and social issues. Considering that Tabriz city is considered as one of the main poles of architecture in the country, so in addition to ancient history the city has a treasure of culture and most evident examples of Qajar architecture. Uncontrolled changes and inappropriate constructions in the historical texture of the city have led us to determine and evaluate significant indexes for different types of residential and commercial buildings. Present research study focuses on different interpretations related to integration of Qajar architecture, new building technology and architecture and supporting tradition and culture in the historical texture of Tabriz city. Rather, the modern architecture design, on the one hand, should take the environmental, civil, technical and social pattern into consideration and on the other hand, they should produce architectural designs and patterns are congruous with the early ideologies and concepts of the well-respected old houses. The measures taken in architecture of houses which have been formed based on needs of Iranians and construction environment can be useful for reaching a suitable Iranian house pattern.

**Keywords:** *Qajar Architecture, modernity, culture, tradition.*

## **INTRODUCTION**

Iranian architecture, which was first formed in Iranian plateau and then in the field of Iranian culture influence and, like other architectures which are originated from local culture, focuses on weather and keeps its valuable structures until Qajar period. Throughout history of Iranian architecture, before and after Islam, we can see different architectural styles [1]. With enthronement of the Safavid dynasty, the government was able to present an architectural style known as Isfahani style through concluding from several-thousand-year history of the land, which is composed of skilled integration of philosophy, art, architecture and urbanization in the old times. Entrance of European architecture and modernity in the Qajar time is considered as the most important reason of such a cadence [2].

These methods were not matched well with the traditional architecture criteria and there needed to new kinds of building and structure designing, because many researchers as Nervi (1965) [3] and Viollet-Le-Duc (1990) [4]. The last research was of Sandaker (2008) who knows the structure as a part of architecture and not only plays a supportive role but provides special harmony and restrictive structure.

In his idea, the main goal of structure is to establish architectural space physically [5].

Uncontrolled changes and inappropriate constructions in the historical texture of the city have led us to determine and evaluate significant indexes for different types of residential and commercial buildings. In this article it was tried to make the building become respondent to the society needs through integration of modern architecture and skeleton of Qajar architecture, being compatible with the Qajar architecture and culture and bearing minimum damage to historical skeleton of Tabriz city.

## **PURPOSE AND RESEARCH QUESTION**

Present research study focuses on different interpretations related to integration of Qajar architecture, new building technology and architecture and supporting tradition and culture in the historical texture of Tabriz city.

## **METHODOLOGY**

In this article we will employ case study method. Present research is a subject, which is led by theoretical assumption, explaining scientific descriptions for specific cases such as: characteristics of Qajar architecture, creation and design completion way of a modern building based on architectural style of Qajar period. It is hoped that such attempts result in a case-study-based definition.

## **QAJAR PERIOD**

### **History of the Qajar period**

The Qajar architecture was the same as 13<sup>th</sup> and 14<sup>th</sup> centuries' architectural styles known as Isfahani style. The Qajar period shows transfer from traditional architecture to modern architecture in Iran. Iranian architectural heritage was completed with the use of pre-Islamic style with exact lines of European neo-classic forms. Such a combination of concepts both resulted in their formation periods, classic, in imperialistic style [6]. In fact, in that period the architects tried to keep old architectural elements along with Western elements in their buildings due to their Islamic beliefs related to Iranian culture.

### **The Impact of Modernity on the Architecture of the Qajar Period**

In the general can be said, In the 15th century, the Renaissance era was against the medieval time, which was equal the ancient time. In the 16 and 17th centuries, the relationship with archaism was cut and each conception was interpreted according to its lexical root. After the enlightenment period (18th century upward), the conception of innovation that was alongside with better living was stabilized and became opposite to the conception of "Tradition" and "Modernity". In its current application, is a kind of recognition which the world and human, a kind of recognition which is caused by living in the present and removing from the past. Modernity refers to the experience of economic, social, political, cultural, aesthetical, and mental life, which involves in official and economical rationality and distinction of the social word [7]. By taking a glance at the current life styles in Iran society, the modernity effective dimensions can be easily identified in various aspects of social and individual life. In the era of Qajar and Pahlavi kings, one of

the important results of modernity has been the expanding of the western lifestyle, which is rooted. Modernity can be seen in the structural dimension of Iranian families, because the processes as urbanization and industrialization have replaced the traditional living with the modern one.

### **Elements Affecting the Architecture of the Qajar Period**

During this period, through the entrance of new elements such as streets and squares (in modern form) to the field of Iranian architecture, some changes happened and a new architecture called street architecture was formed. In addition, architecture in Qajar era in different buildings such as: bridge, bathhouse, mosque, school, etc in the continuation of the architecture from the past periods especially Safavid era and of course, it has changes and elements which are dedicated to the Qajar era. Therefore, the houses were built linearly next to each other and along the edge of the street and the light of many of these buildings were provided from the street and almost the architecture style of old houses especially in big cities leaned from introversion to extroversion [8].

### **The Effect of Traditional Houses on the Current Houses**

The first houses made in Qajar era, which were obeying the pattern of Iranian old houses, possessed interior and exterior parts. Near the Pahlavi era, this pattern lost its importance and completely disappeared in the first Pahlavi King time when the houses accepted extroverted manifestation that is permanently continuing. The form of housing which the people since have noticed long ago is the single family home. In the 19<sup>th</sup> century, this form was mainly made up of one floor and a yard. By increasing the population and entering the different kinds of European houses as two-floor houses with balcony and multi-flat apartments new housing morphology was appeared. The residential are generally smaller now and the culture of apartment living was increased. In general, these changes have resulted in basic differences between traditional houses and modern residential units. In the following, the obvious differences are summarized:

**Incompatibility of the location climate with its architecture:** for example, the desert areas of the country can be referred to, that instead of using the materials compatible with the location, those materials are used that result in wasting energy and aren't compatible with the environment.

**Differences between forms and applications:** In the post, most houses had several roles. While they were considered as the family habitat, they were the place of earning money and keeping livestock. However, they have the only role of residence now.

**Changing indoor spaces to open ones (introverted architecture into extroverted one):** By changing the pattern of introversion into extroversion, the cities got new appearance. Using the windows opening to the yard, which was very common in the historical architecture was gradually abrogated and was replaced by short walls and widows opening into the streets in the new architecture.

**Replacing modern element into the structure:** In this regard, using electric posts instead of gas lights which was a developed kind of artificial lighting before

using electricity at home, and replacement of video iPhone with the Kobe and having open kitchens instead of traditional ones can be referred to.

**The previous collective life versus the modern individualism:** Changing the extended families into nuclear ones caused individualism culture.

**Losing fixation on the house:** In general, the given points resulted in removing intimacy and fixation on the house and caused it to lose its identity [9].

### **Residential Architecture of Qajar Era in Tabriz**

Tabriz preserved its traditional structure during Qajar era and only some modern elements or functions were developed that caused some variations in urban spaces or architectural elements. In the Qajar era, Tabriz is domicile of Qajar crown prince and important military and political decisions are made there and was regarded as the second Iranian city of Qajar era. It changed to one of the most important economical hubs and serves as a center for important national events [10].

What is remarkable about the houses is the European furniture and appliances including dining tables, beds, sofas, etc. Organizing the mentioned stuffs in the house was not common as it was customary in Western countries, because they had no specified place in Iranian spaces and their functions were changed according to the needs of the residents, but new stuffs should have a certain place and fixed location.

### **Physical characteristics of Tabriz historical houses in Qajar era**

In the general, seven functional features include the house plan elements that can be follow:

- Main entrance that include hallway/corridor (Hashti) and courtyard. In general, different types of hallways are located in the houses.
  - Central courtyard
  - Entrance through the courtyard which the include six considered:
    - A. First floor with two hallways on the peripheral axis.
    - B. Ground floor with two hallways on the peripheral axis.
    - C. First floor with a hall (a wider hallway) on the axis of symmetry.
    - D. Ground floor with a hall on the axis of symmetry.
    - E. First floor with a hallway on the axis of symmetry.
    - F. Ground floor with the hallway on the axis of symmetry.
  - Staircase on the three locations were considered:
    - A. Two staircases on the peripheral axis
    - B. A Central staircase on the axis of symmetry
    - C. A side staircase
  - Veranda/porch (Evvān)
    - A. on the southern facade with the total height of the building.
    - B. located on the southern side of the facade with as high as one storey.
    - C. with the height of one storey and located on the other facades of the buildings.
  - Living spaces

- A. living room (Tanabi or Talar) with the height of two storey reaching gooshvare.
- B. Spring house (Hozkhāneh)
- C. The hall (Shāhneshin) whit wiodows (Orosi; Se Dari or Penj Dari)

According to the statistics of cultural heritage, Tabriz includs: One citadel, four bazaars, three religious theaters, three bathrooms, 72 houses, 6 gates, two graveyards, 19 caravanserais, one alley, 3 quarters, 2 schools, two mosques, and two squares may be regarded as urban elements of Tabriz. Frome 72 historical houses of Tabriz, can be divided into Five Groups, which are briefly explained.

- **Group A** - In general, houses in this group, built in a large scale with both private and main yards' (Andaroni and Bironi) courtyards and belonged to well-known people with high social and economic status. These Houses with a complete and ornamented Spring house in the shape of a cross or different cruciform with a fountain. Access to the basement from the peripheral hallways and connection to other parts of the basement through hallways or rooms on both sides of Spring house. Spring house and other parts of basement are built half a storey below the yard level. Huge ornamented living rooms and often as high as storey and ornamented Veranda on the southern facade, located in front of the living room and Spring house. The main entrance (southern side), through peripheral staircases to the peripheral hallways and access to the second floor through the first floor by two peripheral staircases. Veranda built on the side facade solely as high as one storey that main entrance to the yard from the side facades and through ornamented hallway or corridor. The typical example of this group is the Behnam House.

- **Group B** - Houses on this group also belonged to people with high social status. so that, hallway and main access to the building changed into a hall (a wider hallway) on the axis of symmetry, or divided into two hallways leading to large staircases on the peripheral axes. In these houses the basement, ground floor, first floor and the second floor and in all the houses, connected through the staircases. The hall leading to a wide central staircases seen in this group of houses, where living room and even hozkhaneh is located on the axis of symmetry. The typical example of this group is the Heidarzadeh House.

- **Group C** - Hallways located on the peripheral axes so that, in a few of houses Veranda built on the main facade and entrance to the building from the courtyard both through stairs to the first floor and through the ground floor hallways. living room in this group are also located on the axis of symmetry often with windows with colored panes. The typical example of this group is the Amir Nezam House.

- **Group D** - Hallways in this group located on the axis of symmetry. The main staircase often located behind the main parts of the building. In one case a small balcony built on the main façade on the second floor indicating a revolution in the form of Veranda. The typical example of this group is the normal historical House.

- **Group E** - Smaller functional spaces with no special order and hallways on different sides of the house located on peripheral axis so that, living room or the guest room located closer to the peripheral. The typical example of this group is the Norml historical House.

## Entering technology into Iran and the effect on the houses in Tabriz

Since 1300s onwards significant physical changes occurred in cities. Urban centers such as Tehran, Isfahan and Tabriz due to an unbalanced urban growth from 1925 onwards were witnessed unprecedented development [11]. Qajar era architecture to apply new practices adopted two different ways:

**A:** Applying new functions in essentially traditional buildings, such as sick house, hospital, embassies and travel agencies; that this approach did not last very much.

**B:** Construction of new buildings that were inspired by Europe in their functions, but were Iranian in terms of construction and materials. But, the field of housing changes and evolutions in the big cities of Iran such as Tabriz, which have been caused by technology appearing over the history, can be classified as the following:

**Introversion:** It is an important and basic quality of Iranian houses, which has been added to the house architecture based on the climate requirements or Iranian culture, and beliefs and is the essential reason of making a house [12]. Introversion in the Iranian houses means that outside is brought into inside, i.e. coexistence and dialogue between the out world and inside occurs inside the home.

**The function of the house organs:** the obtained results are indicator of the difference between the present lifestyle and the houses, spatial organization and the past. In the past, the furniture inside the rooms were limited and related to the spaces and individuals, the rooms had way to each other internally and were different in term of their sizes and functions. The possibility of making functional varieties inside the same room was more and the separation between the sleeping space from eating and other daily activities spaces was meaningless.

**The lifestyle:** Entrance modernity and Lifestyle change caused changing in the housing, which required new lifestyle and behaviors, and this mutual effect will continue [1].

**Construction method:** In the past, the architects used local and available materials and facilities to speed up the construction and to have easy rebuilding. After the houses standardization and industrialization, they have used the industrial equipment's and achievements in their coordination-replacement and transformation process [13].

**The types and relations of the residential units:** In Iran, since the capitalism era and changing the life and production styles the houses have been gradually changed from the horizontal shape to the vertical one and the houses containing yards have been replaced by the residential complexes and apartments. Technology growth has caused more needs to the social relations, more immigration and population increase in the cities, tendency to have different types of housed with different relations such as living in the suburb, of the shared residential complexes, tall apartment, moderate residential complexes, tall apartment, moderate residential complexes and multi-functional buildings. The type of organizing each of these houses has caused special relationship inside the house and outside [13].

**The number and type of the residents, relation:** the traditional residential space in Iran provided a family safe and healthy environment and the families attempted on their children training and talking about their background history and passing their culture to the next generation. In this space, elder children were living with their wives in a section of their father house after marriage, because the houses were so big that provided enough spaces for several families to live together [14].

However, today extended families are rarely found in the apartments where many families live together, because the children separate from their father's house and make their nucleus family. This has caused individualism phenomenon and caused the house residents to become single.

**Encountering with the climate:** Prioritizing the given instructions and referring to the international architecture success in matching with the climate assumes that the purpose of making a house or any other structures is to protect the human living environment against the wind, rain, cold and hot [12]. Today, in order to meet these requirements, different heating and cooling devices are used, and some devices as an intermediate to receive and control the climatic energies are used instead of fossilized and unrenewable fuels.

**Relation with the nature:** Traditional houses including pools, expansive windows and porches are indicator of this need influence on the Iranian architecture designing. Architects made the housing free from its traditional fence-like limitations and allowed the building to be present. Human and his/her residential environment were located in a center of a collection exposed to free and green spaces. Big windows related the residents to the yard, outside nature and streets' and made an indirect relationship with the nature. Nevertheless, over the time and by increasing the houses in height and disappearing the yards and open natural spaces the natural element, existing in the houses have been greatly reduced. people go to the parks or the rural areas and the country natural place in order to meet their natural desire to be in the nature [1].

## CONCLUSION

Qajar architecture due to the entrance of some elements such as streets and squares to Iran and also traveling abroad, some changes occurred in Qajar architecture and the architecture in this period was formed based on these elements. At the end of the reign of the Nasereddin Shah, the buildings were constructed with a quite European appearance that had no symbol of Iranian historic architecture. These buildings are mainly constructed in the form of European neoclassical buildings. Fascination with the modern trappings and the better performance of the new Western styles were among the factors that led the architecture of this land to the European architecture. At first, the tendency was toward European architectural to the extent of decorations in the palace of the rulers and nobilities, but, from the reign of the Nasereddin Shah, the specified elements and symbols of European architecture were manifested in prominent buildings of our land. And another point of interest is that in the process of tendency towards architecture of the West, the first things which are seen like decorating, architecture and facade elements were influenced by the architecture of the West and what are not seen like section, materials and eventually plan are influenced by architecture of those lands in further procedures respectively.

Because this situation has caused that modern architects have given a lot of attention to technology and they have ignored the respectable inner space within which people should live. According to westernization of the people, the lifestyles of them have remarkably varied and thus amidst such a high variety, the traditional architecture has been defaced. In fact, it should be noted of the Iranian that identity is the same as the imitation of the traditional architecture since the reproduction of

the old designs is not deemed to be ideal and useful. Rather, the modern architecture design, on the one hand, should take the environmental, civil, technical and social pattern into consideration and on the other hand, they should produce architectural designs and patterns congruous with the early ideologies and concepts of the well-respected old houses. Therefore, one should consider special measures applied in traditional architecture for improving Iranian construction, whether in terms of design or execution of works and execution of suitable methods in designing buildings based on climate of the place, considering natural and imperishable forces such as the sun and wind and more importantly, promotes quality of comfort and health of residential environments. The measures taken in architecture of houses which have been formed based on needs of Iranians and construction environment can be useful for reaching a suitable Iranian house pattern.

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# LIVEABLE CITIES – FOUR EXAMPLES OF THE URBAN REGENERATION

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## ABSTRACT

This paper is devoted to urban regeneration in the context of increasing the quality of urban space and creating a liveable city. The paper consists of four parts. The first part contains general considerations regarding urban regeneration and highlights that regeneration is an important issue driving the creation of contemporary urban space in Europe. In the second part of this paper results of the OIKONET project will be described and discussed in detail. OIKONET – A Global Multidisciplinary Network on Housing Research and Learning was a Lifelong Learning Programme of the European Commission. During a workshop, an international group of students and teachers from- European Universities worked on urban rehabilitation of Kosančićev Venac in Belgrade. The third part presents an overview of the activities of the Urban Farmers movement, which aims to educate city residents on growing food in urban utilitarian gardens and on taking care for their neighbourhood landscape in an environmentally-friendly way. In the fourth part of the paper, ways to improve the situation in Bialystok through small scale urban acupuncture action undertaken by students on the Urban Design course are discussed. In conclusion, ethical land use patterns to reduce extreme economic disparities will be emphasized. The presented cases showed that many European countries have similar issues and highlight the need for bottom-up approaches to achieve sustainable communities. Making our cities liveable requires not only improving existing structures but it is also necessary to adopt strategies that intertwine environmental, social, psychological issues in the dynamics of renovation.

**Keywords:** *urban regeneration, liveable city, participation, urban acupuncture*

## INTRODUCTION

Every city has abandoned, no-man, degradable areas, both in the centre and on the outskirts. The reason for this may be the lack of ties in local communities, and the weakness of local governments. Poor management of the city's space evokes growing social conflicts. The advantage of private ownership of property over public property or social raises the question - for whom does the city exist?

Important criteria for the assessment of contemporary public spaces is their quality. We can distinguish several criteria for the assessment: the degree to which the space is inspired by its past; how space-friendly it is; how well it supports various activities; how well it is maintained and managed; the degree of social usage of the space. The problem facing architects is how to revive a deserted square in the centre? How to restore the neglected space of yards and streets to residents? How to include them in the process of integration with the city and with each other, which

would become a way to heal the surrounding area, but also to recover places that were previously empty, neglected, decaying, and often dangerous? How to make this process the beginning of conscious participation in the life of the city and thus contributed to limiting the clearly visible tendencies to privatize the urban space within closed settlements, shopping centres, guarded office buildings?

This paper is devoted to urban regeneration in the context of increasing the quality of urban space and creating liveable city.

The problem of city regeneration is extremely complex. As Roberts writes: „it is important to emphasize that there is no single prescribed form of urban regeneration practice and no single theoretical explanation than can be used to analyse all urban problem situations and develop appropriate solutions. In the much-changed circumstances of the twenty-first century, time and place both matter, and urban regeneration has to reflect particular local circumstances which define it”. [1] Renewal, regeneration, reconstruction, restoration and redevelopment convey different balances between maintaining current spaces or creating new ones, between preserving or transforming the character of a place, and between reusing existing structures constructing new ones.

## OIKONET PROJECT

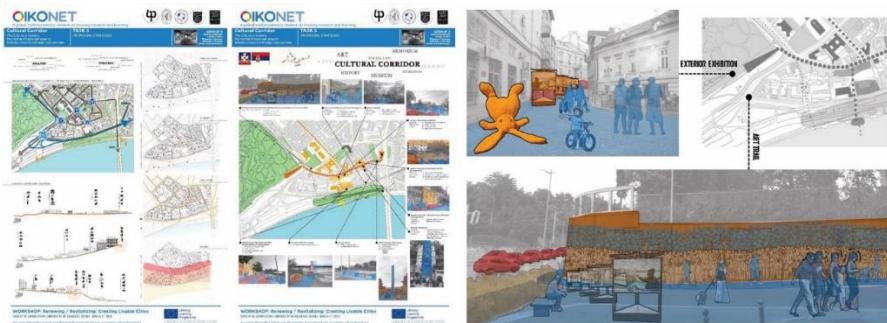
OIKONET - A Global Multidisciplinary Network on Housing Research and Learning was a Lifelong Learning Programme of the European Commission. As part of this program, a workshop was conducted in Belgrade in 2016 with participants from 19 European Universities working together to identify ways to rehabilitating the urban area of Kosančićev Venac, the central district of Belgrade.

The topic of the workshop was defined as follows - *Renewing / Revitalizing. Creating liveable cities*. The historical part of the city chosen for revitalization - Kosančićev Venac - is a heterogeneous, multifunctional area, located between the banks of the Sava River and the main pedestrian route, in the vicinity of the Kalemegdan fortress. Despite the excellent location in the city centre, this area has been neglected for many decades. This area required careful redefinition of views on cultural, educational and tourist importance of Kosančićev Venac, taking into account the point of view of different social groups.

In connection with the above, the objectives of the workshop were: identifying the specific features of the area, which includes the potential for future changes; multidimensional analysis of the environmental, social and psychological aspects of a city that is resident-friendly as a basis for the remodelling strategy; proposing revitalization strategies that allow participation of representatives of the local community; defining the transformation processes of existing spatial structures for other uses. During the workshop, 10 projects were created. Among the projects were both ones that presented a traditional approach, as well as those in which social media played a key role. The group of traditional projects included the design of The Cultural Corridor - The City as a Gallery, which proposed the creation of a cultural trail through the district. (Fig. 1) Its aim is to inspire local artists and provide them space to present their work, to propose actions that will activate the local community, tourists and future investors. The project proposes to connect the district with the Sava waterfront by modernizing the paths and adding elevators so

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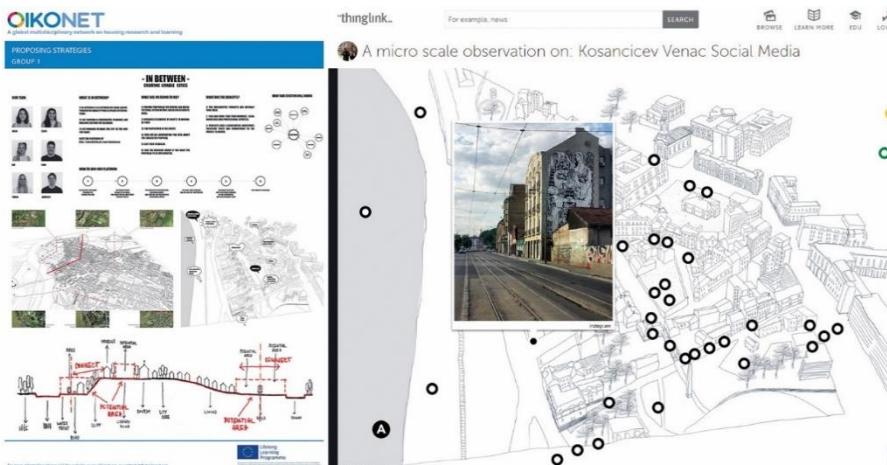
that the district becomes accessible to everyone. In the project the identity of the place was analysed, and then important historic buildings that define the cultural and artistic character of the area were selected. The Cultural Corridor proposal is an attempt to connect selected points, and through doing so force a specific type of



**Figure 1.** The Cultural Corridor - The City as a Gallery, source: <http://oikonet-belgradeworkshop.blogspot.com.es/search/label/Group%203> (20.05.2018)

circulation for both residents and tourists. The proposal was developed based on the analysis of functional zones, pedestrian and vehicular traffic as well as existing connections to the city centre, the Kalemegdan seafront and fortress. This allowed to determine the places of introduction of new complementary functions. [2]

Another interesting project, named In Between, suggested the usage of a digital platform for documenting ideas and valuable public spaces created on their basis. (Fig. 2) As the authors write: “We have prepared proposals for spatial and architectural activities based on the ideas of the residents. We organized a sequence of events to announce them. During the meetings you can get all the information you need about the proposed activities”. [3] For this purpose, the program Think Link was used, as it allows you to



**Figure 2.** In Between, source: <http://oikonet-belgradeworkshop.blogspot.com.es/search/label/Group%203> (20.05.2018)

complete graphic materials (photos, drawings, maps) with additional notes, photos, audio files, video and other multimedia content. Communication is based on a digital story and is available on any device (computer, tablet, smartphone). The end product is a multi-layer map which shows places where interviews with residents were carried out. Each photo or movie file corresponds to a location. In the next layer of the map, historical objects and those which, according to the authors, have great potential are marked. Each point leads to the photo database (Instagram). The third layer contains design proposals for various areas of the district. One of the most important elements of the project is a blog, where all interested parties can add comments and their proposals for revitalization activities. [3]

## **URBAN FARMS**

The way cities are transformed affects the quality of urban life and its public spaces. The importance of social movements, whose aim is the enhancement in the quality of the environment, improvement of living conditions, recovery of public space and place identity reconstruction, should be emphasized. People, through living and working in a space, produce it, giving it meaning. Lefebvre, assessing the contemporary city, draws attention to the participation of citizens who can contribute to the recovery of the city through collective actions and "gatherings". [4]

The activities of the Urban Farmers movement, presented in this chapter, include teaching city residents to take care of their neighbourhood landscape, through growing food in urban gardens which ultimately improves the quality of urban areas.

An example of the revitalization of degraded urban space, carried out by the city council, with the participation of the inhabitants is the project "Bruggen naar Rabot" in Ghent. The Rabot-Blaisantvest district in Ghent is the most densely populated district of the city, with a high proportion of foreigners and is one of the poorest areas of the city at the same time. It is separated from the centre by a large communication artery, and there is little public space or green areas within its territory. In 2007, a revitalization project was started, the implementation of which would to improve the quality of life of the residents. The aim of the project was to raise the level of socio-cultural engagement of the local community and create conditions for economic growth. The non-profit association established in 2006 together with the Department of Planning and Development created a meeting centre - De Site, which became a space for implementing projects for the benefit of residents. The experimental site for action was a 1.5-hectare plot, located in the central part of the district, which was created after the demolition of the Alcatel electronics factory production hall. The city council, in consultation with the community, decided to use the empty space to organize temporary communal spaces, in partnership with the residents. [5]

One of the elements of the project was the organization of the neighbourhood space: temporary "allotments", a football pitch, a small "zoo", and barbecue places. (Fig. 3) The area has become an active meeting place for residents, who have started to identify with this space and are responsible for its development and management.

These projects can be successful only when the residents are fully involved. This is possible when the local coordinators play a key role in the district and are a “bridge” between the city authorities and other local entities. Participation and involvement are key aspects of the activities undertaken. [6] Unfortunately in 2016, a development company commenced the construction of a housing estate in this area and the Site project was discontinued.



**Figure 3.** The temporary “allotments”, “Bruggen naar Rabot” in Ghent, source: authors photo.

The second example is garden at Moritzplatz in Berlin. This garden is a result of an action taken in 2009 by Nomadisch Grün, a non-profit organization , where a plot of land was leased near Moritzplatz to create a mobile urban farm - Prinzessinnengarten. (Fig. 4) In the 1960s, the Moritzplatz, at the end of the famous Berlin street Oranienstrasse, was a popular place for walks. Unfortunately, the policy of the Berlin municipal capital during the reconstruction in the 1970s resulted in the loss of attractiveness of this area. A modernist housing estate with high buildings (6 - 10 storeys) was built there. In the devastated Moritzplatz, director Robert Shaw and photographer Marco Clausen started the project of urban gardening. A trapezoid-shaped plot was chosen, located between the streets Oranienstrasse and Prinzenstrasse. 150 volunteers signed up for the works on the plot, preparing the area for cultivation and removing 2 tons of rubbish. Currently, the



**Figure 4.** The Prinzessinnengarten. Source: a) <http://prinzessinnengarten.net/fotogallerie/>, CC license, b) authors photo.

Prinzessinnengarten is a public space for both people working in the garden and visiting a café. “... the garden doesn’t belong to anyone,” explained Shaw. “We manage it, but anyone who wants to can participate, because the goal is to provide locally produced organic vegetables to the people who live in the district and promote community work and the revival of organic agriculture traditions that have been forgotten in cities like Berlin”. [7] It is a place where residents can experiment together and learn more about organic food production, climate protection, planting techniques or just relax and enjoy an oasis of greenery in the middle of the city. Around 20 people work permanently in the garden, which are responsible for different areas of cultivation. In winter, mobile vegetable patches are transferred to the building located in the garden, which also serves as the centre of the community. All products are grown without pesticides and fertilizers and are available for purchase. Every Thursday and Saturday meetings are held in the garden, the goal of which is learning to grow plants. There are also organized community suppers, for the preparation of which amateur cooks use products from the garden. The Prinzessinnengarten was created not only to turn the wasteland into a garden, but also to create a stimulus for the development of the poor neighbourhood. Nomadisch Grün, working with schools and immigrant organizations, intends to increase biological, social and cultural diversity in the district and become a pioneer of a new way of life in the city. In 2010, the Prinzessinnengarten received the Utopia Award.

## DESIGN ON A SMALL URBAN SCALE

Raising the quality of public space does not have to be the result of comprehensive large-scale planning undertaken by municipal authorities. These can be activities based on simple ideas. “This is the end of the big investments, we want to start making little changes” said Marlena Happach the Director of Architecture and Spatial Planning in Warsaw at the reSITE Conference in Prague in 2017. [8]

As part of the 4<sup>th</sup> semester Urban Design course, students at the Białystok University of Technology have worked on identifying small-scale urban acupuncture actions in order to improve areas of Białystok. (Fig. 5)

The aim of the project was to find small degraded areas in the city and develop a project around them. The process of searching was very important, as according G. Cullen a designer will start to understand the city only when they grasp the art of observation of the relationship of space, form and function. [9]

The identified areas should be useful for the local community, and spur further activities on a larger scale. The effect of these activities may be a revival of empty or misused spaces or an increase in the attractiveness of neglected but popular places, such as underpasses and downtown squares. The guiding idea accompanying the formulation of a design solution should be striving to create a high quality urban space. The students analysed devastated spaces, defined existing conflicts (functional, compositional, aesthetical) and then prepared a complex solution for the chosen area. As a result, a number of interesting propositions were created. These projects had only one drawback - they were very good from a formal

point of view but did not take into account the opinions of the residents and thus did not ensure their future participation in the management of the created spaces. Such a course of action can be classified as top-down action, which is the least effective in solving social problems.



*Figure 5. Urban acupuncture project, student M. Lodzińska, IVsemester*

## CONCLUSION

In conclusion, as it can be seen from the presented cases, many countries in Europe face similar issues, showing the need to implement bottom-up approaches in order to achieve sustainable communities. Urban design decisions that are undertaken in the small scale may transform the city as a whole and will make our cities and suburbs more liveable for children, elderly and the poor.

The revitalization of urban areas requires a comprehensive and integrated vision and actions that will lead to solving problems by permanently improving the economic, material, social and ecological condition in the area that is being revitalized. It should be remembered that although we live in an increasingly globalized world, the local situation still has a strong impact on the shape of everyday life.

In the process of urban revitalization, it is important to maintain a balance between existing structures and new solutions. The city, being a multi-layered structure that harmonizes with the collective memory of its inhabitants, is also an

organism that requires new stimuli to stay alive. Maintaining the balance of existing and new spaces within the city, which can preserve or transform the character of a place, is made possible through renewal, regeneration and revitalization actions. Making our cities liveable requires not only improving existing structures but it is also necessary to adopt strategies that intertwine environmental, social, psychological issues in the dynamics of renovation. An interdisciplinary, inclusive and participative approach is necessary to develop strategies to achieve liveable cities that take into consideration physical, social and psychological realms. The presented examples show that the participation of representatives of social sciences in the processes of revitalization is necessary to better understand the aspirations of people.

## **ACKNOWLEDGEMENTS**

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# NATURE-BASED SOLUTIONS FOR CLIMATE RESILIENT BUILDINGS AND CITIES

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## ABSTRACT

The paper addresses the topic of nature-based solutions applied in the architectural and urban design. These ideas are analyzed in the context of the opportunities they create for the humanity in terms of the sustainable growth and environmental protection. Nature-based solutions are inherently taken from nature. The first part of the paper presents their tremendous potential to be energy and resource-efficient, and resilient to change. In the second part of the research particular concepts driven from nature (copied form nature or inspired by nature) proposed for the buildings and cities are described and evaluated. The author discusses their functional usefulness, spatial appropriateness, adaptation to local conditions, end-user comfort, environmental benefits and the possibility of duplication. Nature-based solutions applied in urban planning can make cities more climate resilient and contribute to ecosystems restoration. The paper describes how sustainable urbanization can stimulate economic growth, make cities more attractive and enhance well-being of the inhabitants. It is also explained how particular buildings can benefit from the concepts driven from nature e.g. by increasing their energy efficiency and performance in terms of raw material consumption. In purpose to properly response to the climate challenge, humanity has to establish a new kind of partnership with nature. Using nature-based solutions should be considered as an important part of this approach. The concepts presented in this paper show some of the most promising options, such as integration of living systems with built systems and innovative combinations of soft and hard engineering. In conclusion some of the most promising nature-based solutions for climate resilient buildings and cities are indicated.

**Keywords:** *climate, ecosystem, building, resiliency, sustainability*

## INTRODUCTION

Nature-based solutions applied in the architectural and urban design are analysed in the context of the opportunities they create for the humanity in terms of the sustainable growth and environmental protection. Nature-based solutions are inherently taken from nature. The first part of the paper presents their “tremendous potential to be energy and resource-efficient and resilient to change” [1]. In the second part of the research particular concepts driven from nature (copied form nature or inspired by nature) and proposed for the buildings and cities are described and evaluated. The author discusses their functional usefulness, spatial appropriateness, adaptation to local conditions, end-user comfort, environmental benefits and the possibility of duplication. That leads to the selection of the most promising nature-based solutions for climate resilient buildings and cities.

## **OPPORTUNITIES CREATED BY NATURE-BASED SOLUTIONS**

Nature-based solutions applied in urban planning can make cities more climate resilient and contribute to ecosystems restoration. Sustainable urbanisation can also stimulate economic growth, make cities more attractive and enhance well-being of the inhabitants. Particular buildings can benefit from the concepts driven from nature e.g. by increasing their energy efficiency and performance in terms of raw material consumption. Nature-based approach should be perceived as the basis of the maintenance, restoration, and sustainable use of ecosystems, which is a first step for the climate change mitigation [2]. In this light, among the most promising opportunities created by nature-based solutions we can distinguish:

- Restoration of degraded city ecosystems (including water, soil and green areas)
- Enhancing biodiversity in cities, creating green and sustainable spaces
- Natural cooling and ventilation within the city
- Creating energy networks based on RES
- Increasing carbon sequestration
- Improving risk management and resilience, e.g. in coastal areas.

In the building scale nature-based solutions may contribute to:

- Increased energy and resource efficiency
- Innovative thermoregulation
- Resilient response to change
- Improved user comfort and well-being.

## **ACTIONS INSPIRED BY NATURE FOR CLIMATE RESILIENT CITIES**

In this part of the paper some nature-based solutions are analyzed in terms of their adequacy for the actions aimed towards climate resilient cities. The important role of nature-based urban regeneration is emphasized with particular stress on blue and green areas. It is also shown how natural cooling and ventilation can improve the quality of life in the cities. Finally the author explains the concept of ecosystem restoration and conservation inspired by nature.

## **URBAN ECOSYSTEM REGENERATION INSPIRED BY NATURE**

While a lot of actions have been undertaken for the cultural heritage conservation in cities, very few are oriented towards tackling challenges arising from biodiversity loss, climate change, more frequent natural disasters and rapid urbanisation [1]. At the same time nature-based solutions applied in the city scale can bring about considerable benefits for the local climate, biodiversity and water management. An interesting example of bioclimatic urban design in combination with urban ecosystem regeneration and climate action can be observed in ParcBIT, near Palma de Mallorca, Spain. ParcBIT project, developed in 1994-1999 by Richard Rogers & Partners (currently Rogers, Stirk, Harbour + Partners) and inaugurated in 2002, was supported by Ministry of Economic Development for the Balearics Region and partially financed by the European Union Thermie

Programme. The proposal addressed the issue of regeneration of the dry and neglected northern suburb of Palma de Mallorca. The concept was based on the ecosystem healing with the increased biodiversity level that prevents soil erosion.

Nature-based solutions developed for ParcBIT were based on the series of biological and climatic analysis. One of the most important aspects was to provide the necessary amount of water for the new estate and surrounding agricultural areas (50 hectares altogether). Research model allowed to calculate the water demand for the summer season, when the precipitation level is insufficient. On the basis of this calculations the network of water reservoirs and weirs was designed to collect water from the winter rainfall and use it in the summer. The new development complements the landscape, local ecosystem and circulation patterns [3]. Buildings are located on the terraces, among the trees (Fig. 1). Ventilation corridors and shadowing elements are combined with the pedestrian communication system. The parking area located outside the estate



*Fig.1 ParcBIT, Palma de Mallorca (from 2002), Richard Rogers and Partners. Buildings are located on the terraces, among the trees. Phot. B. Widera,*



contributes to better air quality as well as to the continuity of watercourses and small animals paths (Fig. 2).

Sustainable community uses renewable energy sources and applies elements of circular economy model. ParcBIT is self-sufficient in terms of water and food supply. Electricity is produced from the photovoltaic panels located outside the estate, while thermal comfort in the buildings is provided by the central heating and cooling system (CHCP). The edifice complex is equipped with the collection and recycling system which includes also water treatment and recovery unit. ParcBIT houses residential buildings, offices, business centres, commercial, service and educational facilities (school and kindergarten). Some of the most valuable aspects of this project are related to its positive influence on the local climate resulting from advanced technology used for the benefit of the environment and the users.

### **NATURE-BASED CONCEPTS FOR ECOSYSTEMS RESTORATION: GREEN AREAS, SOIL AND WATER CONSERVATION**

Remarkable cases of nature-based solutions are the ones that use the same technologies that can be found in nature. Many of them are related to the conservation of green areas, soil and water. These are phytopurification, soaking, aerating and others. Some natural methods, e.g. evapotranspiration, may be used for carbon sequestration and thus contribute to preventing climate change.



The water aeration technique was successfully applied in Sparman (Kamenz, Germany). This former granite quarry was filled with water in 1970s but the water was muddy, with very low biodiversity level. In the first decade of the 21st century actions for ecosystem restoration were undertaken. They involved innovative concept of water conservation. A hose connected to compressor (which normally serves for filling diving cylinders) delivers air to the depth of 60 meters, which results with water aeration. Constant water movement prevents rotting processes at the bottom. That contributes to cleaner and warmer water inhabited by many plants and fish (e.g. huge sturgeons and pikes). The quarry is used as an attractive spot for scuba diving, which is an interesting option for revitalization of post-mining areas (Fig. 3). Local dive center developed environmentally safe infrastructure for divers and visitors, such as tank filling station, safe access to water, underwater platforms for exercises and bathymetric maps of the reservoir. Using any kind of cosmetics

and chemical products is strictly prohibited. Multiple information boards help the guests to understand the ecosystem demands and challenges. This action helps to promote ecotourism and support local communities as new jobs and business opportunities are created (e.g. accommodation, restaurants, shops, etc.) [4]. However, the biggest advantage of this nature-based concept is its positive influence on ecosystem restoration, including green areas, soil and water conservation. Similar methods can be duplicated to restore degraded water areas in cities and adapt them for well-being and sport activities.



### NATURAL COOLING AND VENTILATION OF URBAN AREAS

The most natural and effective way to provide cooling and ventilation in urban areas is to fill them with greenery. Threes, creepers, green roofs and walls offer shading, keep good humidity balance, absorb noise and dust, absorb CO<sub>2</sub> and produce oxygen. The concept of properly designed green corridors and wind passages that distribute fresh air throughout the urban tissue allows for natural ventilation. The successful application of natural cooling methods in the contemporary city could be observed in Miami (Florida, USA). With its hot and humid climate Miami suffers from overheating of urban areas. Especially in the summer months it is crucial to provide free access to outdoor zones with comfortable temperature range. Pérez Art Museum in Miami by Herzog & de Meuron (2013) with the green installation by Patrick Blanc is a spectacular example of the edifice dedicated to art, that created a high quality public space with natural shading and ventilation in its surroundings (Fig. 4)



**Fig.5** Pérez Art Museum, Miami (2013) Herzog & de Meuron, P. Blanc. Recreation area. Phot. B. Widera 2017.

The elevated platform on which the three-story building is located and the extended canopy create a shaded veranda which brings the park into the museum [5]. French botanist, Patrick Blanc, in cooperation with local landscape architects and horticulturists, designed impressive columns and tubes hanging from the openwork ceiling planted with lush vegetation. The vertical gardens with tropical plants enfold the museum. The perforated canopy allows daylight penetration into the building.

The Pérez Art Museum and the green area around it are located on the waterfront. Landscape design encourages pleasant walking and outdoor recreation for families and tourists seeking for a moment of relax or open-air casual dining (Fig. 5). Various activities and events are regularly arranged. It is worth to note that the greenery was design to enrich existing ecosystem and create a home for birds, bees and small animals. The waterfront park was further extended with the establishment of Phillip and Patricia Frost Museum of Science (2017) by Grimshaw Architects in cooperation with Rodriguez & Quiroga Architects Chartered. Together with Watson Island Park, Miami Children's Museum and the Jungle Island, the complex consisting of parks, museums and waterfront allowed for cool breeze penetration towards Overtown. In the consequence it contributed to the improvement of the air quality as well as the thermal and visual comfort of the users. Environmental benefits should also be emphasised.

## NATURE-BASED CONCEPTS APPLIED IN BUILDINGS

Some innovative nature-based concepts for building design are briefly presented in this part. Examples include animal-based thermoregulation, thermal mass and water storage applied in the building scale [6].

## THERMOREGULATION AND ENERGY EFFICIENCY

Animal thermoregulation becomes more and more popular inspiration for nature-based building design. For example the fat stored in the camel's hump is a source of energy and water as a metabolism by-products. If the camel was evenly greasy, it would be difficult for him to transfer the heat surplus from the body to the environment (this process takes place mostly at night when the air is cooler). This observation can be used as a basis for building thermoregulation and energy efficiency. Some of the interesting cases involve passive night cooling combined with water storage. Radiant cooling solutions have been lately improved with more effective distribution of water or other cooling liquid. It is possible with the adequate control systems, such as BMS or Domotica. Promising results have been also achieved with the application of Passive Infrared Night Cooling (PINC) technology developed by ZAE Bayern in combination with phase change materials used for the heat storage and cooling [7].



*Fig.6 SolarLeaf, Hamburg (2013) bioreactive façade, Splitterwerk Architects, Arup. ©Colt/Arup/SCC.*

## RESILIENT RESPONSE TO CHANGE

Ability to provide adequate response to changing environmental conditions is one of the most amazing features of nature. Nature-based solutions for buildings discussed in this paper combine multiple functions and benefits to make the system more resilient: allow for maximum level of the user safety and comfort, preserve ecosystem health and biodiversity, reduce environmental pollution with carbon storage, etc. Advanced building skins can adapt to changing environmental conditions with properly designed gas and liquid exchange as well as various temperature and humidity control strategies. Façade materials containing titanium dioxide are able to eliminate pollutants from the air. Similar effect can be achieved with wall bio-filtration systems where properly selected green plants absorb toxins and improve air quality with higher oxygen partial pressure. Some innovative hybrid façade solutions combine photovoltaic energy with thermoregulation allowing for recovery of the part of solar energy which was not converted to electricity. Other nature-based solutions demonstrate sustainable energy production, e.g. from organic photovoltaic cells or microalgae biofaçades [8] (Fig. 6).

## CONCLUSION

In purpose to properly response to the climate challenge humanity has to establish a new kind of partnership with nature. Using nature-based solutions should be considered as an important part of this approach. The concepts presented in this paper showed some of the most promising options, such as integration of living systems with built systems and innovative combinations of soft and hard engineering. Sustainable urbanization can stimulate economic growth, making cities more attractive and enhancing well-being of the inhabitants. Particular buildings can benefit from the concepts driven from nature e.g. by increasing their energy efficiency and performance in terms of raw material consumption. Other valid opportunities created by nature-based solutions are related to healing and restoration of degraded city ecosystems (including water, soil and green areas), enriching biodiversity in cities, creating green and sustainable spaces, providing natural cooling and ventilation within the city, creating energy networks based on RES, reducing pollution and environmental emissions with increased carbon sequestration, improving risk management and resilience, e.g. in coastal areas. The final conclusion of the paper is that nature-based solutions are often low-cost, logical and efficient and therefore should be considered in the first place in any kind of environmental and climate actions.

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## REVITALIZATION OF THE ARCHIMANDRITES' PALACE INCLUDED IN THE HISTORIC MONASTERY COMPLEX IN SUPRASL

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### ABSTRACT

The article is devoted to the problems of the revitalization of the Archimandrites' Palace, part of the Monastery in Suprasl (Podlasie Voivodeship, Poland) established at the turn of the 16<sup>th</sup> century. In the introduction of the paper, the subject of considerations was defined, and then the historical background was presented. The main part of the paper consists of four chapters, the first one presenting the condition of the building before work began. The second chapter describes the work process and technological solutions applied. The following two chapters present the effects of the work carried out: the third presenting the appearance of the building after the works. The fourth chapter describes the effects of cultural, scientific, religious and artistic events for the local community that take place in the restored rooms. Finally, the article concludes by underlining the importance of research for other similar activities.

The Archimandrites' Palace was probably erected in the mid-seventeenth century (historical sources do not date the object clearly). It was built on the projection of a rectangle with two risalits from the eastern side, between which a loggia was placed. It is a three-story building crowned with a richly profiled cornice, rusticated in the corner, and covered in part with the hipped roof and the mild roof. The building is without a basement, fixed in a lengthwise arrangement. Originally, it was designed to be used as a monastery. However, over several hundred years, its function changed repeatedly. During the Second World War its upper part – the roof and the highest storey – was significantly damaged, though, after the war, these were reconstructed. Before starting the works described in the paper, the building was in a state of devastation due to its lack of use for several years.

The author, who has been conducting conservation and construction works at the monastery in Suprasl for 20 years, focused special attention on presenting the most important conservation solutions. The functional solutions and their impact on the vintage building material were also explored. Describing the effects of the activities carried out, the restoration of the particular elements which restored the element of attraction for tourists is emphasized. The author draws attention to the physical facilities created in the Archimandrites' Palace for scientific, educational and artistic activities.

In conclusion, the paper presents the revitalization of the Archimandrites' Palace as a positive example not only of the reconstruction of the vintage building material but also of the generation of an object whose impact strongly affects the local community. This is an example that can be applied to other objects of a similar type.

**Keywords:** *revitalization, the Monastery in Suprasl*

## INTRODUCTION

The scientific discussion on a renovation of historic buildings usually focuses on conservation and technical issues aimed at restoring the vintage building material. New and more effective techniques allowing to restore monuments to their original splendor are nowadays regularly being presented and analyzed. However, scientific analyses often overlook the entire spectrum of issues resulting from the renovation of historic objects and affecting many other areas of life. The monastery complex in Suprasl built at the turn of the 16<sup>th</sup> century is an example of an object that, apart from regaining its technical efficiency, has also had a wide impact on many areas of life. The monastery, taken more than thirty years to restore is one of the most important monuments of Podlasie Voivodeship (Poland). Because the current number of monks is too small, the monastery can provide its function only partially. Therefore part of it is used for complementary services, such as being the center of religious thought in the form of The Academy of Suprasl, The Museum of Icons, the School of Iconography, a charitable center of mercy, or the Pilgrim's House. The Archimandrites' Palace (Fig. 1), which in the years 2012-2014 underwent thorough conservation and construction works with adaptation to the needs of the Academy of Suprasl, plays the leading role in the whole complex of the monastery's buildings. The conservation works were one of the most important carried out in Podlasie Voivodeship where there is no such other large edifice – the work covered 24176 m(3) – still boasting the original building material from the 17<sup>th</sup> and 18<sup>th</sup> centuries.



*Fig. 1. The Archimandrites' Palace, the front elevation, west side. Photo by A. Musiuk.*

The paper presents the historical background, the technical condition of the Archimandrites' Palace before the conservation and construction works, their course and effects. The impact of the effects of the work in the cultural, historical, religious, educational and economic spheres, both for the city of Suprasl and the entire Podlasie Voivodeship is indicated.

## THE HISTORICAL BACKGROUND

The precise date of the Archimandrites' Palace establishment cannot be easily defined because of ambiguities in historical sources. Therefore, its dating is based on hypotheses. The thesis of Waclaw Kochanowski [1] is most commonly accepted. According to historical sources (among others [2]), he supposed that in the place where the Archimandrite's Palace now stands, wooden monastery buildings were originally established, then in 1545-1557 a brick refectory, a chapel, a kitchen and a pantry were built. On this base in the years 1635-1655, the present form of the Archimandrites' Palace was created. This dating, however, may raise doubts because Archimandrite Mikolaj Dalmatov (the prior of the Suprasl monastery in 1881-1906) describing the icon of John the Evangelist painted in 1636-1643, containing the image of the then monastery, did not mention the Archimandrites' Palace [3]. Admittedly, a record about bricking up several cells during archimandrite Dubowicz [2] term in 1645–1654 is found, but it is difficult to consider the Archimandrites' Palace in the historical sources was named "several cells". The next record about construction works comes from 1665, where the monastery paid for wood [2] which could theoretically be used for the timber roof truss of the palace. However, it took place during the time when Archbishop Gabriel Kolendo (1656-1674) was prior. At that time, the monastery fell into ruin and as the 18th-century chronicler wrote, "monks walked without habits" [2]. It is difficult to recognize that the magnificent Archimandrites' Palace was built then. The records from 1721 presenting the securing of funds for "bricking up the Suprasl monastery" [2] and assigning income from the printing house operating in the monastery for the same purpose shown in the letter from 1728 [2] seem to be a solution that indicate the period of the construction of the Archimandrites' Palace. Admittedly, a record for a considerable sum "for ending the construction of brick buildings" [3] from 1753 is found. Per contra, it rather refers to the construction of the corps from the south side of the monastery, begun in 1753 [4]. Such interpretation is also accepted by Dalmatov. The construction of the Archimandrites' Palace was undertaken during the first half of the 18th century, which is confirmed by the inventory of the monastery from 1764 [3]. Nowadays, this thesis is confirmed by Zofia Pilaszewicz, pointing to the construction of the palace in 1708-1764 [5].

The Archimandrites' Palace served monks briefly. Beginning in 1807, until the Second World War, its part or whole played the role of a military hospital, an arsenal of weapons and ammunition and a textile factory [6]. In 1944, as a result of the bombing of the church of the Annunciation of the Virgin Mary, the Archimandrites' Palace [7] was also largely destroyed. The timber roof truss was broken, most of the walls of the second tier were destroyed, several vaults collapsed and a large part of the building was burnt.

## THE CONDITION OF THE PALACE BEFORE BEGINNING THE WORKS

After the end of the Second World War, the palace was cleaned of debris. The rebuilding was adapted for the needs of the school located here in 1955 [1]. In 1954-55 the palace loggia was reconstructed, the cavities of the stucco refectory's decorations were secured and complemented, and the stucco and sculptural decoration of the chapel was partly reconstructed [8]. Between December 1969 and

August 1972, the conservation was carried out with a partial reconstruction of the painting and stucco decoration of the chapel and refectory of the Archimandrites' Palace, and these rooms were used as the museum's seat [9]. In the 1990s after the school left the Archimandrites' Palace, the building was mostly unused and unheated. All utilities were disconnected from it. This led to a situation in which the immediate repair lay in setting up a roof truss and roof covering. The repair of damaged and damp walls was a particular problem. Starting from June 1998, the conservation and construction works of the monastery complex are carried out under the supervision of the author of this publication. In the period between 1998 and 2011, the works carried out at the Archimandrites' Palace was only provisional: the building was covered with ceramic roof tiles, wooden windows were replaced, and in 2006 conservation works of all facades were carried out. Despite the work done in 1945-2012, the interior of the Archimandrites' Palace remained dire. Many parts of the building were in ruins. This was mainly due to the lack of use and of heating of the facility in the 1990s and beginning of the 21<sup>st</sup> century.

Work that began in 2012 had to be thoroughly comprehensive. Before their commencement, a survey was conducted on the matter of historical polychrome. It did not give a positive result. Further, the condition of the edifice was assessed, stating numerous places of moisture on walls and numerous efflorescences. Deep damage to the brick was also discovered. Such a state primarily concerned the ground floor. The lack of horizontal wall insulation was found as the cause of this destruction. The rising moisture evaporated from the walls, and the vapor-proof coating hindered results of not only the increase of the coverage of moisture in the walls, but also loosing of the painted surface from the substrate as a consequence of salinity. Damages of the painting layers and plasters were also partially observed in higher parts of both the ground floor and higher stories. They appeared over previous roof leaks and where there was condensation of water vapor due to the lack of heating in the building. In the attic, probably due to the leakage of the roofing, the walls had strongly dampened, causing fungal infestation. Fungus was also partly found in other places where there was long-lasting moisture: especially ceilings and walls on the second floor and upper parts of the staircase. In places where the plaster became detached from the walls, it was obvious that the walls bear traces of numerous alterations. Moreover, the outcrop of floor layers was made, which resulted in the statement that they were made without the use of anti-moisture and thermal insulation. During the inspection of the building's structure, a few cracks were discovered, but their destruction did not proceed. The reason for these cracks could have been the original sinking of the building, or later numerous construction works changing the load structure in the building. They could also be the result of war activities.

## **MAIN CONSERVATION AND CONSTRUCTION WORKS IN THE YEARS 2012-2014**

Generally, the work should be divided into two groups: the first restoring the historic building material, and the second adapting the building to the new functions of the religious, cultural and educational center. The key task in the first workgroup was to counteract the occurrence of moisture in the walls, and thus to counteract their salt damp. It was decided to remove degraded plasters from the walls on the ground floor and to replace damaged brick fragments and to make renovation

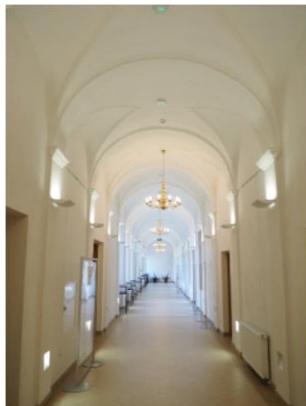
plasters in accordance with the WTA data sheet. In addition, a horizontal insulation was made by pressure injection method. Sections of walls with visible cracks, or a damaged structure that meant loss of durability, were rebuilt or tuckpointed. New plaster fragments were made with renovating plaster technology and merged with the historical ones by putty with microfibers to avoid cracks at the joint. All elements of the interior design with conservation values have been subjected to individually designed conservation programs. The hall, the conference and exhibition halls, the library and the new so-called "great refectory" were created to adapt the building to new functions. A major problem during the work was the correction of the functional layout of the building to adapt it to the requirements of the enforced standards for public buildings and rooms intended for human occupation.

Current fire regulations requiring the layout of an internal communication providing safe escape routes and installation equipment often created conflict with the existing historical space. This happened also in the case when the facility had to be adapted to the requirements for disabled people. Therefore, the work was based on the assumption that the most valuable rooms in terms of history will retain their original function and design. Some of the less valuable spaces have changed, but in each case, the violation of the original building material has been minimized. The elevator construction, which was a prerequisite for preparing the building for the needs of disabled people, was a particularly large interference of the structure of the building. The lift shaft was placed in the western part of the building in a place with a relatively small amount of the original building material (photographs taken after World War II show that this part, due to the bombing of the Church of the Annunciation of the Virgin Mary, was the most damaged) which minimized historical losses. The lift shafts itself was made of full bricks of 25 cm thick, in the attic it is made from a reinforced concrete construction of 20 cm thickness. In the place where there was perforation for the lift shaft, the necessary adjustments to the structure of the timber roof truss were made, but the geometry of the roof covering was not changed. The concern of large interventions in the vintage building material was aroused by the performance of a large, representative lecture hall. A modern "piece of furniture" (Fig. 2) inserted into a historic room was the solution assuming the least possible interference in the vintage matter. The supporting structure of the auditorium was made of steel profiles set on the ceiling in oak wood cladding finish. The balustrades were made as posts manufactured from steel profiles fastened to the auditorium structure and covered with a wooden cladding. The filling of the balustrade is a safe laminated glass of 15 mm thick. Upholstered auditorium seats made of wood were directly attached to the steel structure of the auditorium. The auditorium podium was made as three segments with steel construction in the oak wood finish.

### THE CONDITION OF THE OBJECT AFTER THE END OF WORK

As a result of the work carried out, the Monastery in Suprasl gained a modern facility embedded in its vintage building material. The largest rooms, the main lecture hall found its place on the first floor, the chapel in its historical place on the axis of the Archimandrites' Palace on the ground floor, the "great refectory" and the kitchen facilities in the south from the chapel. In the other parts of the palace, there

are two lecture rooms, two exhibition rooms, a library with a reading room, auxiliary and technical rooms. In the ground floor level, there is a unique vintage communication trial (Fig. 2) around the monastery courtyard, appearing in all buildings of the monastery complex, which from the east, south and west side close the courtyard. As part of the works, the unity of all valuable rooms has been preserved (ex. covered with a common layout of the vault). The historical character of the rooms is preserved whilst placing a modern and functional form within it.



**Fig. 2.** The interior of the Archimandrites' Palace after works: the main lecture hall (on the left), the communication trial (on the right).

### EFFECTS OF THE CONDUCTED WORKS

The opening ceremony of the Archimandrites' Palace, with the participation of the Prime Minister of the Republic of Poland, the primate of the Polish Autocephalous Orthodox Church and other officials took place on February 24, 2014. A new chapter in the history of the monastery has begun since then. In its post-war history, up to this point, the monastery had attracted tourists primarily with its restored monuments. Currently, tourism has been supplemented with scientists, theologists and artists. The monastery refers to its heyday when in the 16th century it was not only the largest Orthodox monastery center in the lands of the Grand Duchy of Lithuania but also the center of theological, cultural and educational thought that was most active in this area [3] [10] [11]. Nowadays, in the Archimandrites' Palace numerous scientific conferences, readings, prestigious exhibitions and various cultural events and workshops are held. In the years 2014-2016, the number of participants of events organized was 9368 people.

At the same time, the positive effects of the work both for the community of Suprasl and for the entire Podlasie Voivodeship should be noted. A fragment of the Suprasl, in which the monastery is located, was almost completely destroyed as a result of hostilities. It was unable to function for over ten years after the end of the war. Only the restoration of the monastery buildings with museum function in the 1960s and monastery function since the 1980s causes that the place where the Suprasl monastery is located is slowly becoming the most important area of the city. The number of visitors to the monastery complex grew from around 1000 per year in the 1980s to around 100,000 in 2016. The Monastery in Suprasl focuses primarily

on tourism, but also generates accompanying functions around it, such as hotels, restaurants, agritourism, bicycle paths, etc. The restoration of the Archimandrites' Palace extends the range of accompanying functions, primarily focused on tourism for scientific, cultural and educational functions.

## CONCLUSION

The revitalization of the Archimandrites' Palace is a great example of a restoration of a historic building which not only restores this object but also revives the area in which the object is located. It is important not to concentrate only on the restoration of the building material of the object during the conservation works, but also to give the building "life" – to serve the community. At the same time, such works must also minimize the interference in the vintage building material, which was particularly emphasized during the work of the Archimandrites' Palace. The example of the revitalization of the Archimandrites' Palace and other objects of the historic monastery complex in Suprasl, indicates that proper preparation and implementation of the work affects not only the restoration of the vintage building material but is also beneficial to other branches such as tourism, culture, and education, thus developing the economy. To conclude, it is mainly the development of the monastery that transformed Suprasl from sleepy and little known in the early 1970s into a Europe-wide center. The experience gained during the revitalization of the Archimandrite's Palace can be used during the restauration of the other objects. It can be an example of how to conduct conservation works in an effective way so that their effect would not only restore the vintage building material but also influence the economic development of the local community.

## ACKNOWLEDGEMENTS

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# **SMOG IN BIALYSTOK IN POLAND. DATA OF PM 2.5 AND PM 10 PARTICULATE MATTER IN OUTDOOR AIR MEASURED IN 2017-2018 BY "THE LABORATORY OF ENERGY-EFFICIENT ARCHITECTURE AND RENEWABLE ENERGIES" AT FACULTY OF ARCHITECTURE OF BIALYSTOK UNIVERSITY OF TECHNOLOGY**

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## **ABSTRACT**

The differences between what in the winter 2017 was presented by the government measurement station of air quality, belonging to the Chief Inspectorate of Environmental Protection (CIEP) in Bialystok in Poland, and what the citizens could see and smell, were the reason for installing the monitoring system of PM10 and PM2.5 particulate matter, in the "Laboratory of Energy-efficient Architecture and Renewable Energies" (LEARE) at the Faculty of Architecture of Bialystok University of Technology. The measurements were compared with done by CIEP and the information of "The World Air Quality Index" (WAQI). This project started in 2007. It is proving a transparent Air Quality information for more than 70 countries, covering more than 9000 stations in 600 major cities. Since 16 Nov 2017, data was also downloaded from the new European Air Quality Index (EAQI) website, created by the European Environment Agency (EEA). From the beginning of 2018, data from the public-private service AIRLY was added to the study. They installed four online dust meters in Bialystok. The density of the dust measurement network was still insufficient, so the mobile measurements were started. Recently, the use of a drone equipped with a dust meter for tests at various heights has begun.

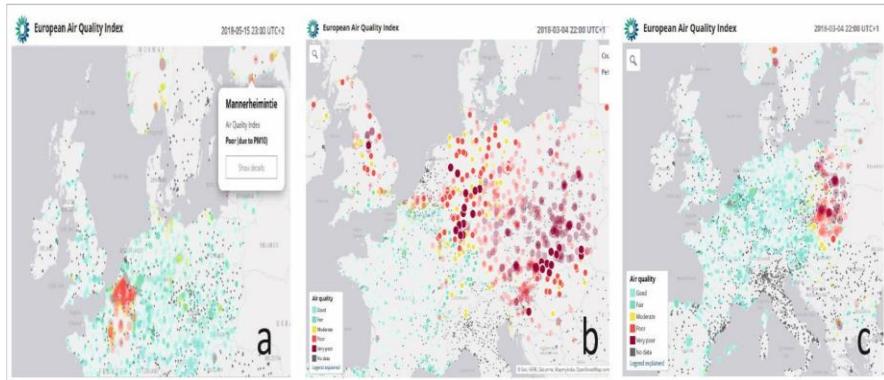
Measurements denies EAQI presentation of so good air quality in Bialystok. The levels of PM2.5 and PM10 are often much higher than those presented by EAQI and CIEP. Government measuring station, located in the center of Bialystok, poorly reflect air pollution in peripheral districts.

***Keywords: smog, PM2.5 PM10, LEARE, Bialystok, monitoring***

## **INTRODUCTION**

Thirty-three cities from Poland are included in the World Health Organization (WHO) Report 2016 listing fifty cities in the European Union with the most polluted air. In the report of the European Environment Agency (EEA) 2017 mentioning the concentration of PM2.5 in the air in European cities among the ten most polluted as many as seven cities are in Poland. 16 Nov 2017 European Environment Agency (EEA) and the European Commission introduced a new European Air Quality Index (EAQI) that allows to check the current air quality across Europe's cities and regions. The new EEA online service is based on measurements from more than 2000 air quality-monitoring stations across Europe. The Index consists of an interactive map presenting the local air quality situation at station level, based on

five key pollutants that harm people's health and the environment: particulate matter (PM2.5 and PM10), ground-level ozone (O<sub>3</sub>), nitrogen dioxide (NO<sub>2</sub>) and sulphur dioxide (SO<sub>2</sub>). The worst rating for any of the five pollutants measured by the station are showed by a coloured dot on the map, corresponding to the pollution level (turquoise - good, green - fair, yellow - medium, orange - poor, red - very poor).



**Fig.1** Air quality in Europe according to EAQI: a- rare, b- sometimes, c- often; (gray points mean non-functioning or disconnected measuring stations), a. A. Turecki

## BIALYSTOK

The population of the city was 300.000, it's area ~102 km<sup>2</sup>. Therefore, the population density is low - less than 3 thousand persons per 1 km<sup>2</sup>. The city looks green. Especially in terms of greenery. It has many gardens, squares, parks, very large XVIII c. garden composition, even meadows and forests. Within the city limits there are as much as 1847 ha , almost 19 km<sup>2</sup> of forests, much more in the neighborhood -1175km<sup>2</sup>. The city is surrounded by them. Currently, after the fall of factories from the 19th and 20th centuries in the city, we have almost no industry that pollutes the environment. In statistics, everything looks "very eco". Some time ago, a slogan promoting the region - the "Green Lungs of Poland" - was created. And so it is, until winter comes. Then it gets a little more red and sometimes brown [Fig.1]. But not as badly as in cities in the south of Poland. Usually, on the governmental air quality maps Bialystok has a green indicator. But even ordinary "observations" reveal a slightly different picture. Especially in peripheral districts of one family houses.

There are several reasons - historical, technical, economic, social and wrong location of government measurement station.

- During the Second World War 80% of the city center was destroyed. New buildings are connected to the heating network of the city. Thermal power plants, located in the periphery, have high chimneys, so "high emission" of exhaust fumes due to the effective filtration required by law is limited and usually blown out into suburban areas.

- Districts around the city center that survived WWII were inhabited usually by poor residents. Their homes were made in a very economical way with low insulation and tightness of the walls, roofs and windows. Currently, many of them are almost one hundred years old and have not been renovated. The traditional heat sources of these houses are ovens and furnaces that use solid fuels. Their characteristic feature is a bad combustion process and heavy smoking during the ignition.

- The economic situation of some owners is bad, many of them are elderly. They cannot afford to improve technical condition of their houses, good quality fuel, sometimes any, so they burn waste. We define this as "energy poverty". Only municipal help can solve this problem.

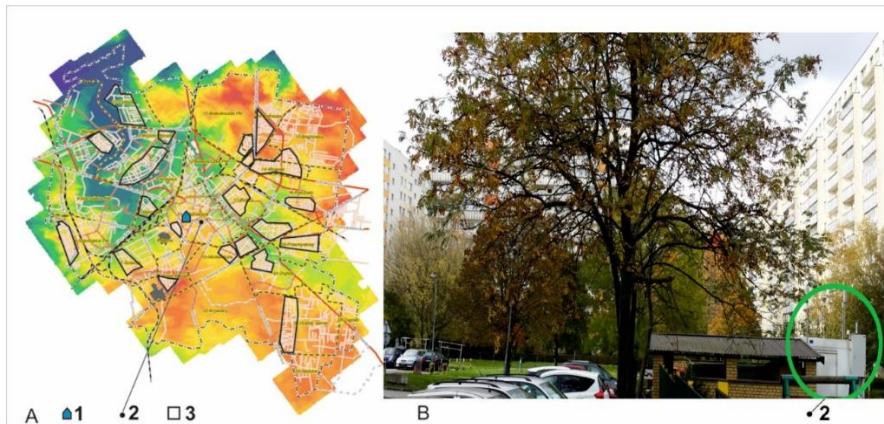
- Poorly conceived economy and avarice forcing to not wasting anything that burnt can heat the house, as well as saving on the costs of waste disposal by burning. One can see the smoke in districts inhabited by wealthy owners [Fig.2].



*Fig.2 Morning heating in one family houses district - S-E part of Bialystok, A. Turecki*

- The main municipal air quality measurement station is located in the middle of downtown Bialystok [1] where buildings are connected to the heating network. What's worse, it was placed in the middle of large complex of 11-story buildings [Fig.3]. They form a high ring that stops the flow of air from neighboring areas and major urban roads, so the air quality in this place is usually better than in other parts of the city.

That was the reason for installing the monitoring system of PM10 and PM2.5 particulate matter, in the "Laboratory of Energy-efficient Architecture and Renewable Energies" at the Faculty of Architecture of Białystok University of Technology [2].



**Fig.3** A – Hypsometry of Białystok: 1- LEARE, 2- CIEP main station of air quality measurement, 3 – districts not connected to city heating net. B – photo of central district where main measurement station is located: 2- main station, A. Turecki

## MONITORING SYSTEM

The basis of the system are two SDS011 dust meters analyzing the scattering of laser light on dust particles (Mie Theory). They are managed by a PIC microcontroller, with an Ethernet interface for transmission over the Internet. Current data is visible on two displays. SDS011 enables measurement of particles in the range of 0-999  $\mu\text{g}/\text{m}^3$ . The meter has a built-in fan that forces the flow of sampled air through the laser sensor chamber. The system enables continuous readings and recording of data that it sends to the server. This allows you to generate charts and transmit current and historical data. At outdoor air humidity above 65% dust meter readings are overstated by fog droplets. Preheating the tested air can eliminate that problem, but LEARE monitoring hasn't such equipment yet.

The study of parallel measurements of dust meters with and without air preheating was presented by J. Bartyzel "at average air humidity of 65%, the differences of readings between the dustmeters with and without preheating differ by 10-15%"[3]. Such a difference can be considered as acceptable at the values several times higher than recommended in the EU.

The meter analyzes the outside air stream in the ventilation unit with the intake at height 4m above the ground. Ventilation works in 24/7 mode. Measurements were taken and recorded every 30 seconds, what allows testing the short-term changes of dust.

However this meter isn't "golden standard", but in periods of good, average and poor air quality, without winds, it repeatedly shows similar values of PM2.5 and

PM10 as the CIEP main measurement station. Due to the insufficient number of measurement stations, low-cost meters may be useful in assessing the distribution of air pollution in cities. Measurements of air dustiness around the burning waste warehouse in Warsaw were possible thanks to the dense network of such meters [4]. In December 2016, the National Advisory Council for Environmental Policy and Technology provided US-EPA recommendations for how to maximize the benefits of citizen science and ... integrate it into the full range of EPA's work [5].

The place where the laboratory was built has high variability directions of wind at low speeds, with annually average lower than 3.5 m/s. In addition to measurements of air pollution, other data provided by weather station Davis, located on the roof of the laboratory, were used. It can monitor and record many parameters: external temperature, humidity, wind speed and direction, solar radiation, UV index, atmospheric pressure, precipitation. Five of them were used: external temperature, humidity, wind speed, wind direction and solar radiation.



**Fig.4** Laboratory of Energy-efficient Architecture and Renewable Energies at the Faculty of Architecture of Bialystok University of Technology: A- photos; B- chart of daily PM2.5 and PM10 values: 1- probably cooking, 2- heating: morning and evening; C- interface of the dust monitoring system: 2- evening heating A.Turecki

## MEASUREMENTS

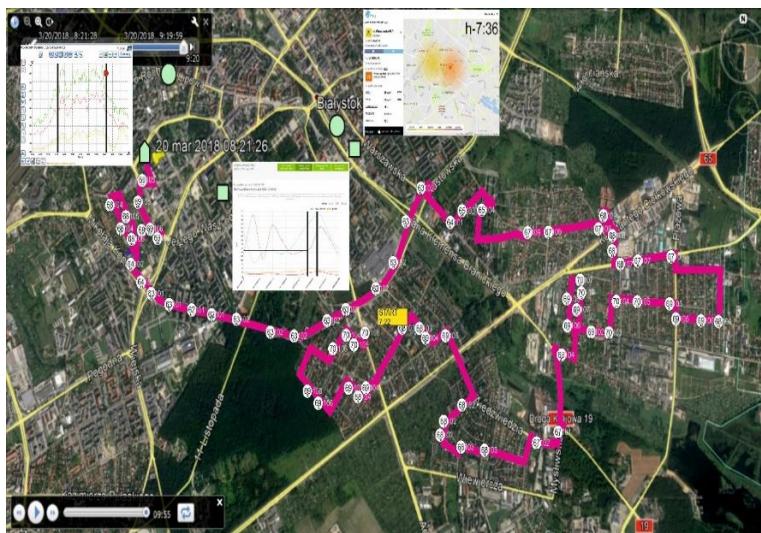
The laboratory building is located on the border of two different types of districts. The city center connected to the heating network of Bialystok on the east side. From the west and south, the laboratory building parcel is adjacent to the district of old, two-story buildings, usually heated by burning poor quality fuel. They are both residential and commercial, so the behavior of their users and the duration of their operation vary. In residential buildings that are permanently inhabited, the use of cooking stoves and hearths is used for heating and preparing meals. Small houses have single central oven, integrating heating and cooking.

Heating usually takes place twice a day - in the morning and more intensively in the evening. Cooking three times - also in the afternoon. Commercial buildings, used during the day, are intensively heated once in the morning - at night they cool down.

The effect of heating these buildings on air dust around the laboratory building was tested. The dependence was visible during the windless days or when the winds were blowing from their side. Then the dust levels of PM2.5 and PM10 were significantly increased. At that time photographs were taken to see the smoke from the chimneys. Long exposure times - from 10-30s allowed showing it also at night. The weather station Davis indicated outdoor air humidity above 65%.

When the wind blew from the side of neighboring buildings the system recorded "thermal activity" of their inhabitants. It showed not only heating in the early morning and evening hours, but also short-term lower increases during the day - probably associated with cooking.

At the end of 2017, only two CIEP stations and the LEARE measurement point were operating in Bialystok. Only three measuring points is less than one on 33km<sup>2</sup> area, and all located in the city center. To test air pollution in the rest of the city, a portable dust meter was additionally used [Fig.5].



**Fig.5** Graph of mobile measurement in S-E part of Bialystok. The value of PM<sub>2,5</sub>= ~62-70 $\mu\text{g}/\text{m}^3$ , PM<sub>10</sub>= ~101-106 $\mu\text{g}/\text{m}^3$ ; (20.03.2018, h. 7:22-8:21; dust meter SDS011 [without air preheating], mounted on the car, speed 30-40km/h, recorded every 30s; GPS positioning; GoogleEarth map; charts from CIEP, AIRLY and LEARE), A. Turecki

At the end of April 2018 LEARE began the study of the vertical smog distribution using a drone to lift the dustmeter into the air at a height of 100m. The photos taken in winter 2017, from a height of about 30m showed a smog layer approximately 50m [Fig.6]. These measurements will be continued in the next winter.



**Fig.6** Smog visible on the long exposure photo (15s), N-E part of Bialystok, (31.03.2017 h.22:05), A. Turecki

## CONCLUSION

The LEARE monitoring system operate steadily for many months. During the periods of good, average and poor air quality, without winds, despite the use of low-cost meter it repeatedly shows similar values of PM<sub>2.5</sub> and PM<sub>10</sub> as the CIEP main measurement station. Local maximum concentrations of PM<sub>2.5</sub> and PM<sub>10</sub> often far exceeded the maximum values shown by the city station. The 30 second measurement period allows to show even short-term high particles concentrations, invisible in one and eight hours averages.

LEARE location on the border of district of old, two-story buildings, heated individually allows to study the impact of such districts on the level of air pollution. They determine the formation of smog in Bialystok - the city center is heated by a central network powered by municipal heat plants which have good filtration and thanks to their high chimneys, emissions are transferred to rural areas. In single family homes districts, there are characteristic hours of dust growth: 6-8, 13-15, 17-19 and 21-23. They are poorly presented in data measured by station located in the city centre.

Not only “energy poverty” and poor technical condition of old houses is the cause of smog formation in Bialystok - one can see the smoke in districts inhabited by wealthy owners.

Due to the insufficient number of measurement stations, low-cost meters may be useful in assessing the distribution of air pollution in cities. Such data, although not fully precise, allow to create maps of smog distributions in the city, helpful in future activities improving air quality, directing resources where they will be most effective

In cities with central districts connected to heating net and neighbourhoods of homes heated individually with bed solid fuel, measurements should be made by a many stations - central and peripheral in accordance with local wind directions.

Measurements carried out behind the ventilation unit with recuperation show improvement in air purity due to the efficient operation of its filters. This improves the health conditions in the buildings and reduces the risk of many diseases.

## ACKNOWLEDGEMENTS

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## THE MOTIF OF A DRESSED UP TREE IN CONTEMPORARY EUROPEAN LANDSCAPE

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### **ABSTRACT**

Since the Industrial Revolution, people's contact with the natural environment has increasingly been displaced from the sphere of everyday existential experiences, and the superficial perception of nature in terms of weekend recreation or holiday trips has become the cause of the phenomenon called plant blindness. This means an almost complete lack of empathy and understanding of the needs of plants as living organisms and deepens the illusory belief in the possibility of taking full control of the external environment. The reconstruction of the lost ties with nature is currently not possible on the former principles, which partly explains the various attempts to personify trees or give them symbolic meanings through art. The text analyses various causes and forms of decorating trees, ranging from rag trees in Irelands and British Isles, svyashchennye roshchi in the Maria El Republic, trees decorated with small chapels, maypoles or Christmas trees to artistically knitted or wrapped trees. They coexist in the landscapes of modern Europe, capturing the attention of passers-by and provoking them to reflection. The author presents her own didactic experiences related to awakening empathy towards plants through the "Me – the Tree" exercise and reflects on other ways of achieving similar goals.

**Keywords:** *rag trees, svyashchennye roshchi, Christmas trees, knitted trees, wrapped trees*

### **INTRODUCTION**

Trees belong to the longest living and at the same time the largest organisms on the Earth. Scientific reports estimate the age of the still living bristlecone pine (*Pinus longaeva* D.K. Bailey) in the White Mountains (California) to be over 4 600 years. There have also been found representatives of more than one hundred species of trees that have been living for over 1,000 years [1]. However, the longest lifespan is that of species with the ability to vegetative cloning. In this sense, the Old Tjikko, one of the Norway Spruces (*Picea abies*) growing in the Fulufjället Mountain (Sweden) has been rebirthing in a continuous manner for 9 560 years [2]. In the past – because of the age, shape or particular location – such single specimens used to be the subjects of worship and protection. However, since the industrial revolution, trees have been increasingly removed from the sprawling development areas. Within the built environment they are allowed to grow under certain conditions, thus deepening human illusion of exercising total control over the space. Social research confirms the growing threat of so called plant blindness, which indicates a progressive loss of sensitivity and understanding for the needs of plants [3].

The lack of empathy and even aggression towards plants has its background in a contemporary culture, which is focused on quick ad hoc goals, gadgets or

curiosities and does not leave enough time for deep reflection. Therefore various forms of attracting human attention to the trees and bringing them to the fore acquire great importance. In this context the paper analyses semantic potential of clothing and decorating trees in the landscape of contemporary Europe.

## RAG TREES AND HOLY BUSHES

Rag trees, which are known in Scotland as "clootie" ones, belong to the relicts of sacred landscapes in Ireland and British Isles. In this case the change in the appearance of the tree has secondary character, due to tying on branches small votive offerings or scraps of clothing (rags) that touched the sick parts of body. Although this custom is associated with pilgrimages to the Christian patrons of holy wells, it derives from a much older tradition of the peoples that had left the traces of such developed religious culture as Stonehenge in England or Newgrange in Ireland. Symbolizing the power of life, the tree acted as an intermediary connecting the underground world with the heaven and carried human prayers to the divine beings. In the study of sacred trees of Ireland, Christine [4] defined them as "Trees of Sacred Knowledge" in contrast to "Trees of Assembly" (like Judgement Trees, Festival Trees, etc.) and "Trees of Otherworld Experiences" (as Fairy Trees or Gentle Bushes).

Small offerings were usually hanged on ashes (*Fraxinus excelsior*) or hawthorns (*Crataegus monogyna*) growing near the holy wells, which became sanctified and assimilated by the Christian tradition [4]. Pieces of clothing had been soaked in water from the well before they were tied to the branches. It was believed that their former physical contact with the sick person enabled transfer of the disease to the tree and healing a pilgrim outside the body. On the *patron saint's day* of the well, as a token of gratitude devotees used to place strings of beads, rosaries or other small offerings on the boughs or in cavities of the well's wall [5].



Image 1. a) Entrance to St. Brigid's Well between Liscannor and the Cliffs of Moher, b) St Patrick's raggedy bush at Bamford (on the road from Kilkenny to Kells), c) rag tree close to St. Brigid's Well; Ireland. Photo by the Author.

At the beginning of the 1980s, the number of ancient *skeoughs* (whitethorn bushes) growing in the vicinity of the holy wells in County Carlow (eg Old Leighlin) was estimated at approximately 60. Not all of them are decorated with

rags, especially due to the fact that this custom has been fading since the end of the nineteenth century. However, the blooming white-torn bushes are particularly beautiful around the 1st of May (the May Day), once the celebration of Gaelic-Celtic feast day of Beltane, which marked the beginning of the summer [5] and for this reason these species were usually chosen as the best intermediaries between the earth and sky. Among the examples worth mentioning are nearly 400 year old hawthorns on the Hill of Tara (Co. Meath), perhaps the most famous sacred site of Ireland, which was believed to be the gate into the netherworld – the realm of the dead. In the summer, the pilgrims go to Tobernalt Well (Co. Sligo), the place of Celtic festival Lughnasadh, which was once celebrated at the beginning of the harvest season and replaced in Christian times by Garland Sunday on the last Sunday of July.

Numerous references on this subject can be found in guidebooks, where the most frequently mentioned are trees in easily accessible locations, such as the rag tree near St. Brigid's Well between Liscannor and the Cliffs of Moher (Co Clare) (Image 1: a & c) or St Patrick's raggedy bush at Bamford (on the road from Kilkenny to Kells) (Image 1 b). It is estimated that in Ireland and Wales alone, more than 4200 holy wells were worshipped. Usually just one rag tree was chosen in a given place and they did not accompany each well. From the 18th century, there were reports about coin-trees, in which small coins and even pills or nails were stuck in the bark [6]. One of them is still growing in Ingleton, North Yorkshire. Although many ancient rag trees were knocked down by winds or died due to age, the custom of hanging votive offerings on the branches has remained to modern times. For this reason, attempts have recently been made to recreate lost or heavily damaged trees, as in the case of over 2000 year old Oak of Saint Meen near Lisieux (France), which has two younger successors in its vicinity.

The development of tourism contributed to the dissemination of knowledge about clothed trees, because – as a rule – unusual places are included on the sightseeing routes as signs of the region's identity. In recent years, tourists have been leaving on branches more and more random items, which is threatening the safety of the trees. Visitors have also begun to adorn trees growing near viewpoints, without any connection to the holy place. This raises previously unknown preservation problems as well as the need for systematic cleaning of branches to prevent damage to both plants and tourists, who fall victims to their own activities [7].

## **SVYASHCHENNYE ROSHCHI**

Less known places of leaving rags on branches can be found in the opposite part of Europe, in Russia, in the autonomous republic of Mari El, which stretches along the northern bank of the Volga River. There is still a living habit of praying and making offerings in holy groves (Russian: Svyashchennye roshchi) and the tied ribbons are used to mark the boundaries of the sacred zone. The first written messages on these manifestations of religiosity come from the nineteenth century, but the tradition itself seems much older and is still poorly recognized by science. It is known that the inhabitants of the contemporary republic began to settle in these areas in the 17th century, and the holy groves reflecting their family-tribal structure constitute an important element of the local sacral-ethnic space.

Svyashchennaya roshcha, also known as kusoto, stands out in the landscape with its circular shape and a relatively small surface which can be easily observed from the short distance, eg. from a given village. It is estimated that there are about 600 such places in the Mari El, although not in all the ancient rites are celebrated and not everywhere the clothed trees can be found. The forest temples are planted by the local communities and in contrast to the British-Irish tradition they are not perceived as holy due to their specific location, but because of their relationship with a particular family, a house, a village or the whole region [8]. In Mari El, peculiar veneration is enjoyed by oaks, patrons of men, lindens, considered to be intermediaries of women and birches, which are in a special way related to children. Sacred rituals and prayers are held in front of the sacred tree (*onapu*) by the ministers of the cult, who are called onyen, molla, or parchach (by the Udmurts). During the religious festivals people bring specially baked pancakes, but in the past they also sacrificed fowls or larger animals. At present, prayers are held only in several groves, but in all it is forbidden to collect mushrooms, blueberries or brushwood. In some areas one can still observe a habit of tying scarfs or pieces of cloth to trees or ropes stretched between them. This is the way of marking holy places for a given community, as well as memorial trees, like the oak of Emilian Pugachev at the Kazan route.

Holy groves and the rag trees can also be found in Buryatia (eg. near the hot springs in Arshan Village) and in Kazakhstan (eg. in the vicinity of Kolsai Lake).

## MAY TREES AND MAYPOLES

The ceremonies associated with the celebration of Beltane fire festival have survived in various forms throughout the area of the former Celtic culture. The still practiced tradition in Ireland is the adorning of May Trees or May Bushes on the May Day. Usually these are whitethorn trees (most often hawthorn) selected in the vicinity and decorated with ribbons to ensure the harvest and fulfillment of other wishes to those who ask. May Bushes in England are cut as a tree, shrub or branch and placed near the house or in the middle of the village, adorned with ribbons, painted egg shells and flowers. In Germany, in the region of Rhineland, the night before May Day young birches (German: *Maien*) or their branches decorated with colorful heart paperwork (*Maiherzen*) are laid in front of houses of maids as anonymous love confessions. Custom called in German *Mailehenbrauch* originated at least in the 17th century and its purpose was to facilitate the matching between pairs of young people from the neighbouring villages. The May trees have similar significance in some parts of the Czech Republic, as well as in Poland and Slovakia, especially in Silesia and Orava, where so called *moi* is put either near the chosen girl's house or in a public space as a sign of sympathy for girls from an entire village.

In other parts of Central Europe, people used to erect wooden poles instead of trees or bushes. They are called Maypoles (Germ: *Maibaum*) or Mary's trees (Germ: *Marienbaum*). In the spring they can still be found in some German states (North Rhine-Westphalia, Franken, Baden, Swabia, in parts of Saxony, Upper Lusatia, Baden-Württemberg, Bavaria Rhineland, Emsland, East Frisia), as well as in parts of the Czech Republic, Austria, Slovenia and Poland (*moik* in Silesia). These tall, 20-30 metre high constructions, are usually carved, painted and decorated with wreaths or garlands. The fastening ropes stretched around them create an openwork structure shimmering with colours of ribbons and flowers, which is visible from far

away. Beneath the wreath installed on the top one can find the plate or plates with rhymed dedications that are fixed to the Maypole. Depending on the region, they stand for a month or more, even several years.

Despite various prohibitions aimed at protecting forests, this tradition has been preserved in many communities and recently is being cultivated as a cultural heritage. In eastern Poland, there are still few traces of "walking with the Grove", which means visiting neighbours on the second day of the Easter with a foster tree.

## CHRISTMAS TREES

Christmastime certainly has become the most popular season of dressing trees in a contemporary world. The tradition itself dates back to the ancient Persia, where the winter solstice was celebrated as the birthday of Mithra – the god of sun. The night before the first longer day of the year people hanged various ornaments on evergreen cedar trees or cedar branches. Around the 1st century BC, mithraism spread throughout the area of the Roman Empire and later many of its elements were absorbed by Christianity. The winter solstice began to be associated with the theme of paradise restored to people thanks to the birth of the Son of God and his sacrifice. The paradise apple tree was a constant element of scenography in the medieval Christmas mysteries, depicting the history of humanity from the time of Adam and Eve to the birth of Jesus. The first mention of hanging apples on evergreen spruce or fir comes from Strasbourg. Like the announcement of a return to paradise, so decorated Christmas trees appeared at the end of the fifteenth century in churches in the Alsatian region and later in town halls, guildhouses and finally in private homes. Through the Hanseatic League this custom gradually spread along the Baltic shore and was then introduced in Russia by the decree of Peter the Great in 1699. The mass occurrence of this phenomenon in Europe and North America can be dated from the end of the 19th century [8].



*Image 2. The Christmas tree on the main pedestrian axis in Swieradow Zdroj, Poland, Photo by the Author.*

According to Gary A. Chastagner, at the turn of the millennium 33 to 36 million Christmas trees were annually cut down in the North America and approximately 50 to 60 million in Europe [9]. The most sought-after species include firs (*Abies alba*, *Abies procera* and others) and spruces (*Picea abies*, *Picea pungens* and others), but in warmer climates people also decorate the pine trees, cypresses and even cedars. It is worth mentioning that since the introduction of cedars to Great Britain in 1638, they have been sometimes used as kind of wish trees because of their majestic shape and exposed sites that they have usually occupied in the landscape. In Ford Maddox's tetralogy "Parade's End" (1924-1928), the cutting of "the Groby Tree" has a symbolic dimension for the novel and heralds the advent of new times devoid of attachment to the continuity, tradition and nature.

Nowadays, due to the environmental protection, one can notice the increasing use of "re-usable" trees – artificial or growing in the garden. In public and commercial spaces in many parts of the world Christmas trees appear already at the end of November as a background for the holiday shopping season. Richly illuminated tree-like constructions of heights from a few to a dozen or so meters can be found in the most recognizable places for a given city or a neighborhood. Although their symbolic meaning is far removed from the theological tradition of the paradise tree, they still remain a temporary but inseparable part of the winter landscape and the family holidays that accompany the welcome of the new year and new hopes.

## TREE SWEATERS AND STREET TREE ART

In a world threatened by global climate change the role of trees starts to be perceived as an important or even essential for the future of our planet, and the dying animistic beliefs are replaced by knowledge and emotions motivating contemporary societies to treat greenery in a special way. Street art tree is becoming one of the tools of this movement, which indirectly draws attention to the important role of trees in nature, and human life. Therefore trees are being personalized through clothing, referred to as "tree sweaters". However, it should be emphasized that the actions called yarn bombing, yarn storming, knitting attacks, guerilla knitting, kniffitti, urban knitting or graffiti knitting are not oriented only on trees but are aimed at general "warming" of the urban landscape. In many cases they also have their marketing dimension. Hundreds of anonymous people are involved in the short-term transformation of everyday surroundings into works of art. Stems and branches are decorated in tailor-made costumes in colorful stripes, patchworks or single-color lace knit or knit. Depending on the concept, the composition is enriched with pompoms, buttons or other decorations used in textile products.

The movement was born in the early 2000s in the United States but quickly came to Europe, among others thanks to Lauren O'Farrell known as Deadly Knitshade, who created the first London urban collective called Knit the City in 2009. In addition to spontaneous and often illegal manifestations of yarn bombing, especially in the initial period of the development of this movement, one can cite a number of official graffiti knitting associated with the names of artists such as Ute Lennartz-Lembeck, Anna Maria Nitthaech - author of "Lacetrees in Himmelpfort" (2013) and Agnieszka Ostrowska, who decorated trees in the Zielonka Forest (2013). Although yarn bombing is also referred to as grandma's grafitti, there are men, who engage themselves in this activity, such as Monsieur Térez who proudly

presented his tree anthropomorphisms during the 14th edition of Garden of Art organised in d'Ar Milin park (Chateaubourg 2016).

In this short presentation of artists, one can not forget about the spectacular activities of Yayoi Kusama, known for her eccentric "Ascension of Polkadots on the Trees".

The artist completed a few outdoor commissions in frequented places like Queen's Walk along the Thames, London (2009), Cours Mirabeau, a famous boulevard in Aix-en-Provence (2013), the garden of Moderna Museet in Stockholm (2016) or Esplanadi park in Helsinki (2016). In each of them, in the same way she wrapped the trunks in red and white polka dot fabric, bringing the energy of these colors into the city landscape. Nevertheless, the most intentional character have Yoko Ono's activities related to the realization of the Imagine Peace Tower – her memorial to John Lennon and their common campaign for peace. Since 2007, powerful pillars of light have appeared against the night sky above the island of Viðey (off the coast of Iceland) above the Wishing Well – the outdoor installation created by Yoko Ono with the support of the City of Reykjavik and the Reykjavik Art Museum. The artist has already placed there nearly a million wishes left by visitors on "Wish Trees" accompanying her exhibitions on all continents. In Europe, this custom was started by exhibitions in Alicante and Valencia (1997), after which "Wish Trees" appeared in Exeter (2002), Venice (2003 – permanent installation in the Peggy Guggenheim collection), Dublin (2012) and London (Serpentine Gallery 2012 ) [10]. The artist admits that the unexpected amount of anonymous notes that fit into the Imagine Peace concept prompted her to gather them in one place and save for posterity.

## CONCLUSIONS

The presented research shows that the habits of variously understood dressing of trees can be found almost all over Europe – from the west of Ireland to the eastern areas over the Volga. Some of them originate from a distant animistic tradition related to the perception of trees as potential human allies, others are created for the needs of modern tourism or art. In terms of mass tourism development it must be ensured that the decorative souvenirs are left rather on artificial trees or on special supporting structures. Experience shows that artificial Christmas trees and wish trees in public space are fully accepted by people. However, personalization of plants through non-invasive tree knitting forms can become the first step to awakening empathy for them (Table 1).

**Table 1.** *The meaning and the theme of fruit tree in the analysed urban landscapes from 1990 to 2015 (by the author).*

Meaning	Form	Occurrence
Affirmation of human unity with nature by maintaining tradition; a tourist curiosity	Rag trees, holy bushes, holy groves	places of pilgrimage, traditional places of worship
Expression of the tradition of the place and social ties	Maypoles	smaller cities, villages with long-lasting traditions

Expression of Christmas tradition, sign of the holiday shopping season	Christmas trees	Main public spaces especially near shopping centers
Expression of creative freedom, object of art	Knitted trees, lace trees	Ascension of Polkadots on the Trees, 2009, London
Symbol of peace and fulfilled dreams	Wish trees	Imagine Peace Tower, 2009, Viðey / Reykjavik, Island

"Me - the Tree" exercises conducted by the author in landscape architecture classes prove that students begin to design greenery in a different way if they identify themselves mentally with the plants they plan. They usually choose better locations and arrange the surroundings in ways that provide friendly vegetation conditions. Therefore, there is a chance that thanks to the mission of peace realized through art and education, the forgotten tradition of respecting the rights of all living beings can be included in the landscape of contemporary societies.

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# THE MOTIF OF A FRUIT TREE IN CONTEMPORARY EUROPEAN CITYSCAPE

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## ABSTRACT

The orchards occupy an important place in the history of culture, even though in the last century they began to disappear in the cities, where the majority of people resides. However, in the last two decades we are witnessing the return of fruit trees on the streets and squares of urban agglomerations in Europe, both on the wave of interest in "edible landscapes" and in response to the longing for naturalness. Analysis of the various contexts in which fruit trees are planted in parks and other public places becomes a reference plane for the concept of the Gardens of Life in Wroclaw. They are located in the centre of the revitalized district on the site of the Brothers Hospitallers of St. John of God monastery. The orchards combine the tradition of the place with the expectations of the local residents, as well with the needs of seniors and the hospice patients who are to live in the convent buildings. Due to the educational nature of the gardens, a pomological collection is to be created here. Presented fruit trees were selected as species representing all classes from the systematics of Adrian Diel (1756-1839) and Eduard Lucas (1816 - 1882). This division and naming has been widely used both in pomology and in colloquial language at the end of the 19th century, to which the garden conservation project refers.

**Keywords:** *fruit trees, traditional orchards, pomological collections, Eduard Lucas, Gardens of Life,*

## INTRODUCTION

The biblical paradise was full of fruit trees, among which the most prominent place was occupied by the Tree of Life and the Tree of Knowledge of Good and Evil. It is not without reason that these trees were placed at the very beginning of human history. Due to the nutritional and healing values of the fruits, they were worshiped and cherished. The Greeks believed that the first olive tree, so important to their economy and everyday life, was given to them by the goddess Athena. This tree gave origin to twelve other trees, which grew in the grove of Akademos near Athens, where Plato taught in the fourth century BCE and from where the oil awarded to the winners of the Panathenaic Games was collected.

For many centuries fruit trees were a sign of affluence, stability and prestige. The Arthurian myth depicted Avalon – the apple tree island on which golden apples grew and where Holy Grail was supposed to be hidden. It was believed that the juice drunk from the Grail cup makes man immortal [1]. In Celtic mythology the Apple land was associated with the afterlife. Fruit trees were planted next to the temples (Erechtheion in Athens), monasteries, suburban residences and also in cemeteries as a symbol of paradise and eternal happiness. In Eastern Sicily, the custom of

describing citrus orchards as paradisi has been preserved to our day, and in many regions the cutting of apple trees was considered a bad omen [2].

Domesticated varieties of fruit trees appeared in the cooler zone of central and northern Europe in the times of the Roman conquest, but the flowering of fruit-growing can be observed only from the 18th and even 19th century, when numerous nurseries and pomological associations began to emerge. Nowadays, every fruit tree that can be found in orchards, gardens or along country roads represents the heritage of the multigenerational cooperation of man and nature; each of them has its own story and a more or less known fruit grower, who bred a given species in the past. It is worth mentioning that according to data concerning the European Union in 2012, orchards of main fruit varieties (apple, pear, peach, apricot, lemon and small citrus fruit trees) covered an area of 1.29 million hectares, excluding private gardens and allotments, where they continue to enjoy considerable popularity [3]. In spite of the continuing process of urbanization in recent decades fruit trees have been introduced into urban landscapes, where they previously existed only as relics of the early development. Now they are appearing in a new role and often with a changed semantic connotation. This article presents the results of field and literature studies on the occurrence and symbolism of fruit trees in the European landscape arrangements since the 1990s.

## **GOLDEN APPLES IN THE HUSTLE AND BUSTLE OF GREAT CITIES**

The thesis that the most emblematic solutions usually arise on special occasions and in special places is undoubtedly confirmed by the Garden of Three Cultures by Miriam Silber Brodsky. The opening of the garden in Juan Carlos I Park became a manifesto of Madrid as the European Capital of Culture in 1992, indicating the source and interpreting the idea of unity in diversity [4]. The starting point for the historiosophical reflection of the author was the first book of Torah, included in the canon of sacred books both by Christians (Old Testament, Pentateuch) and Muslims (Tawrat), whose influences created the unique cultural mix of the Iberian Peninsula. In the centre of the garden there is a symbolic Eden situated on the top of the hill as a place where the history of the human species begins and ends. From there, the paths run to four parts of the world. The first is the common path of creation, while the other three lead to three cultural interpretations of the same theme of heavenly peace and harmony [5].

Each of the gardens was built on the same plan in the shape of a square but they are completely different as far as the space formation, selection of plants and prevailing atmosphere are concerned. Fruit trees occur only in two parts: Jewish and Muslim. The Orchard of Pomegranates inspired by "Song of Songs" creates a kind of a small oasis, reminiscent of an accidental stopping place on the way of the Jewish people to the Promised Land. Despite the name, this is where old olive trees reign in the almost desert environment as a symbol of longevity, peace and reconciliation. They are accompanied by pomegranate bushes, fig trees, almonds and myrtle edges creating a unique atmosphere of the place. The opposite of this ascetic image is the nearby "Garden of the Delights", where bitter orange trees (*Citrus aurantium*) and sweet orange (*Citrus sinensis*) were planted around the central pavilion among the cypress trees, roses and jasmine, which provokes

unambiguous associations with the civilization of Islam and its vision of Paradise embodied in the timeless gardens of Granada and Cordoba.

A similar selection of plants was used by Kamel Louafi in the Oriental Garden project in Berlin (2005), where apart from citrus trees, there are pomegranates, date palms, olives, figs and peaches. In the Aga Khan Award for Architecture, Louafi writes: "This 58 x 31 meter garden offers a window onto Muslim civilization in the multicultural city of Berlin. The layout adheres to the essential traditions of the Islamic garden; it is an earthly representation of paradise, entered through portals in an enclosing wall" [6].

It seems significant that these gardens that are icons of cultures include fruit trees – domesticated and refined by a man on his way to the terrestrial paradise. The bitter orange brought to Europe by the Arabs around the 10th century AD and the sweet one, which was introduced on the Iberian Peninsula in the 15th century, have a special emblematic meaning in this context. It is not a coincidence that at this time Western-European painters depicted the image of a small citron (*Citrus medica*) as the fruit of the knowledge of good and evil, which was later replaced by an apple. In the circles of the court culture of the Italian Renaissance citrus trees gained particular connotations. Citing sources from that period, Cristina Mazzoni recalls: „This identification with the fruit of the Hesperides gave oranges their sacred status as the forbidden fruits of Hera's garden, protected by three nymphs and by a sleepless, hundred-headed dragon” [7].

The collection of citrus trees, created by the VAM10 team at the edge of the Botanical Garden in Seville in 1998, refers to this symbolism and to the tradition of growing orange trees "so bright during the 15th and 16th century and largely unknown today". In the proposed approach: "The Garden of the Hesperides transmits and reintroduces this culture to our botanical and aesthetic tradition, through a contemporary constructive language, in order to transform it into feelings to the visitor, last receptors of the work, so that it becomes part of their urban heritage" [8]. This small hortus conclusus creates an oasis of peace and reflection in the middle of the city, combining a regular layout of 50 varieties of citrus trees with the story of the last work of Hercules (sculpture by Miklos Palfy), who by stealing golden apples from the guarding nymphs left them plunged into shame and despair as "crying" elm, willow and poplar.

However, symbolic images of gardens may not always take the form of such separated windows onto culture. Tomasz & Róża Myczkowski used apple trees to create a vestibule of paradise on the outskirts of the Cathedral Island (Polish: Ostrów Tumski), in the popular public space in Wrocław. The basic source of meanings is the architecture of the nearby churches, which form the framework of the sacred space but permeated by the sphere of profanum in the area of Zienkiewicz Boulevard. According to the North European interpretation of the paradise tree, apple trees appear there like the symbolic entrance totems on the background of the lawn maze. In reference to the same tradition, the apple or crab trees are planted as the landmarks of particular fields or alleys in many cemeteries in Germany, Scandinavia and Great Britain (eg. Kviberg Cemetery in Gothenburg, Sweden).

## SAKURA ORCHARDS – THE SIGNS OF FRIENDSHIP

The windows of contemporary European landscapes are opened not only to their own past but also to the diversity and richness of other cultures, especially Oriental ones, which for a long time have been of interest to researchers, artists and the public. This is manifested by different types of “gardens of the world” such as the Marzahn park in Berlin or the Oriental Gardens in Bad Langesalza in Turingia and many others. Recently, sakura (*Prunus serrulata*), the ornamental cherry-trees, have been growing in popularity and slowly taking over the significant public spaces in Europe. The majority of their varieties do not produce fruit, except Seiyomizakura, but in urban conditions this can be considered as an advantage. Their blooming canopies are associated in Japan with fleeting clouds, beauty, mortality and so called *mono no aware* that can be translated as "an empathy toward things", or "a sensitivity to ephemera". In a deeper sense they symbolize the volatility of life. In the last decades tradition of hanani (English: flower viewing) linked with sakura in the Heian Period (794–1185) has become part of the global culture of big cities.

The real "invasion" of this species into Europe began thanks to the Sakura Campaign in 1990-2004, when nine thousand trees were planted around Berlin and Brandenburg. Funds for this purpose came from Japanese donors who responded to the initiative of the television network Asahi TV to celebrate the fact of the reunification of Germany. The parks in Steglitz-Zehlendorf / Teltow (1100 trees), Lichtenberg (1400 trees), Treptow-Köpenick, Berlin and many other places are now flourishing along the non-existing border, thus marking the friendship route beyond divisions. Seven hundred and fifty trees were planted with similar intentions on the island between the German and Polish parts of Frankfurt an der Oder to commemorate the 750th anniversary of the founding of the city [9].

Amsterdam was another important place in which sakura was introduced. The group of cherries that accompanies the elliptical exhibition hall of the Vincent Van Gogh Museum in Amsterdam (by Kisho Kurokawa, 1999) can be interpreted as a trademark of the building designer or as a reference to the period of fascination with Japan in the work of the great painter. Against the background of the vast lawns of the Museum Square, cherries create a semantic accent demonstrating the possibility of conducting intercultural dialogue through art. This dialogue takes place also in other spaces. In the springtime thousands of people visit Cherry Blossom Park located at the edge of Amsterdamse Bos (English: Amsterdam Forest), where local hanani festivals are organised. The orchard was established on the eve of the new millennium as a gift of Japan Women's Club (JWC) from Amstelveen, the largest Japanese diaspora in Europe. Each of the 400 trees has a female name: Japanese or Dutch, which indicates the attempt to grow roots on the new continent and at the same time the longing for the landscape of the childhood and the desire to express one's cultural identity through the personalization of trees. In response to the growing fascination with the ephemeral beauty of these trees another collection of sakura was planted a few years later closer to the city center in Westerpark.

Amsterdam is not the only place where blooming cherries appear on the map of Europe as ambassadors of Japanese culture. Hanani festivals are also held in Copenhagen (Langelinie Park) and in Wroclaw (Park Szczytnicki). One can find

online numerous routes to visit the European sakura collections that lead through Paris, London, Madrid, Prague, Rome or Stockholm. Trees are most often planted in parks (Parco Lago Dell EUR, Rome; King's Tree Garden, Stockholm), botanical gardens (Kew Gardens, London, Botanical Garden of Essen, Essen) or alongside the busy streets or the other public spaces (Champ de Mars, Paris; Heerstrasse, Bonn; Bispebjerg Cemetery, Copenhagen).

The former symbolism of an olive branch has also been adopted by the "peace trees" planted as part of the InterSilva model project around Obiliq (near Pristina) in Kosovo, which is still a territory with an unstable social and political situation. The project has been implemented since 2009, which marked a period of ten years from the end of an armed conflict between the Serbs and Albanians and a year from the announcement of the state's autonomy. Within two years, nearly 10,000 trees were planted in the most deforested area, of which 70% are fruit trees, including 15 orchards supporting the development of small-scale fruit production. Although the aim of the action was to create new jobs and improve the economic conditions of the population, the slogan "peace tree" indicates an attempt to heal the wounds inflicted on both people and the environment.

### **FRUIT TREE AS A BRAND**

In other conditions, a fruit tree can be used as a symbol of a fruitful policy of the company or the economy of a given country. A bitten apple – like in the case of the fruit of the knowledge of good and evil – being a trademark of the Apple corporation seems a perfect example in this regard. A similar code of association was used by Piotr Musiałowski and the team of 2pm architects in the design of the Polish exhibition pavilion at Expo Milan 2015 (Image 1).



*Image 1. Polish pavilion at Expo Milan 2015: a) The entrance zone, b-c) the "Magic Garden". Milan, Italy. Photo by the Author.*

In reference to the theme "Feeding The Planet: Energy for Life" it seemed a good idea to present Poland as one of the world's largest producers of apples (after

China and the United States). The multiplied form of the fruit crate was used to build the walls of a simple pavilion, to which the only path led through the "Magic Garden" on the roof [10]. This hortus conclusus hid the labyrinth / orchard of the apple tree, full of atmospheric sculptures by Igor Mitoraj, the sounds of music and the smell of herbs. As Musialowski explained in one of the press interviews, the apple vegetation cycle perfectly corresponded with the duration of the exhibition, presenting the beauty of these trees from the flowering phase to the autumn fruit harvesting. The mirrored walls created the illusion of infinite space under the blue sky, which united the fate of people and plants, where the experts of Polish culture surely found a reference to the friendly, though not devoid of intriguing accents, atmosphere of "The Strange Garden" by Józef Mehoffer from 1903. This portrait of a family surrounded by apple trees, flower garlands and amazing insects has long inspired many reinterpretations as poetic and ambiguous as the contemporary one by 2pm architects.

### **COMMUNITY ORCHARDS AND POMOLOGICAL COLLECTIONS**

Orchards are beginning to return to cities not only as the motives of scenographic settings of the exhibitions. In the summer of 2013, the architectural practice What If: Projects organized the "Adopt an Orchard" campaign as part of the Festival of Neighbourhood. Fruit trees planted in large galvanized bins on wheels were exposed for public view on Mandela Way alongside the London's Southbank Centre. This temporary bucolic installation called Octavia's Orchard in the honor of Octavia Hill, the National Trust founder, was to encourage applications for the adoption of trees by four inner city housing estates. The National Trust has selected its own partner centers for new owners, thus offering substantive support of experienced gardeners in the first stage of growing trees. Similarly outside London the mini orchards are becoming the places of meetings and ecological education, bringing people joy from the contact with the rural landscape substitutes.

The pomological collections seem to have a similar charm. They are usually situated within the areas of the botanical gardens, like in Warsaw (Poland) or in Kaunas (Lithuania). Though their primary purpose is scientific, nevertheless they enjoy increased popularity during the blooming period. The so called Gardens of Life of the Brothers Hospitallers are planned as a particular place in the centre of Wroclaw, where the pomological collection is to combine the educational values with the relaxed atmosphere of the community orchard. The trees selected for planting provide a full overview of species representative of all apple, pear and sweet cherry classes from the Diel-Lucas taxonomy, which was established in the second half of the 19th century.



*Image 2. Gardens of Life of the Brothers Hospitallers: a) general view, b) the first planted crab trees. Wroclaw, Poland. Design and photo by the author. Drawing by Natalia Bando.*

Picking-up fruit in non-urban areas is also growing in popularity, as the work is combined with various forms of Harvest Shows. In areas such as Glastonbury (Somerset), they turn into a kind of a spiritual journey. Like Gotland, the Isle of Man and Mont Saint-Michel this land belongs to the regions traditionally associated with the Celtic otherworld – the land of apples, where the Holy Grail was hidden on the edge of the Avalon Orchard, near King Arthur's burial place. In Glastonbury the apple harvest turns into a kind of a local festival attracting a lot of people from other areas of the UK. However, examples like Berlin Orchards prove that the possibility of self-harvesting and spending time in a family turns out to be a sufficient attraction to the residents of the contemporary cities.

## CONCLUSION

Due to the limited scope of the text some of the remarkable examples have certainly been omitted. However, it can be noticed that fruit trees have not disappeared from the realm of contemporary cities. Although they generally lose their productive function because of the polluted environment, they are sought for completely new social and semantic reasons (Table 1).

**Table 1.** The meaning and the theme of fruit tree in the analysed urban landscapes from 1990 to 2015 (by the author).

Meaning	Form	Occurrence
Sacred tree, an icon/sign of religious and cultural tradition, entrance totem to the sacred sites, protective trees next to graves;	Places of remembrance and spiritual transformation, heritage gardens; Public spaces adjacent to the sacred sites or „gardens of knowledge” like botanical gardens; Cemeteries;	“Three Cultures Garden” 1992, Madrid, Spain; Garden of Hesperides, 1998, Valencia, Spain; Oriental Garden, 2005, Berlin, Germany; Zienkiewicza Embankment, 2016, Wroclaw, Poland; Follaton Cemetery Community Orchard, 2007-2014 Totnes, Cornwall UK.
An ambassador of culture, icon of culture, a sign of friendship;	„Gardens of the World”, parts of the parks and public spaces connected intentionally with a particular culture, places of peace and friendship;	The Marzahn park, 2003, Berlin, Germany; Szczecinicki park, 2000, Wroclaw, Poland; Cherry Blossom Park, 2000, Amsterdam, the Netherlands; Garden of Europe, 2003, Frankfurt on the Oder / Slubice, the German-Polish border; Kosovo Peace Tree (KPT) Project (2009-2011), Kosovo.
The branding sign of fruitful economy;	Trade fairs and large exhibitions;	The Magical Garden, EXPO 2015, Milan, Italy.
The sign of tradition and genius loci;	Pomological collections, community gardens;	Gardens of Life of the Brothers Hospitallers, 2017, Wroclaw, Poland.

The return of fruit trees to the contemporary cities is associated with the preservation of the rural cultural relics, with attempts to revive so called "edible landscapes", as well as with the timeless longing for the lost paradise garden.

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# VOLUMETRIC METHODOLOGY FOR THE DETERMINATION OF CO<sub>2</sub> EMISSIONS AND ENERGY REQUIREMENTS FOR THE PRODUCTION OF PRODUCTS AT THE EARLY STAGE OF PRODUCT DESIGN

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## ABSTRACT

This article focuses on determining the emissions of kg CO<sub>2</sub> eq. and energy requirements for the production of electric hand tools during the early product design phase. While choosing the material in the designing process, the designer does not consider the environmental effect of the materials used, nor their responsibility for the consequent negative impact on the environment. By choosing and shaping materials, the industrial designer determines the nature and intensity of environmental pollution caused by the designed products. Ecodesign requirements are enshrined in the Kyoto/Paris Protocol on EU Directives 2009/125/EC, 2006/121/EC and ISO 14006 and ISO 14040. Important methods of determining pollution of not only kg CO<sub>2</sub> eq. is the use of Life Cycle Assessment (LCA) tools and the Oil Point Method (OPM) methodology. LCA-based tools provide a great amount of data about the birth, operation and recycling of individual materials, but also about their dependent technological processes. Nowadays not only the meaningful handling of raw materials is required but also their re-inclusion into raw materials for their further use. The proposed methodology uses openLCA software and OPM methodology to determine and predict energy savings for the production of products as well as emissions of kg CO<sub>2</sub> eq. according to the materials used, the volume proportions and the nature of the product, all that during the designing process. Environmental pollution - more accurately the amount of kg released CO<sub>2</sub> eq. generated within the life cycle of a product depends on the volume and nature of the product, based on the principle of maintaining the functionality and proportionality of the product's internal configuration. The new methodology would provide an effective ecodesign tool without the necessity of knowledge of complex mechanisms and very costly LCA programs in industrial design.

**Keywords:** *ecodesign, volumetric methodology, design, energy requirements, CO<sub>2</sub> emissions*

## INTRODUCTION

Today, there is a growing demand for reducing the negative environmental impacts of products and services in order to maintain sustainable management of minerals and energy sources. The society strives to reduce negative global environmental impacts, particularly through climate agreements, through the Kyoto Protocol and the newly ratified Paris Protocol, which ensures that global warming does not exceed 2° C by 2100 [1]. These transnational agreements are further implemented in international standards such as the set of ISO 14000 and national contracts and directives such as 2009/125/EC, 2002/95/EC, 2002/96/EC,

2006/121/EC, 2012/27/EU. The most important standard for assessing the entire life cycle of products and services is ISO 14044, which is also able to assess individual phases of the life cycle [2].

The knowledge of the industrial designer is focused on aesthetics, ergonomics and art, and therefore he does not have a high level of awareness of ecodesign and its tools. In the case of working with ecodesign tools, an industrial designer requires that ecodesign tools are simple to work with even without a deep knowledge of LCA (time-consuming training and costly software) [3], [4].

The tools themselves provide a different quality of output according to the input data themselves, and they can have a qualitative or quantitative basic character. Qualitative tools (SpiderWeb, 10 Rules, Checklists) are used at an early stage of design and are unable to provide detailed and accurate values. In the case of quantitative tools (MET Matrix, MECO Matrix, OPM), tools are based on LCA and provide the best output that can be further processed numerically [5]. The LCA-based OPM tool enables detailed analysis throughout the life cycle of the product, or in its individual parts [6], [7]. Life cycle assessment can be performed using LCA analysis software, and SimaPro [8] is the most suitable software in terms of speed of assessment. OpenLCA is freely disseminated professional software for processing environmental analyzes, which is capable of working with the GaBi database.

## METHODS

Solving a detailed methodical procedure for determination of CO<sub>2</sub> emissions was a part of the dissertation. An analysis of the most suitable tools for determining the environmental impacts of an electric hand tool has been worked out. The article "Summary of Ecodesign Tools for Industrial Designers" (Reference 9) summarizes the suitable tools and describes the issue. As the article states, the most appropriate tool is the OPM methodology and the most comprehensive results are provided by the LCA analysis using the SimaPro software [8], [9]. The OPM methodology has been confirmed to be an adequate tool for determining the energy requirements for processes within the life cycle of the product [7]. Data processing of the determination of CO<sub>2</sub> emissions of kg eq. using the openLCA (CML baseline methodology) was the most demanding. Because of the complexity of using the openLCA tool, it is more appropriate to use national energy mixes to determine CO<sub>2</sub> emissions. equiv. Information on current emissions kg CO<sub>2</sub> eq./kWh was drawn from the Electricitymap and the International Energy Agency. The Excel spreadsheet was used for processing.

## METHODOLOGY

The procedure includes the chronologically arranged phases for determining the emissions of kg CO<sub>2</sub> eq. and energy requirements for the production of one type of product (Fig. 1):

- Categorization of data - classifications of products (eg angular grinders, straight saws, circular saws, ...)
- Product class selection – detailed internal product composition, LCI analysis and volume proportions determined using a 3D scanner or camera (eg for angular grinders)

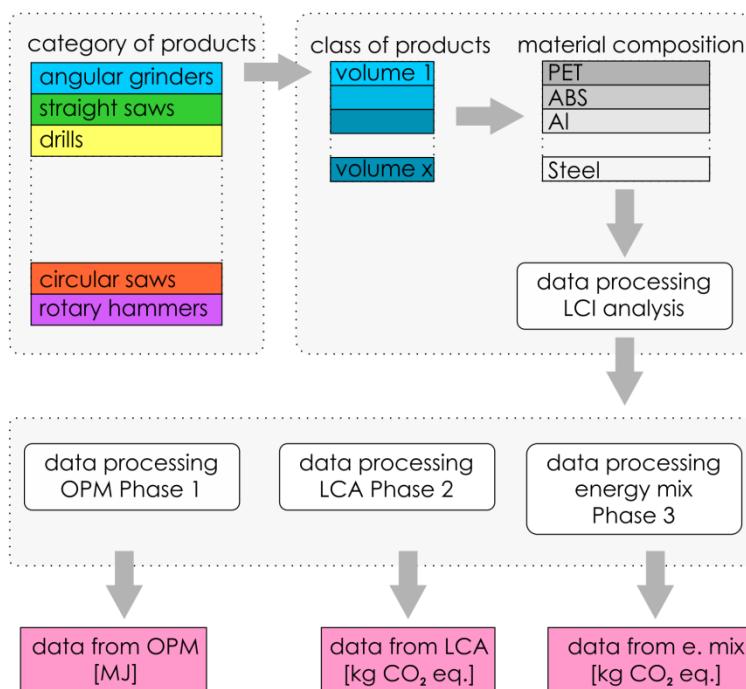
- Phase 1 - the energy requirements for production and recycling, as well as the energy requirements for the whole life cycle of the selected product for the given material composition and volume proportions (from raw materials to recycling, landfilling and incineration) were determined using the OPM instrument

- Phase 2 - using the openLCA software, the pollution value of kg CO<sub>2</sub> eq. of the selected product by given material composition and volume proportions (excluding recycling) were determined

- Phase 3 - the emission factors of individual energy mixes [10] the pollution values of kg CO<sub>2</sub> eq. of the selected product on given material composition and volume proportions (for recycling, landfilling or incineration) were defined

- result - values from OPM and LCA methodology (Phase 1 and Phase 2) kg CO<sub>2</sub> eq. and the total energy expenditure for the entire life cycle of the product will vary by ± 25%.

- the methodology was applied to design of students' products at BUT FME, IMID



*Fig. 1 Scheme of methodical procedure*

## RESULTS

The results and the methodology of the newly proposed methodology were divided into themes according to the established methodological procedure. The main result is the application of the methodology for design proposals (the designs are without internal components and functional units).

## Categorization of products

A set of products to be analyzed (Tab. 1).

**Tab. 1** Table of categorized products

Name	Product type
Power tools	• Multifunctional Tools, Couplings, Grinders, Mixers, Spray Guns, Milling Machines, Measuring Technology, Drills, Planers, Scissors, Cutters, Paint Rollers, Hot Air Guns, Edgebanders, Impact wrenches, Screwdrivers

For initial analysis of emissions of kg CO<sub>2</sub> eq. and the energy requirements for the production of products in their early stages, three specimens of angular grinders were used. These hand-held electric tools are further broken down into (115, 125, 150 and 230) mm (Fig. 2) according to the size of the grinding/cut-off disc.



**Fig. 2** Angular grinders analyzed 115/125/230 mm

The input parameters of the user phase were determined for all products under their 3h/week power consumption over a 52-week period of 3 years (Tab. 2). The range was determined according to the OPM methodology [6], [7]. After this time, the product was at the final stage of life (EoL) with the possibility of maximum recycling, landfill disposal or disposal in an incinerator. It is not considered to wear abrasive or cut-off discs.

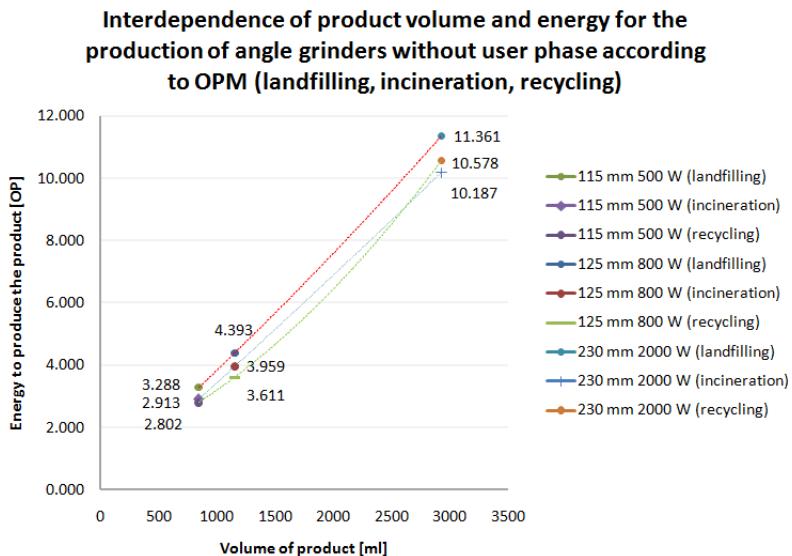
**Tab. 2** Input data of angular grinders

Grinder disc diameter	Grinder name and model	Product volume [ml]	Motor power input 230 V [W]	Energy consumption within the user phase [kWh]
115 mm	Einhell BWS 115/3	843	500	1170
125 mm	Narex BU-13	1151	800	1872
230 mm	Einhell WS-230-4	2930	2000	4680

## OPM METHODOLOGY

The processing of the analysis was solved through the OPM methodology, which is based on the LCA methodology (based on ISO 14044) [2], [6]. The individual parameters (energy requirements for materials, production, transport, use

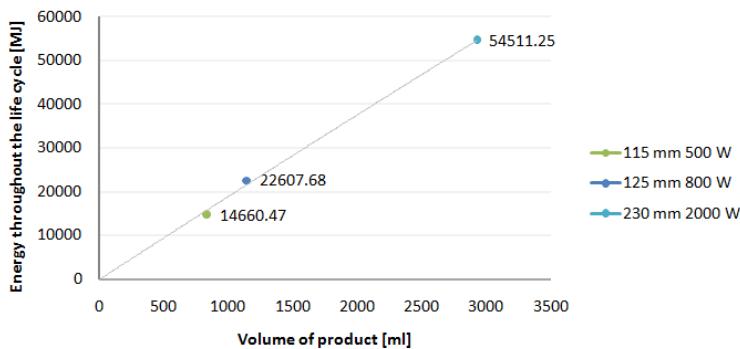
and end of life cycle) are defined in the OPM method [6], [7]. The link between the volume of the product and the energy for its production with the consequent possibility of recycling, landfilling or incineration of waste in incinerators is evident from the graph see (Fig. 3). Three model types of angular grinders (Fig. 2) were examined, which were subjected to material and structural analysis in three ways (landfilling, combustion and maximum recycling). The existing solution has been re-designed to substitute existing materials on the product for recycled materials (the lower curve on the graph). According to the primary consideration, the increased volume of the product and the use of recycled materials compared to the traditional solution result in increased energy savings for production and recycling (115 mm Δ 0.486 MJ angular grinder, 125 mm Δ 0.782 MJ and 230 mm Δ 0.783 MJ angular grinder).



**Fig. 3** Volume and energy dependence graph for product production according to OPM for 115/125/230 mm grinding machines (landfilling, incineration, recycling)

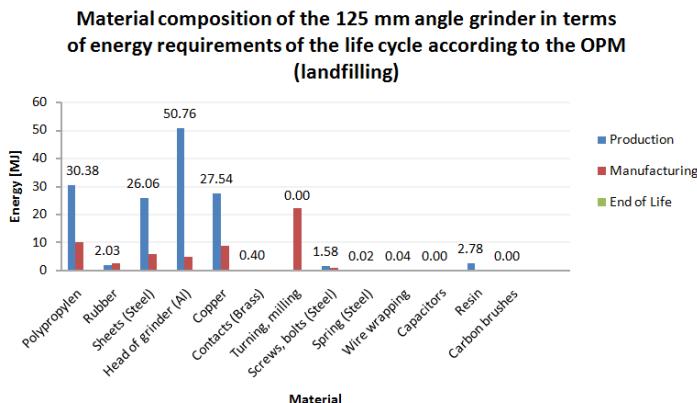
From the graph, see (Fig. 4), it is clear that in the life cycle, the largest amount of energy is consumed in products with a high user phase - the products with electromotors. The graph also shows an almost linear relationship between product volume (represented by a selected set of angular grinders) and energy requirements throughout their lifecycle, including possible recycling. The volume dependence is also supported by the power difference of the 2000 W (230 mm) angle grinder and the other 500 W and 800 W angular grinders. Compared to the graph (Fig. 4), the operational energy requirements of the products are many times higher.

**Interdependence of product volume and energy for OPM production throughout the life cycle of angular grinders (landfilling)**



**Fig. 4** Product and energy-specific graphs for product life and energy per life cycle according to OPM for 115/125/230 mm sanders (landfilling)

In order to process the environmental impacts, a detailed inventory analysis of the LCI was carried out, which required a detailed analysis of the materials used in the product life cycle. Fig. 5 to 7 show a material analysis of the angular grinder for a 125 mm disc size for the final life stage, such as landfilling, incineration or maximum recycling. The transport energy of 1350 MJ and the user phase of 21060 MJ, which is included in the graph, is not shown (see Fig. 4).

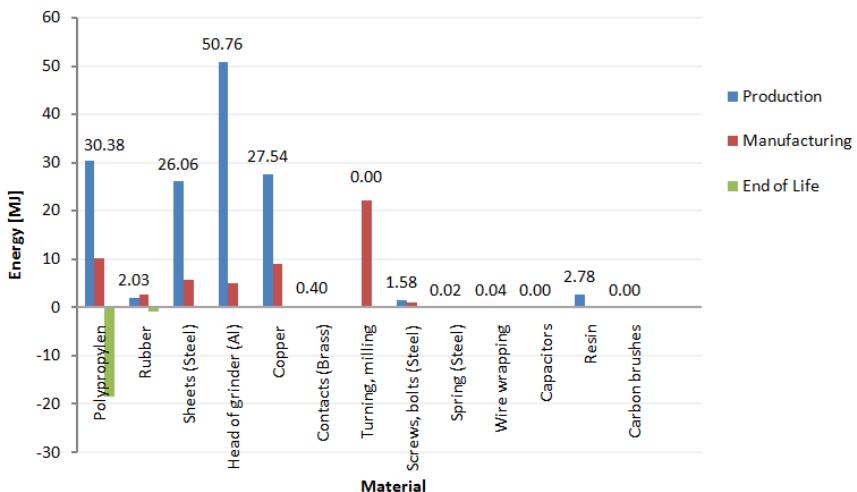


**Fig. 5** Graph of energy requirements for materials production according to OPM for 125 mm grinders (landfilling)

The graph (Fig. 5) shows the energy required for raw materials production, production of subsequent semi-finished products, product manufactory and landfilling. The data obtained from the LCI analysis provides information on the energy requirements for the product itself due to the zero return of waste into production. From the graph you can find information about the most energy-consuming raw materials such as aluminium alloys, copper, steel and plastics. The machining/injection process has a significant share of the amount of energy

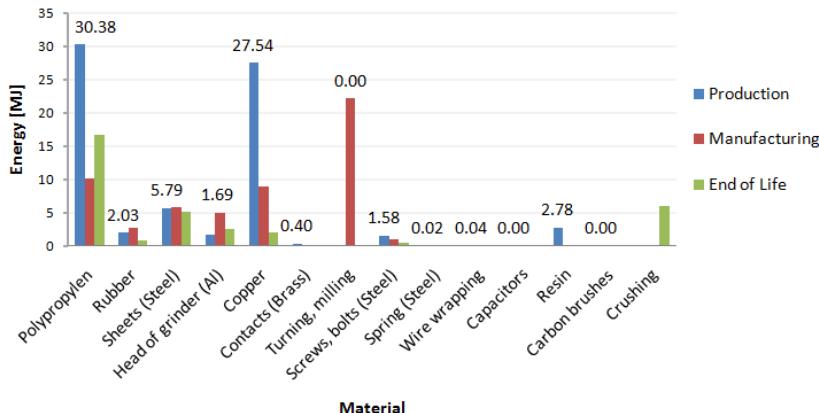
delivered to the considered system. Similarly, the possibility of combustion of the material components of the product in its final life stage is assessed (see Fig. 6). It can be seen from the above diagram that materials that are flammable (PP, PU, paper, wool, ...) can be used to recover energy. Other non-flammable materials are considered to be deposited in a landfill site. The possibility of reuse of waste materials back into the production system was also simulated in the reuse range from 10% to 100% (Fig. 8). From the point of view of energy efficiency of recycling, the breakpoint is found in the assessed product from 40% recycled materials to combustion of the same product. The maximum effect was 100% for aluminium alloys and 90% for other recyclable materials except PP where the recyclate was used outside the assessed system (Fig. 7).

**Material composition of the 125 mm angle grinder in terms of energy requirements of the life cycle according to the OPM (combustion)**



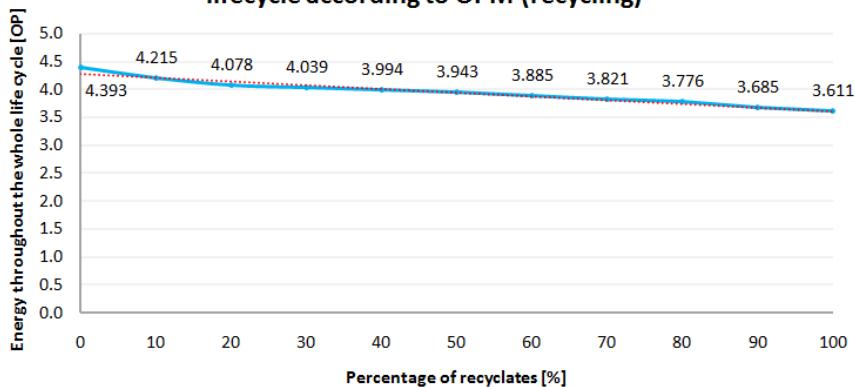
**Fig. 6** Graph of energy requirements for materials production according to OPM for 125 mm grinders (combustion)

**Material composition of the 125 mm angle grinder in terms of energy requirements of the life cycle according to the OPM (recycling)**



**Fig. 7** Graph of energy requirements for materials production according to OPM for 125 mm grinders (recycling)

**Dependency of recycled share and energy for the production of angular grinders 125 mm throughout the lifecycle according to OPM (recycling)**



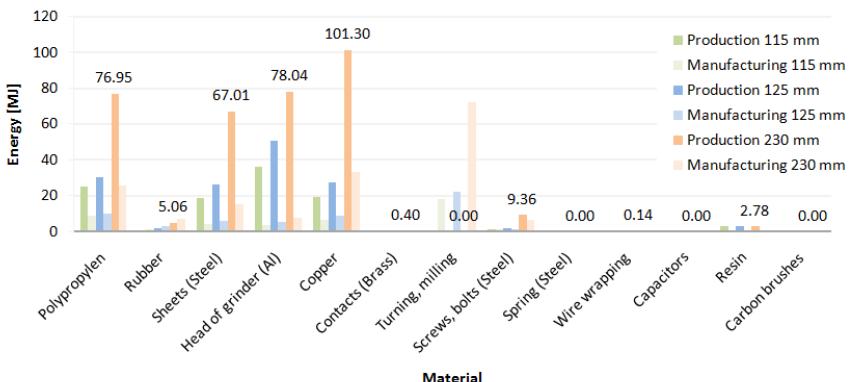
**Fig. 8** Graph of the proportion of the recycled quantity to the energy requirements for the production of the 125 mm grinder according to OPM (recycling)

Inventory analysis of the LCI was carried out in the case of landfilling and incineration of waste materials of the 115/125/230 mm angle grinders. Summarizing graphs of the inventory analysis of angular grinders (Fig. 9 and Fig. 10) compare each other with the dependence of the quantity of materials used in the products and a significant proportion of the electric motor construction itself on the energy requirements of the compared systems. It has been found that the weight ratio between the steel parts and the copper parts of the electric motor (the stator and the rotor) is in a ratio of 0.41 to 0.46. The energy to produce a semi-finished

## Section ARCHITECTURE AND DESIGN

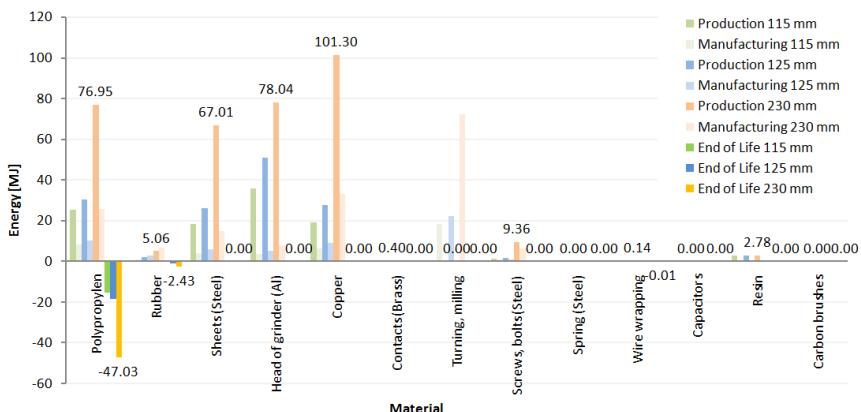
product, eg 1 kg of copper, is 103.5 MJ and 1 kg of 40.5 MJ of steel [6], [7]. When combusting the materials, see (Fig. 10), energy stored in the materials themselves does not return to the assessed system through the resulting heat.

**Material composition of angular grinders (115, 125, 230 mm) in terms of energy requirements for production according to OPM (landfilling)**



**Fig. 9** Graph of energy requirements for materials production according to OPM for 115/125/230 mm grinders (landfilling)

**Material composition of angular grinders (115, 125, 230 mm) in terms of energy requirements according to OPM (combustion)**

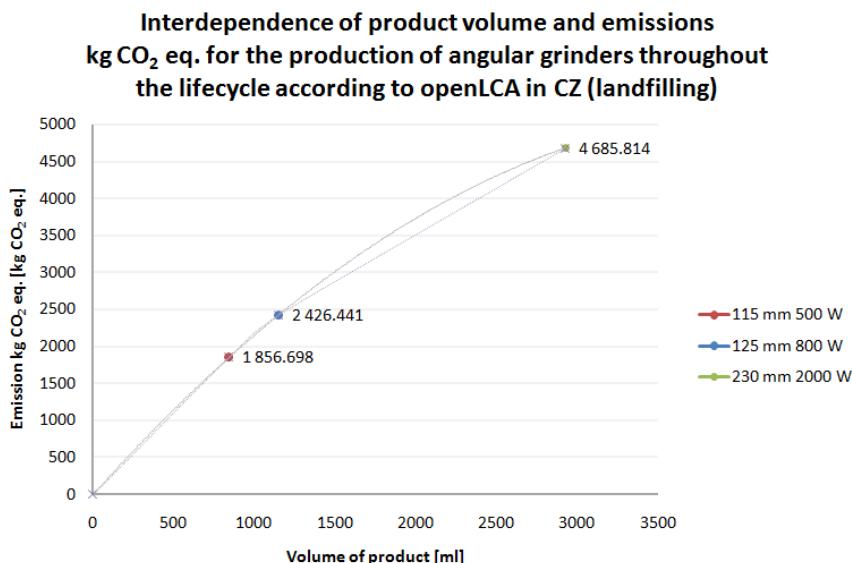


**Fig. 10** Graph of energy requirements for materials production according to OPM for 115/125/230 mm grinders (incineration)

## LCA METHODOLOGY

Emission estimates of kg CO<sub>2</sub> eq. was performed using the openLCA software, which allows detailed identification of the individual processes in the assessed system [11]. Through this program, it was possible to carry out an analysis the collected data on environmental impacts within the product lifecycle ended by

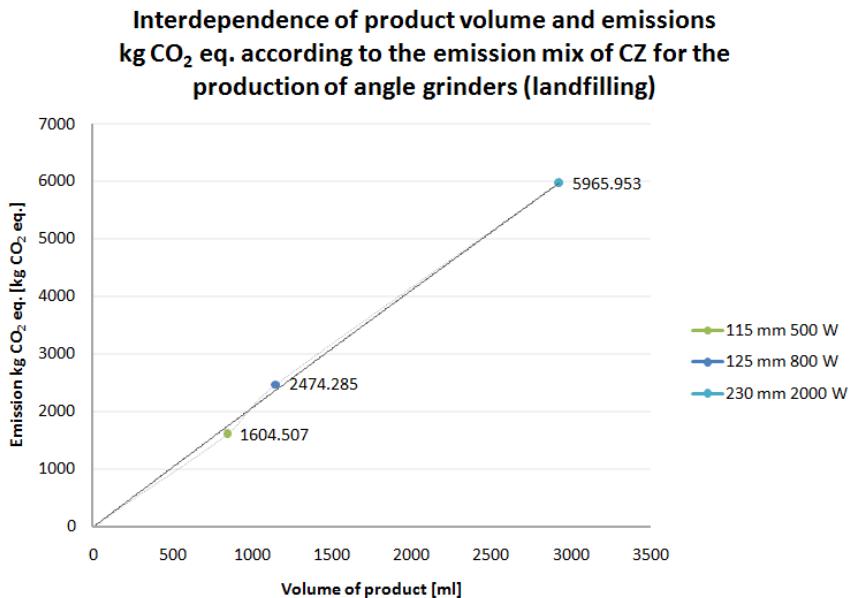
landfilling only (without recycling and incineration due to the absence of some processes in the openLCA software). The energy network of the Czech Republic was taken into consideration, taking into account the location of the raw material resources with subsequent pollution [10]. On the graph see (Fig. 11) the product volume and the emissions of kg CO<sub>2</sub> eq. generated during the life cycle of the product (without possible recycling and incineration). Amount of generated emissions kg CO<sub>2</sub> eq. corresponds to the scope of the system under assessment in the defined life cycle of the product.



**Fig. 11** Graph of product volume and emissions kg CO<sub>2</sub> eq. in lifecycle according to OPM for angle grinders 115/125/230 mm (landfilling)

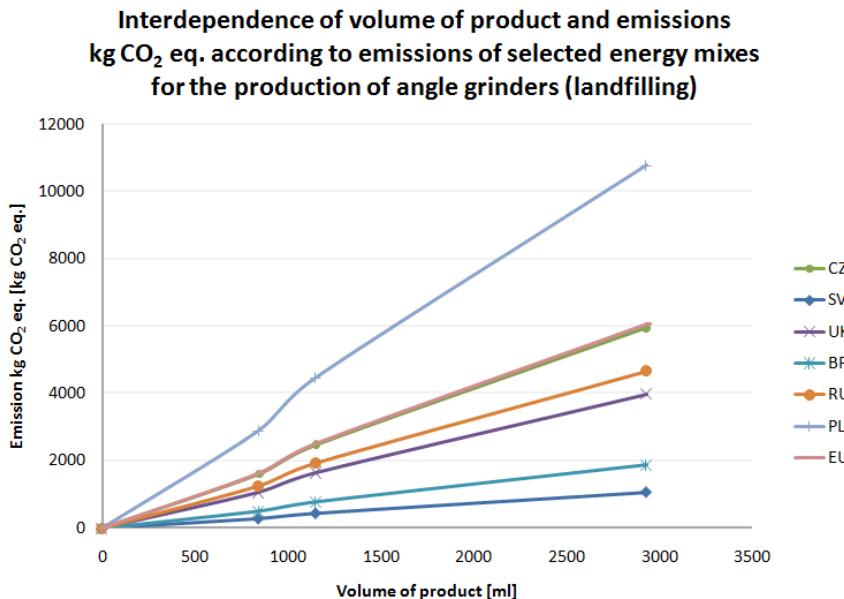
## METHOD USING ENERGY MIXES

To determine environmental impacts, g CO<sub>2</sub> eq./kWh was used using an energy mix that allows a detailed assessment of individual flows and processes in the system under assessment. From the data collected from the analysis using the OPM methodology as well as the LCI analysis, it is possible to determine the emissions of kg CO<sub>2</sub> eq. according to the place of origin and use of the product. Emissions of kg CO<sub>2</sub> eq. for Angle Grinders (115, 125, 230) mm, see (Fig. 3) for the product lifecycle for landfilling, recycling and incineration. For assessment, the Czech Republic's energy network and the energy mix emissions were 394 g CO<sub>2</sub> eq./kWh [10]. The transport was considered to be freight transport in the range (3.5 - 17.0) tonnes with emissions of 297 g CO<sub>2</sub> eq/km. [11].



**Fig. 12** Graph of emissions kg CO<sub>2</sub> eq. according to the energy mix emissions for 115/125/230 mm angle grinders (landfilling)

The advantage of the tool is the speed without the need for detailed analysis of the LCA according to the location of emission of kg CO<sub>2</sub> eq. see figure (Fig. 13). We can observe different emission rates according to the location of its origin, which is given by the composition of the energy sources of the given site. The input values come from the OPM methodology and from the LCI analysis. The energy values, including the user phase, are determined by using the value of the energy mix emissions of selected states/economies. Due to the different origins of life cycle emissions, in this case from transport, these emissions are determined by the type. The entire lifecycle of angular grinders (115, 125, 230) mm was evaluated - up to landfilling, but only the emissions generated during production could be processed.



**Fig. 13** Emission graph kg CO<sub>2</sub> eq. for selected world economies according to the energy mix for angular grinders 115/125/230 mm (landfilling)

## APPLICATION OF METHODOLOGY

For determination of energy requirements and emissions kg CO<sub>2</sub> eq. for the production of angular grinders, 4 designs of BUT FME, IMID (Brno University of Technology, Faculty of Mechanical Engineering, Institute of Mechanical and Industrial Design) students were selected. With the help of the established methodology, the values for individual designs [MJ, kg CO<sub>2</sub> eq.] were subtracted see graphs (Fig. 4 and Fig. 11), depending on their volume. For clarity, values were only deducted for landfilling, but can also be used in other life stages of the product. The information obtained is shown in the table (Tab. 3). The design of T. Kreidlova's angular grinder for which the methodology was applied, does not meet the parameters for angular grinders with a diameter of 125 mm, the volume is below the level of the detected value by 43% of the produced grinder. The most suitable volume characteristic is the K. Sychrova grinder, which is close to the commonly produced grinding machines with a 3% deviation.

## Section ARCHITECTURE AND DESIGN

*Tab. 3 Methodology application, from the top: D. Lob, K. Sychrova, A. Matuskova, T. Kreidlova*

	<b>Disc size</b> <b>115 mm</b> <b>Volume of grinders</b> <b>974 ml</b>  Energy for production (landfilling) 3.289 MJ Total energy (landfilling) 17201 MJ  Emissions production - energy mix CZ (landfilling) 18.25 kg CO <sub>2</sub> eq. Total emissions - energy mix CZ (landfill) 1878 kg CO <sub>2</sub> eq.
	<b>Disc size</b> <b>115 mm</b> <b>Volume of grinders</b> <b>820 ml</b>  Energy for production (landfilling) 3.22 MJ Total energy (landfilling) 14250 MJ  Emissions production - energy mix CZ (landfilling) 15.78 kg CO <sub>2</sub> eq. Total emissions - energy mix CZ (landfill) 1555 kg CO <sub>2</sub> eq.
	<b>Disc size</b> <b>125 mm</b> <b>Volume of grinders</b> <b>969 ml</b>  Energy for production (landfilling) 3.667 MJ Total energy (landfilling) 17105 MJ  Emissions production - energy mix CZ (landfilling) 18.17 kg CO <sub>2</sub> eq. Total emissions - energy mix CZ (landfill) 1867 kg CO <sub>2</sub> eq.
	<b>Disc size</b> <b>125 mm</b> <b>Volume of grinders</b> <b>666 ml</b>  Energy for production (landfilling) 2.758 MJ Total energy (landfilling) 11230 MJ  Emissions production - energy mix CZ (landfilling) 13.32 kg CO <sub>2</sub> eq. Total emissions - energy mix CZ (landfill) 1232 kg CO <sub>2</sub> eq.

## VERIFICATION OF PRELIMINARY RESULTS

The final evaluation of the results from the analysis based on the OPM methodology, see graph Verification, was carried out by subsequent proportional comparison of the outputs from the OPM methodology and the LCA methodology of determination of kg CO<sub>2</sub> eq. The deviation between methodologies is within the tolerance set.

## CONCLUSION

The article summarizes the knowledge of industrial designer's relationship with ecodesign, methodologies, factors influencing the environmental impacts of product production and distribution. Orientation in the wider issue of ecodesign requires knowledge covering international legislation, regulations and directives. Very problematic is the difficulty of using ecodesign tools, especially LCA-based tools and the high cost of their acquisition (GaBi, SimaPro, ...). The paper presents a new approach to determining emissions of kg CO<sub>2</sub> eq. and energy requirements for the production of products during their early design phase. These parameters can be determined in their entire range or in each part of the life cycle. The reason for the absence of this new methodology is the highly problematic determination of quantifiable values at an early stage of product design where only external shaping is possible without the possibility of obtaining volumetric or weight data. The results obtained assume that the energy requirements for production depend on the volume of the product while maintaining the elementary functional properties of the product. The internal structure of the investigated power tool shows a common material composition as well as proportionally used materials with respect to the volume of the product, and for this reason the dependence can be predicted. This predictability is also given by the ergonomics of the grip with the increasing power of the grinder and hence the increasing weight, which requires the ergonomic grip of the product (115 mm grinder and 230 mm grinder). These product features such as design, ergonomics, manufacturing economics, and design solutions interact with each other and act in a self-regulating way (optimal product effort). Using the proposed methodology, it is possible to quantify possible environmental benefits while optimizing product design at a very early stage of their design. Appropriate use of the OPM methodology (derived from the LCA) confirms the verification process using an independent LCA methodology (openLCA software) that compares the resulting data. Difference between emissions kg CO<sub>2</sub> eq. ranges from (18 to 25)%. Advantage is in particular the speed of determination of the emissions of kg CO<sub>2</sub> eq. from energy requirements to production without a detailed analysis of LCA. The results are derived only from emissions of energy mixes of individual states or economies. For the whole life cycle of the product, the largest emissions are kg of CO<sub>2</sub> eq. for electrical appliances result from their user phase (product operation). These emissions, however, are closely related to the user phase location and also to the place of the origin of the product. Product transport builds up to 10% of total emissions for the power tools assessed. The work does not deal with environmental impact of the product packaging.

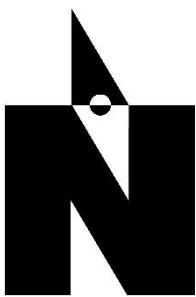
## ACKNOWLEDGEMENTS

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Section BUSINESS AND MANAGEMENT

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## COMPANY'S ACTIVITIES TERMINATION BY TAX AUTHORITY DECISION (SIMPLIFIED LIQUIDATION, LATVIA EXAMPLE)

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### ABSTRACT

This paper analyzed the government role to stimulate and to control the entrepreneurship environment. During the crisis, several taxes were amended to slightly mitigate the effects of the crisis, and in 2010 the Micro-enterprise Tax Law was developed and adopted. Started from 1996 the State Revenue Service has the right to suspend the taxpayer's economic activities (natural and legal person) due to infringements of laws and regulations. Due to low tax morale after financial crises in 2011 in the structure of the State Revenue Service was created of a new unit - the Tax Accounts Administration. In 2012 marked out that a part of the merchants, effectively terminating their business, are not legally dissolved and are not excluded from the Commercial Register, therefore, in 2012 essential amendments were made in the Commercial Law and in the law On Taxes and Duties – the requirements of both regulatory enactments were aligned and come into force the company's simplified liquidation. The statistical data confirms that State Revenue Service and the government role in organizing the business environment are significant.

The research aim is to analyze the government's role to stimulate and control entrepreneurship by amendments in enactments and the State Revenue Service right to suspend and restore the taxpayer's economic activities in Latvia. Based on the aim, the following research tasks were set: to analyze the registration and exclusion dynamics of companies; to analyze the development of enactments and amendments in them due to taxpayers activities and how work the special instrument for the State Revenue Service – terminate the company's activities due not to cooperate with the State Revenue Service; to analyze the taxpayers simplified liquidation and exclusion from the Register of Enterprises on the bases of a decision of the tax authority.

Materials and methods. The principal materials used for the studies are as follows: various enactments, amendments, various sources of institution reports and statistics. The following qualitative and quantitative methods were employed: the monographic method, logical analysis and synthesis, statistical methods, i.e. statistical observation, compilation and grouping of information, calculation of statistical data etc.

**Keywords:** *business environment, government role, tax administration, entrepreneurship*

## INTRODUCTION

In Latvia, the registration and exclusion of companies from Register of Enterprises are very dynamic during 2006 – 2017. One reason is entities insolvency after economic crises in 2007, but from 2012 the State Revenue Service (hereinafter – SRS) has a significant role in excluding entities from Register of Enterprises. During the crisis, several taxes were amended to slightly mitigate the effects of the crisis, and in 2010 the Micro-enterprise Tax Law was developed and adopted.

Started from 1996 the SRS has the right to suspend the taxpayer's economic activities (natural and legal person) due to infringements of laws and regulations. Started from 2008 the SRS must inform the Register of Enterprises about the suspension of economic activity of taxpayer if the taxpayer is registered in the Register of Enterprises. Due to low tax morale after financial crises in and taxpayer's reluctance to pay taxes in 2011 in the structure of the State Revenue Service was created of a new unit - the Tax Accounts Administration. In 2012 marked out that a part of the merchants, effectively terminating their business, are not legally dissolved and are not excluded from the Commercial Register, therefore, in 2012 essential amendments were made in the Commercial Law and in the law On Taxes and Duties – the requirements of both regulatory enactments were aligned and came into force the company's simplified liquidation. The statistical data confirms that State Revenue Service and the government role in organizing the business environment are significant.

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## RESEARCH RESULTS AND DISCUSSION

At any time, the role of the government in organizing and developing the business environment is significant.

In the National Development Plan of Latvia for 2007-2013, the government determined that the basis of the national economy is the successful development of a business based on free market principles and it is, therefore, necessary to stimulate the creation of new and new high added value enterprises [1].

To motivate individuals to engage in entrepreneurship in Latvia in 2010:

- 1) essential amendments were made in the Commercial Law;
- 2) was developed and adopted the Micro-enterprise Tax Law.

Started from 1 May 2010 the initial registered and paid-in equity capital for a limited liability company (hereinafter - LLS) could be 1.42 EUR (1 LVL) and after Latvia's accession to the European Union – 1 EUR. Before these changes, if founding an LLC, an equity capital of *2845.74 euros* (2000 LVL) had to be paid in before applying to the Register of Enterprises. [2]

Started from 1 September 2010 the Micro-enterprise Tax Law takes effect. The micro-enterprise tax rate was set at 9% of the calendar year's turnover (till 2012) and the status of a micro-enterprise could be obtained voluntarily by an individual merchant, an individual undertaking, a farm or fishing enterprise, as well as a natural person registered with the State Revenue Service as a performer of economic activity or a limited liability company which meets the following criteria:

- 1) the participants (if any) are natural persons, members of the board of directors of a limited liability company may only be employees of the micro-enterprise,
- 2) the turnover does not exceed *99 601 euros* (70 000 LVL) in a calendar year,
- 3) the number of employees does not exceed five at any time and the remuneration for work at a micro enterprise does not exceed *711.44 euros* (500 LVL) per month [3].

Šneidere R., Būmane I. welcomes the changes made to the Commercial Law, which allows the creation of new ones LLC with a minimum share capital of 1 EUR. As per their research for the first four years, 66.3% of all start-up companies have benefited from the Commercial Law, while their share has declined to 60.7% in the last year, but it also shows the high activity of entrepreneurs, as 30% of founders are newcomers who have not been involved in business as officials or members. [4]

And Leibus I. thinks that the micro-enterprise tax is a successful fiscal instrument to support small business during the economic crisis, particularly in the countries with high labour costs. Although the influence of the micro-enterprise tax on the economy is small, its introduction was a successful strategy. It has encouraged the legalization of business activities that are especially important in the situation of high unemployment. Besides the micro-enterprise tax legalized many physical persons that are now registered as micro-enterprise employees, but previously they were not entered in the taxpayers' data basis.[5]

By creating micro-enterprise tax and reducing the registered and paid-up share capital for LLC government achieved its goal – activating entrepreneurship and increasing the number of entrepreneurs (Table 1).

**Table 1** Registration and removal dynamics per year by Latvia's Register of Enterprises in the period from 2006-2017

<b>Year</b>	<b>Number of registered entities</b>	<b>Chain increase, %</b>	<b>Number of excluded entities</b>	<b>Chain increase, %</b>
<b>2006</b>	13404	–	3274	–
<b>2007</b>	14208	6	11185	242
<b>2008</b>	11347	-20	4765	-57
<b>2009</b>	9228	-19	5715	20
<b>2010</b>	13422	45	8834	55
<b>2011</b>	18044	34	3920	-56
<b>2012</b>	16891	-6	4308	10
<b>2013</b>	16365	-3	4156	-4
<b>2014</b>	14965	-9	6402	54
<b>2015</b>	13484	-10	10070	57
<b>2016</b>	11206	-17	12229	21
<b>2017</b>	10210	-9	16480	35

Source: author's calculations based on statistical data of the Register of Enterprises of the Republic of Latvia [6]

Although the increase in the number of registered companies and taxpayers has also resulted in an increase in tax revenues over the period from, however, the crisis has had a significant impact on the ability of the SRS to collect taxes according to declared information by entities (tax declarations).

In 2011, following the recommendation of the International Monetary Fund on improving the work of the SRS in the field of tax debt recovery, in the structure of the SRS was created of a new unit - the Tax Accounts Administration with 272 posts [7].

The author concludes that new employees have not been taken up by creating a new unit and creation of this unit was the result of an internal reorganization, as the number of actual employees at the beginning of 2011 was 4176, but by the end of 2011 - 4147, and the actual total number of employees in this year has decreased by 29 employees.

Started from 5 July 1996 the SRS has the right to suspend the taxpayer's economic activities due to infringements of laws and regulations. From 4 March 2008 in this case the SRS must send information on the suspension of economic activity of the taxpayer to the Register of Enterprises if the economic activity of the taxpayer registered in the register of the Enterprise Register or Commercial Register is suspended and also send the information on reinstating of the taxpayer's economic activity if SRS renewing the suspended economic activity of a taxpayer.

Therefore In 2012 essential amendments were made in the Commercial Law and in the law On Taxes and Duties – the requirements of both regulatory enactments were aligned:

1) the law On Taxes and Duties strengthened SRS power to suspend and to renew the economic activity of a taxpayer due to infringements of laws and regulations

2) and in the Commercial Law was included regulation about the termination of activities of the company on the basis of a decision of the Commercial Register Office or Tax Authority.

The SRS has the right to suspend the economic activity of the taxpayer (or its structural unit in which infringement has occurred) if at least one of the following infringements is identified:

1) if the taxpayer employs persons without concluding employment contracts with them, and the proportion of such persons is 50 per cent or more however not less than three persons of the persons employed in the object which is audited (territories and premises owned or used by the taxpayer in which economic activity is performed or which are related to deriving of income in the territory of premises owned or used by other natural or legal person);

2) the taxpayer has evaded taxes or fees;

3) the taxpayer uses a cash register, hybrid cash register, cash-office system, dedicated device and equipment software or accounting information computer system, the software of which has been changed or other activities have been carried out thereby creating an opportunity to conceal or reduce the taxable base on which taxes and duties are levied;

4) the taxpayer disburses income which is not recorded in the accounting registers and in the report on mandatory national social security contributions, personal income tax levied on earnings of employees and State fee of the business risk for the reporting month submitted to the SRS to the person employed, or employs more than one person without concluding employment contracts;

5) the taxpayer has not eliminated the infringements which caused its removal from the register of value added tax payers of the SRS;

6) the taxpayer has not settled late tax payments subject to recovery based on a decision regarding recovery of late tax payments and a statement regarding the impossibility of recovery is at the disposal of the SRS. [9]

The author compiled statistics about suspension and renewing the economic activities of taxpayers per year by SRS (Table 2).

***Table 2 Suspension and renewing economic activity of taxpayers per year by the State Revenue Service of the Republic of Latvia in the period from 2012-2017***

Year	The number of taxpayers to whom SRS has			
	Suspend economic activity	Chain increase, %	Renewing economic activity	Chain increase, %
<b>2012</b>	637	—	14	—
<b>2013</b>	10351	1525	231	1550
<b>2014</b>	10897	5	508	120
<b>2015</b>	12533	15	686	35
<b>2016</b>	10480	-16	715	4
<b>2017</b>	5457	-48	328	-54
<b>Total:</b>	<b>50355</b>		<b>2482</b>	

Source: author's calculations based on statistical data of the State Revenue Service of the Republic of Latvia [8]

The number of taxpayers includes both – the natural persons registered with the SRS as a performer of economic activity and the taxpayers registered in the register of the Enterprise Register, like LLC. Due to a large amount of data, the author did not analyse the distribution of natural and legal persons in the number of taxpayers to whom SRS has suspend their economic activity in this paper. The author will do it in one of the following papers in order to more accurately calculate the impact of the SRS decisions on the liquidation of capital companies.

According to the statistical data (Table 2) author concludes that SRS is very active to put the business environment in order and it affects on the number of excluded entities from Latvia's Registers of Enterprises too (Table 1). During 2012 – 2017 were registered 83121 entities and excluded 53645 entities in the Register of Enterprises. In the same time, SRS suspended 50335 taxpayer's economic activities but renewing the economic activities only 4.93% of them.

In 2012 marked out that a part of the merchants, effectively terminating their business, are not legally dissolved and are not excluded from the Commercial Register, therefore, the information in the Commercial Register is available about them, which in turn may mislead third parties as to the existence of these entities. Neither members of the company nor the creditors take actions to ensure the liquidation of these entities, including the distribution of property and satisfaction of creditors' claims, therefore, these entities are not active in liquidation or insolvency proceedings. The existence of such legally existing but actually non-existent entities contributes to uncertainty in the Commercial law.

Activities of the company may be terminated on the basis of a decision of the tax authority if:

- 1) the company has not submitted an annual report within one month after administrative punishment was imposed and at least six months have passed since the violation was committed;

2) the company has not submitted the declarations for the time period of six months, provided for in tax laws, within one month after administrative punishment was imposed;

3) activities of the company have been suspended on the basis of a decision of the tax authority, and the company has not rectified the indicated deficiency within three months after activities thereof were suspended. [2]

And by this started simplified liquidation of the company – liquidation without court intermediation and without the active involvement of the founders of the company.

The author compiled statistics about the taxpayers, registered in the register of the Enterprise Register, simplified liquidation and exclusion from the Register of Enterprises on the bases of a decision of the tax authority in 2012 – 2017 (Table 3).

*Table 3 The taxpayers simplified liquidation and exclusion from the Register of Enterprises per year on the bases of a decision of the State Revenue Service of the Republic of Latvia in the period from 2012-2017*

Year	Decision on the suspension of economic activity	Exclusion from Register of Enterprises after suspension of economic activity	Decision on termination	Exclusion from Register of Enterprises after decision on termination
2012	49	0	0	0
2013	1510	12	0	0
2014	1667	217	1812	200
2015	419	487	718	354
2016	134	900	299	752
2017	23	2186	106	1629
<b>Total:</b>	<b>3802</b>	<b>3802</b>	<b>2935</b>	<b>2935</b>

Source: author's calculations based on unpublished statistical data of the Register of Enterprises of the Republic of Latvia

According to the statistics (Table 3) in 6737 cases the activities of the companies were terminated on the basis of a decision of the tax authority in the period from 2012 – 2017 and it is about 13% from the total number of excluded entities from the Enterprise Register.

It confirms that SRS and the government role in organizing the business environment are significant.

The author believes that entrepreneurs do not seek to restore the company's business activities if it has been suspended by the SRS but is waiting for statutory deadlines and expects the company to apply simplified liquidation. It can be

assumed that it is easier to register a new company and start a new business than to rebuild an existing one. In the simplified liquidation, the founders do not need to appoint a liquidator. In essence, the company's simplified liquidation is free of charge to the founders of the company. The author believes that the impact of such a liquidation on the business environment has to be assessed - it is positive that empty businesses are excluded but are only empty businesses and fraudulent companies are excluded need to be explored. The simplified liquidation also can be used as an avoidance of insolvency proceedings.

## **CONCLUSION**

1. By creating micro-enterprise tax and reducing the registered and paid-up share capital for LLC government achieved its goal – activating entrepreneurship and increasing the number of entrepreneurs.
2. Although the increase in the number of registered companies and taxpayers has also resulted in an increase in tax revenues over the period from, however, the crisis has had a significant impact on the ability of the SRS to collect taxes according to declared information by entities (tax declarations).
3. The SRS has the right to suspend the taxpayer's economic activities due to infringements of laws and regulations and renew it.
4. During 2012 – 2017 SRS suspended 50335 taxpayer's economic activities but renewing the economic activities only 4.93% of them.
5. In 2012 marked out that a part of the merchants, effectively terminating their business, are not legally dissolved and are not excluded from the Commercial Register, therefore, the information in the Commercial Register is available about them, which in turn may mislead third parties as to the existence of these entities.
6. In 2012 the Commercial Law and in the law On Taxes and Duties requirements were aligned:
  - 6.1. the law On Taxes and Duties strengthened SRS power to suspend and to renew the economic activity of a taxpayer due to infringements of laws and regulations
  - 6.2. and in the Commercial Law was included regulation about the termination of activities of the company on the basis of a decision of the Commercial Register Office or Tax Authority;
7. In 6737 cases the activities of the companies were terminated on the basis of a decision of the tax authority in the period from 2012 – 2017 and it is about 13% from the total number of excluded entities from the Enterprise Register.
8. SRS and the government role in organizing the business environment are significant.

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## COMPETENCY MODEL OF THE MANAGER IN THE SITUATION OF EXTRAORDINARY CRISIS EVENT

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### ABSTRACT

The world's trends of development show the growing importance of the value of effective management and decision making. Managerial competencies need to be increased especially in situations that are referred to as crisis situations. Primarily, it is a situation endangering the lives of people, causing extensive material damage and, eventually, disposal of affected organizations. In such situations it is necessary to replace the routine management strategies with the managerial command.

The competency model serves as a basis for the creation of individual assessment of personal and professional prerequisites method. Managerial command requires the ability of key and specific competencies, which are activated and used to greater extent, especially in crisis situations. Some managerial competencies which are needed in common practice are not desirable in this case.

The identification of priority psychological, professional, physical and social factors in the decision-making situations of the unexpected crisis was solved by qualitative and quantitative analyzes of the Panel of Experts outputs. Based on the analysis of the expert panel outputs, six core competences were selected: Communication and Interaction, Information Processing, Authority (Personality), Stress, Self-Management and Management. Specific expertise and their required level were determined by experts and include the necessary knowledge of fire protection, occupational safety, traumatology and basic knowledge of human rescue, emergency rights (evacuation, etc.) and crisis management.

Core competencies are divided, depending on their capability, the possibilities for further development. Hard competencies relate to personal assumptions with limited scope for development. Soft competencies relate to general and specific skills and can be developed.

Each competence is defined by sub-competencies that are crucial for the successful operation of the manager-commander in a situation of extraordinary crisis event. In these parameters above-average skills and abilities are required. Within each competence, risk factors that are objectionable for the manager-commander are further defined. These variables must be kept under control or suppressed. The criteria for the assessment of sub-competencies were also set in the framework of the competence model.

***Keywords:*** *Competence, Competency Model, Soft Competencies, Hard Competencies, Managerial Command*

## INTRODUCTION

We define the managerial command in extraordinary crisis situations as a specific way of managing extraordinary events that replaces the usual management strategy with a centralized way of management and coordination. It is situational decision-making in times of distress with many threatening factors and with high demands on the overall resistance of an individual, decision making which besides solving the current situation determines also the severity and extent of the consequential damages.

The management of the organization is also responsible for dealing with emergencies and it is therefore necessary to have managers with the prerequisites for managerial command in the management structures of the organization. Managerial Command is current in a situation of imminent threat and leads to the elimination of the crisis as opposed to risk management as a systematic activity with the clear aim of identifying potential risks and preventively limiting the possibility of their occurrence or possibly reducing their impact which is the task of a specialized risk manager or part of the work of individual managers. From a risk management point of view, it is the so-called crisis management, the management phase or the mitigation of risks - in this case the extraordinary risks. The risks and management of the crisis situations, together with the consequences of the identified decisions, must be identified, analyzed and evaluated in a very short time span [4].

The competency model serves as a basis for the creation of individual assessment of personal and professional prerequisites method. Competencies in this model are conceived as ability, capacity, skill, efficiency, not as the scope of a certain scope, activity, authority, and duty [5].

## METHODOLOGY

The Panel of Experts was conducted as a two-round investigation for project purposes, especially with regards to time and financial possibilities. Within a simple efficient selection, a group of thirteen "experts" was approached, which could provide a "view" to managers - commanders. The addressed group of people has been recruited from the following areas: HR consultant in the field of automotive, fire brigade commanders, Czech police and army, security managers of petrochemical distribution and production companies, psychologist in fire brigade, the executive director (environmental and waste management), the manufacturing engineering CEO, the automotive maintenance manager, the quality control manager of the company involved in the production of electronic equipment.

The first round of panel of experts through electronic brainwriting provided a set of open answers to the question of what the manager - commander should be, respectively which competencies are key for him/her. With the data obtained, we worked by the Grounded Theory method of the authors Glaser and Strauss. The theory is inductively derived from the process of examining the phenomenon that it represents, is created and temporarily verified by systematically collecting data on the phenomenon under investigation and analyzing them. Phases of data collection, analysis, and theory itself complement each other [1], [2].

In the second round of the expert panel, a questionnaire with an alphabetical list of subcompetencies was presented to experts who evaluated the importance of particular items for the successful performance of the manager-commander. Based on this data, axial coding was also performed [3]. The data obtained from the questionnaire survey was statistically processed. The average saturation value of individual subcategories and the average deviation from this value allowed us to allocate a set of subcategories with above-standard (required subcompetencies) and under-standard (risk factors) modality.

## COMPETENCY MODEL

A) Hard competencies

- **AUTHORITY - Required Optimum**

**Responsibility:** Ability to take responsibility for the situation and other people, even if there is no guarantee of success. The power to influence the situation in accordance with the required values (the principle). He/she can share responsibility with other people.

**Natural authority:** It is the authority whose opinions, attitudes or decisions are usually accepted and followed with other members of the group. The ability to persuade, to make people believe him/her, there is no need to justify and explain his/her demands, there is no need to exert pressure.

**Decision-making:** Ability to decide, to choose a procedure that is the best of all possible at that moment. Decision-making not only after a quick analysis of the problem, but also intuitively. In decision-making he/she is not influenced by other people.

**Self-confidence:** The ability to trust in him/herself with no unnecessary fears. Confidence in him/herself is unshakable, he/she is not doubted (he/she is aware of the fact other people are influenced by uncertainty in crisis situations).

**Activity:** High activity, need for things to be in motion, to keep doing something. However, it is not without thinking, all activities are expedient. He/she cares about what he/she does.

## RISK FACTORS - Acceptable Risk Level

**Arrogance:** Manifesting his/her dominance in an appropriate way - authoritatively, assertively.

**Pessimism:** Remaining responsive to risks but does not fall through a pessimistic approach. He/she does not want to increase tension and uncertainty, demotivate other people.

**Submissivity:** In crisis situations, he/she is dominant with ability to command, but in specific situations (e.g. after the arrival of the Integrated Rescue System) ability to subordinate. He/she respects the management hierarchy in common situations.

**Egocentrism:** He/she likes to be promoted, but he/she is not an egocentric and individualist, it is not just for his/her own benefit.

- **INFORMATION PROCESSING - Required Optimum**

**Operational Thinking:** Thinking is quick, flexible. Ideas and practices follow on - the ability to apply them to other situations.

**Practical Thinking:** Interest in information that can be used in practice, endeavoring to practice the knowledge.

**Strategic Thinking:** Strategic, long-term considerations but in terms of conditions. System approach, thinking in context, trying to align goals with procedures and resources. The ability to think hypothetically, to set the right prerequisites for the solution. Intuition is also involved.

**Divergent Thinking:** Reasoning to width, creativity, search for multiple solution options (not one way).

**Global Thinking:** Orientation in the structure of the problem, overlook. Comprehensive assessment of everything what is related to the solved problem.

**Analytical Thinking:** Recognizing partial details and choosing those that are essential to the solution. Orientation in the problem based on accurate analysis, rational justification of selected details and choice of the right procedure.

## RISK FACTORS - Acceptable Risk Level

**Stereotype:** Stereotypes - repeated procedures and thinking patterns in a level helping to suppress uncertainty and concern. Good estimation of using the best practices (automated activities) and options for a different procedure (not rigidity).

**Search for change:** He/she does not try to be original in all circumstances, keeping insight even in a confusing situation, ability to orientate. Chaos does not matter, on the contrary it is stimulating (chaos under control).

**Interest in theory:** The interest in new knowledge, does not underestimate the data analysis, but he/she is rather practical.

- **STRESS - Required Optimum**

**Stress resistance:** Managing long-lasting heavy loads better than others, well tolerates stressful situations, can cope with obstacles.

**Balanced Personality:** A balanced person, usually coping with problems quickly.

**Coping by Workload:** An energetic person, work activity does not burden him/her, but he/she charges.

## RISK FACTORS - Acceptable Risk Level

**Fear and worry:** Not suffer from unnecessary worries, ability to deal with them (if he/she feels some fear or worry).

**Feelings of helplessness and hopelessness:** Feelings of helplessness and hopelessness are not typical or do not show up in performance.

**Abandon:** Risk counting but does not go into action without thinking.

**Psychological Vulnerability:** He/she does not worry with the trifles, easy coping with failures ("does not break him / her").

**Affection:** Ability to keep emotions under control in a tense situation and respond appropriately to the situation (assertively).

**Impulsiveness:** He/she is not impulsive, hasty but rationally, factually, keeping his/her reaction under control.

**Moodiness:** He/she is not moody, usually able to handle it. His/her behavior is consistent, people know what they can expect from him/her.

**Apathy:** Apathy and inertia are very rare as result of great fatigue.

**Internal Tension:** The increased stress that accompanies the experience of extraordinary situations does not lead to undesirable reactions.

- **SELF-REGULATION** - Required Optimum

**Quick Decision-Making:** The speed of decision-making has no negative effect on the correctness of the decision. Ability to make quick decisions even under pressure.

**Self-Determination:** Strong will, he/she can endure even if he/she is not successful at that moment. He/she is not discouraged by partial failures. Ability to deal with things that are not pleasant or that are difficult.

**Purposefulness:** Usually reaches what he/she has set up.

**Sense of Duty:** He/she respects set standards, prefers the duty to personal interests.

## RISK FACTORS - Acceptable Risk Level

**Need to Apply:** Self-realization (applying) is motivating. However, in crisis situations, this action is not intended to attract attention to him/herself.

**Need to Succeed:** Being successful is important and motivating. However, in a critical situation the effort to manage the action successfully prevails over the need for personal success clearly.

**Competitiveness:** Competitiveness does not change in rivalry in tense situation.

**Restraint:** Ability to control emotions even in a tense situation, to maintain the necessary distance, but not close him/herself. Because of this it is possible to solve conflicting situations or to make quick choices (restraint does not seem like hesitation).

**Motivation by Material Welfare:** Material evaluation is an important but not a prime motive. Risk is not undergone to obtain material rewards.

**Motivation by Power and Promotion:** Crisis management is not an opportunity to gain a position that gives power and influence. It is not act in a busy way.

**Gullibility:** He/she is aware that people in crisis can act unusually, they can fail. He/she continuously checks people who overcome the crisis situations.

### B) Soft competencies

- **COMMUNICATION AND INTERACTION** - Required Optimum

**Ability to Argue:** Ability to communicate objective data, facts that clarify or rebut anything, and persuade others about the truth of what is said. Arguments can be based on practice or theory, but they are clear and precise.

**Ability to Communicate Clearly and Specifically:** Facts are communicated clearly and comprehensibly, he/she can explain them in relation to the situation or specific examples. He/she chooses the right words, has good vocabulary.

## RISK FACTORS - Acceptable Risk Level

**Suspiciousness:** At the beginning of the relationship, he is not immediately open and trustworthy, he monitors what he can expect from people, but he is not directly suspicious.

**Reserve:** He/she keeps a healthy distance from people, allowing him/her an objective view of others. In crisis situations, he/she does not stop communicating with others.

**Criticism:** Assessing people with a certain amount of criticism, but he does not need to ventilate his critical views in all circumstances. He/she gives unambiguous rational feedback.

**Compassion:** He/she can be compassionate with other people, but it does not influence decision making. He/she maintains a reasonable distance.

**Altruism:** He/she has interest in people and their good, but it is not the main criterion for his/her actions. He/she can also behave hard if necessary.

**Affiliation:** He/she can behave friendly to others, but in a crisis situation this does not prevent the command. He/she is not dependent on positive feedback from other people.

**Empathy:** A certain degree of empathy is expected, helping to estimate the others and their responses. In crisis situations that requires speed, vigor and hardness, he/she must be suppressed, so that identification with others does not influence manager's decision-making.

**Collegiality:** In common conditions, he is acting as a collegial individual, depending on the people he/she works with. However, collegiality has the limits, it is not permissible to prefer someone just because it is a colleague, it is necessary to take other criteria into account.

**Conflict:** He/she does not avoid conflicting situations, knows it cannot be avoided, but it can be prevented. He/she acts assertively in conflict situations.

- **MANAGEMENT - Required Optimum**

**Willingness to Lead Others:** Taking the initiative, manifesting him/herself as a leader in situations where the leadership of a group is needed.

**Operational Management and Organizational Skills:** Excellent organizer, can transfer the assigned tasks to executable activities, with very good time management.

**Ability to Control and Evaluate:** Assessment and control are a natural part of work and management. He/she can clearly determine when and what to control, he/she can evaluate the performance of him/herself and others.

**Ability to Motivate Others:** Ability to affect people, activating them, motivating them appropriately, being able to individually choose diverse motivational means.

**Ability to Make Decisions:** He/she can orient him/herself in offering more options and choose the right solution. The situations which must be decided are not stressful.

**Skills to Set Goals:** High efficiency in setting and achieving goals. While working, he/she maintains a set direction and usually achieves the desired results.

**Skills to Coordinate Activities:** Very good coordinator. He/she can allocate partial activities to people so that they complement each other, assign tasks according to the assumptions of individuals, he/she can delegate.

## RISK FACTORS - Acceptable Risk Level

**Partnership:** In common situations, he/she favors partnering, he/she is able to assert unambiguous authority in crisis situations.

**Democratic Approach: Interest in Power:** In common situations, he/she prefers a democratic style of management. In the crisis situations, when it is necessary to act from the position of authority, he/she can command.

**Expansiveness:** Ability to divide the power appropriately, knows what he/she can do. He/she does not underestimate his/her options, but he/she does not even overrate them.

**Liberal Approach:** The liberal approach is applied only to people who are very well-tested – manager knows that they are capable, reliable and trustworthy. This approach is replaced by command in crisis situations.

### • SPECIFIC EXPERTISE - KNOWLEDGE COMPETENCE

These competences are among so-called soft competencies - they can be developed. Specific competencies (knowledge component) and their rate have been determined by experts-co-investigators of the project and include the necessary knowledge of:

- Behavior and decision-making in case of fire and spread of smoke
- Behavior and decision-making in leakage of chemicals and explosive gases
- Traumatology and basic knowledge of saving human life
- Law in extraordinary situations (evacuation, etc.)
- Management and Managerial Command

## CONCLUSION

Based on the analysis of the expert panel outputs, six core competencies were selected: Communication and Interaction, Information Processing, Authority (Personality), Stress, Self-Management and Management. Specific expertise and their required level were determined by experts and include the necessary knowledge of fire protection, occupational safety, traumatology and basic knowledge of human rescue, emergency rights (evacuation, etc.) and crisis management [5].

Manager-commander competencies are defined by the optimum required (high) level of subcompetencies. Furthermore, there are risk factors within each of the competencies. The characteristics of the risk factors define the optimum, it means an acceptable level of risk. Based on this competency model it is possible to evaluate and select managers able to take responsibility for dealing with serious events that interfere with the stability of the system with potential threats to its security and existence, and to govern their further professional development. Applying the competency model of the manager in the situation of extraordinary crisis event can also be applied in (pre)university studies.

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# CROWDSOURCING - A NEW PARADIGM OF ORGANISATIONAL LEARNING OF PUBLIC ORGANISATIONS

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## ABSTRACT

Crowdsourcing is one of the new themes that has appeared in the last decade. It is perceived as an innovative method that can be used for problem solving, improving business processes, creating open innovations, building a competitive advantage, and increasing transparency and openness of the organisation. The importance of crowdsourcing for organisational learning is seen as one of the key themes in the latest literature in the field of crowdsourcing. This article is a response to the recommendations in the subject literature, which states that crowdsourcing in public organisations is a new and exciting research area. The aim of the article is to present a new paradigm that combines crowdsourcing levels with the levels of learning. This article presents a cross-sectional study of four Polish municipal offices that use four types of crowdsourcing, according to the division by J. Howe. Semi-structured interviews were conducted with the management personnel of those municipal offices. The research results show that crowdsourcing is a new and rapidly developing organisational learning paradigm.

**Keywords:** *crowdsourcing, organisational learning, paradigm, organisational learning paradigm*

## INTRODUCTION

Crowdsourcing is one of the new themes that has appeared in the last decade. The importance of crowdsourcing for organisational learning is seen as one of the key themes in the latest literature in the field of crowdsourcing [14]. Crowdsourcing is no longer just a paradigm of online problem solving, open design, computer networks, knowledge management, and participation. However, in the context of public organisations crowdsourcing is perceived mainly as a way to generate information, co-produce services, create new solutions and public policies [11]. This means that public organisations, by means of using crowdsourcing, obtain information from citizens to improve public services and their shaping. The issue of organisational learning using crowdsourcing is overlooked. Various types of crowdsourcing have been identified in the literature [7]. Until now, scientists focused primarily on collective intelligence [2] and crowd voting [14]. However, illustrative cases of crowdsourcing suggest that the use of different types of crowdsourcing may be useful for improving innovation. Interestingly, the literature suggests a positive relationship between crowdsourcing and organisational learning, but there is no empirical evidence in the literature, in particular in the context of the various types of crowdsourcing used by public organisations. As part

of previous research, it was verified how crowdsourcing is linked to organisational learning. However, these studies were conducted in mature and innovative organisations, and only one type of crowdsourcing was considered - the conclusions were generalized to all types of crowdsourcing [14]. That is why, the aim of our study is to present a new paradigm that combines crowdsourcing with organisational learning, including four types of crowdsourcing, according to the division by Howe: collective intelligence, crowd creation, crowd voting, and crowdfunding. Bearing in mind the above, four free-form interviews were conducted with the management staff of municipal offices that make use of each of the distinguished types of crowdsourcing. Secondary sources in the form of strategy analysis and reports posted on the websites of municipal offices complement the research. A review of the current state of knowledge on crowdsourcing suggests conducting future research in public organisations [2], especially in the municipal offices. We believe that our research will contribute to a better understanding of crowdsourcing in the context of organisational learning and it will allow us to postulate that crowdsourcing is a new and rapidly evolving organisational learning paradigm. The research is of an interpretive nature, which will allow us to look at the significance of the phenomena and understand the activities and relations taking place in crowdsourcing. It will also contribute to managerial practice because it will reveal the structure of crowdsourcing with a specification of its types, which may be a decision criterion for decision-makers deciding on its implementation.

## **1. THEORETICAL BACKGROUND**

### **1.1. Crowdsourcing**

Crowdsourcing, as defined by Howe [6], is the act of taking a job traditionally performed by a designated employee and outsourcing it to an undefined, generally large group of people in the form of an open call. Crowdsourcing is one of the most important factors affecting the time of launching a product and improving its quality. In addition, the previous literature on crowdsourcing focused mainly on the benefits of access to creativity, openness, and various solutions. Crowdsourcing has been proven to improve business processes, creating open innovations [2], building competitive advantage, creating innovation and organisational efficiency. It has also been mentioned that it contributes to organisational learning.

Crowdsourcing is the source of organisational learning also in public organisations. Its specificity is related to the characteristics of public organisations and the context of their operation. First of all, the public sector operates on the basis of a stakeholder model, which should help engage in crowdsourcing due to the participatory modus of activity. On the other hand, however, there are clear organisational, technological, social and cultural limitations stemming from the context of the functioning of this type of organisation [12]. Public organisations, in comparison with commercial organisations, often have a greater degree of formalization and bureaucratization, as well as resistance to change, which may hinder the development of crowdsourcing. Also, the absorption of new IT technologies may be slower in competitiveness-neutral activities. The use of crowdsourcing for organisational learning is also shaped by the level of social capital and the dominant configurations of cultural values [9]. The low level of

social capital limits the possibilities of using crowdsourcing. Similar significant dependencies can be found at the level of identity and organisational cultures.

### **1.2. Organisational learning – a 4I perspective**

Organisational learning is a process in which organisations learn in a quickly changing environment. Organisational learning is therefore "the process of change in individual and shared thought and action, which is affected by and embedded in the institutions of the organisation" [5]. The multilevel concept of organisational learning by Crossan, Lane and White recognises them as a dynamic process in which changes in knowledge and behaviours occur and the results of earlier learning in individual actions are implemented, which means a flow of learning between all levels. Considering the purpose of this study, organisational learning will be perceived through the prism of the approach of Crossan and her colleagues. According to it, the learning process takes four forms that flow seamlessly into one another, i.e. intuition, interpretation, integration, and institutionalization. Intuition and interpretation occur on an individual level. These processes take place in the heads of individual organisational units and rely on modifying or generating individual knowledge based on individual experience and knowledge. At the team level, there are interactions between individual units. Through interpretation and integration, and more specifically joint decision-making, actions or conversations, are followed by common understanding, which allows new knowledge to emerge. At the organisational level, through institutionalization, the learning outcomes of individuals and the team are defined, consolidated and disseminated. The knowledge of individuals and the team is consolidated in processes, structures, strategies, systems and culture. They form a whole and are adapted to the requirements of the environment.

## **2. EMPIRICAL RESEARCH DESIGN**

### **2.1. Case selection and characterisation**

The selection of the research subject was carried out using the funnel method. First, the search for appropriate public organisations was narrowed down to the municipal offices. Previous research has concerned crowdsourcing in ministries, governments and government agencies, and healthcare. The aspect of municipal offices has been overlooked. The literature indicates that crowdsourcing should be included in city strategies and that it is helpful during spatial planning. Thus, cities are becoming the centres and engines for the development and improvement of the innovative economy. This determines reaching for modern technologies that enable residents to solve problems and create innovative solutions. Secondly, the choice of the municipal offices has been limited to those that make use of crowdsourcing. Thirdly, during the selection of the study subjects, it was considered that to present a complete picture of crowdsourcing, municipal offices that use one of the types of crowdsourcing, according to the division by Howe should be identified. Taking into account all of the above premises, the research was carried out in the following four selected municipal offices, which make use of crowdsourcing. In the further part of the article, the municipal offices examined will be referred to as cases 1 to 4 - to facilitate the discussion. The number of offices subject to detailed exploration meets the requirements for case studies.

**Case 1. City of Lublin Municipal Office (an example of collective intelligence)**

Lublin is a city with district rights located in the eastern part of Poland. "Lubelskie Dobre Pomysły" is a crowdsourcing platform that was initiated and implemented in 2014 at the City of Lublin Municipal Office. Its main goal is to reach the largest group of inhabitants of the Lublin Province, who want to participate in the life of the city and have a real impact on shaping its image and development directions.

**Case 2. Capital City of Warsaw Municipal Office (an example of crowd creation)**

Warsaw is a city located in the central-eastern part of the Mazovia Province. "Otwarta Warszawa" is a crowdsourcing internet platform that was implemented from 4 May 2014 to 31 July 2015 by the City of Warsaw Municipal Office. For this initiative, the then deputy director of the Social Communication Center, the unit responsible for "Otwarta Waszawa", received in 2014 the international award: "C4F Davos Awards (Communication for Future Davos Awards)" in the "Image of the Future" category.

**Case 3. Municipal Office in Dąbrowa Górnica (an example of crowd voting)**

Dąbrowa Górnica is a city with district rights located in southern Poland. Since 2013 the Municipal Office in Dąbrowa Górnica implements crowdsourcing through the "NaprawmyTo.pl" platform. Thanks to the portal, residents can report defects or problems in the following categories: infrastructure, security, buildings, nature, and others. The people making the notifications can then follow the execution status of a given alert.

**Case 4. City of Krakow Municipal Office (an example of crowdfunding)**

Krakow is a city with district rights located in southern Poland. In 2017, the City Green Board, a municipal organisational unit of the City of Krakow Municipal Office, joined the students' project of the Jagiellonian University called "At the corner of Dekerta Street", which assumed the creation of a pocket park and butterfly garden on the corner of Dekerta and Walowa streets. To this end, a fundraiser was launched through the crowdfunding platform PolakPotrafi.pl (<https://polakpotrafi.pl/projekt/na-rogu-dekerta>).

**2.2. Data selection and measurement**

Two research methods were used in the research: the interview method and the method for examining documents. Data triangulation allowed for ensuring an adequate level of reliability and reduce the level of inference errors and to achieve the level of saturation of the theory. As presented in the table, the research was based on primary and secondary data sources: a) free interviews with representatives of the municipal offices; b) studies and reports on crowdsourcing, websites of crowdsourcing initiatives, press articles dedicated to these initiatives and strategies of the municipal offices under study (table 1).

**Table 1.** Overview of data collected

Data sources	Case 1	Case 2	Case 3	Case 4
Primary data: They were used to grasp, understand the experiences of the offices studied in learning by using crowdsourcing	1 interview: R1: Secretary	3 interviews: R2: Vice-Mayor R3: Vice-Director R4: Chief Specialist	2 interviews: R5: Deputy Head R6: Chief Specialist	2 interviews: R7: Director R8: Manager
Secondary data: They constituted the basis for research construction	The office and crowdsourcing initiative websites, development strategy, 5 articles in the press	The office and crowdsourcing initiative websites, development strategy, 10 articles, 2 internal reports	The office and crowdsourcing initiative websites, development strategy, 5 articles	The office and crowdsourcing initiative websites, development strategy, 10 articles

Source: own elaboration.

The data collection process was carried out from January to April 2018. In general, eight free-form interviews were conducted during the research. The respondents participating in the research were representatives of the top management of the city office and persons coordinating the given crowdsourcing platform. All these people were involved in the crowdsourcing initiative in the municipal offices under examination. Interviews were carried out at the offices of cities and lasted from 60 to 120 minutes. With the consent of the interviewees, all interviews were recorded. Subsequently, they were transcribed.

### 2.3. Data analysis

The basis for data analysis is the interpretation approach. Its choice was the desire to discover and understand organisational learning using crowdsourcing from the perspective of key actors involved in the process. Such an approach requires comparability and detailed descriptions, which is consistent with the desire to understand experiences in the field of organisational learning using crowdsourcing. For this purpose, a narrative analysis was used, which is a systematic analysis of personal experiences and meanings that the active participants of a given event built. Narrative analysis is an interpretive technique that focuses on stories and narratives where people talk about their experiences. Its purpose is not to check whether their experiences are real, but to try to answer the question of how and why they create a narrative.

## 3. ANALYSIS AND RESULTS

### Case 1 – collective intelligence

In the municipal office that uses collective intelligence, the idea of using crowdsourcing resulted from the desire to try and experiment. In the interview, the respondent said: "In our activity we have participated in certain programs related to, for example, the examination of administration functions in general, the implementation of administrative processes by the municipality, and the creation of

certain management models in these areas" (C1.R1). The above statement indicates that in the case of collective intelligence, intuition is associated with a desire to imitate and reach for new solutions tested and used by others. This goes in line with the conceptualization by Crossan et al. (1999), where intuition is the process of an earlier recognition of models. The next process, interpretation is a conscious explanation, expression and discussion of ideas and insights with other members of the organisation. We are talking about collective activities, dialogue, discussions, meetings or other means of communication. Common knowledge is the basis for joint action: "(...) this idea was created to show it to some extent and outside, to create areas in which not only office employees can be located, but also to use this social activity in a sense, aggregate and try to use all the data that is there" (C1.R1). The basic feature of integration is the mutual understanding of members in a group [5]. It focuses on updating ideas through collective actions and common practices. Communication and cooperation are of key importance here. Communication not only allows learning, but also allows to retain what is the result of the learning process and pass on the knowledge thus obtained [5]: "Here, with over a dozen years of activity, we have worked out together in the office some reliable mechanisms of social participation, participative management, participation of inhabitants in specific activities, suggestions, and solutions. And we are trying to develop these models more and more, of course with a dose of humbleness, whether we take into account to find a formula and the form of reaching the largest group of people, because we also noticed at some point that a certain group of people participate in the consultative meetings, also a certain group of people responds to certain information and expectations of the local community" (C1.R1). Institutionalization, the last process in the 4I model, refers to embedding in organisational systems and procedures what has been worked out during learning. This allows the organisation to root knowledge, regulating its activities and using what the organisation has learned so far: "(...) these tools were used to modify, monitor, develop or modify and change the procedures that are still alive, which are constantly adapted to the needs" (C1.R1).

### **Case 2 – crowd creation**

Intuition as a process is most often triggered by external stimuli. It may be important to have the competence and personal experience of employees that will allow the implementation of new solutions. This means that the organisation should want and be able to redefine its current course of action, discover hidden problems, using its past and employees' competences. Which is consistent with the findings of Murray and Donegan [10], [13]. This gives an opportunity to reflect on the organisation's past, which is key to the way it will act in the future. Expanding knowledge about problems allows the interested parties to cover hidden problems and link them to previously unresolved issues. As part of intuition, language and creating cognitive maps are also important: "first of all, he made us realize how important conversation is and creating forums for conversations with the residents and their inclusion" (C2.R4). In the case of interpretation, crowd creation for the office is not "art for art's sake", but it is "an interesting mechanism for working on some processes of discussing a local plan, budget, or greenery" (C2.R2). The Office states that "the administration at every level is established to act for the residents and citizens. To act for them (...). Therefore, the administration of every level, aware

of such a functioning of the human mind, should strive for the widest possible publicizing of information at the earliest possible stage of each project, trying to make the decision-making process as transparent as possible (...). Thanks to this, we will gain substantive knowledge reflecting real needs and real problems ([www.konsultacje.um.warszawa.pl](http://www.konsultacje.um.warszawa.pl)). As part of a crowdsourcing initiative, city offices included other entities to collaborate, among others the municipal office's auxiliary units, but also academic circles: There were voices that after implementing crowdsourcing, the willingness to collaborate increased: "establishing new quality contacts with employees from offices and municipal units on other, innovative, full of openness and special kindness and subsidiarity level compared to routine work. We now know who to call, for example, with a request for advice on new ideas and simply support the substantive work" (C2.R4). As it has already been mentioned, institutionalization takes place when new activities become part of the organisational routine and systems [5]. The surveyed office is of the opinion that crowdsourcing has not contributed to major changes in the municipal office and is rather the result of changes: "it's hard to say that something has changed dramatically through crowdsourcing. It can be said that the consequence of the fact that the city is changing, was that at some point we reached for crowdsourcing" (C2.R2).

### **Case 3 – crowd voting**

In the third case, the desire to implement crowdsourcing resulted from the previous experience of the office connected with involving the residents in co-deciding and co-managing the city: "it practically started here in 2008, when the agreement was created named Together for the City (...). We wanted to involve the residents in long-term co-decision (...) the mayor had always wanted to listen, he wanted to talk to the inhabitants" (C3.R5). The units share intuition with others and engage in collective interpretation, which facilitates collective understanding. The case examined included broadly understood stakeholders: "(...) the basis was to obtain information about problems occurring in public space. The next thing is expectations, we know what the residents want, what they care about. They will tell us what we should do. This does not mean that the residents get what they want. Thanks to that we have knowledge about security. People want to inform us about what is happening in the city" (C3.R6). In the studied case of the crowd voting, the basis for integration was understanding: "We wanted to develop certain rules. We developed a way of communicating with the residents and including them in matters that concern them. Together, we understood that it would not be easier for us to act according to common, clear and accepted principles" (C3.R5).

### **Case 4 - crowdfunding**

For the office under study, the aim of the crowdfunding endeavour is, above all, commitment and to involve residents: "... because if we want, for example, good quality projects in the civic budget, we must show them projects from around the world that they did not hear as laymen and in Poland they have no way of seeing them, so that they could have such a nice project, for example a playground for adults submitted to the budget" (C4.R8). In addition, attention is paid to the encouragement and inclusion of the young generation to and in action and the use of its potential and willingness to act: "The younger generation is much more aware

of this in terms of thinking, I am also responsible for what is around. And it's cool, you just have to support them" (C4.R8). Analysing the experience of the examined office, it can be concluded that cooperation with widely understood partners is comfortable for them. Often, without cooperation with other organisations, they would not be able to start a crowdsourcing initiative: "(...) from the point of our knowledge, it is not possible for the institutions themselves to apply for these funds, as if in a sense they initiated crowdfunding campaigns. There is no way we can initiate crowdfunding as an institution ourselves and also apply for funds" (C4.R8). Crowdsourcing has enabled the office to meet the expectations of residents, draw conclusions, and make improvements to activities performed in the future: "thanks to the fact that they show the office employees what they expect, what they would like to improve and what to correct – the employees can modify their way of working and functioning" (C4.R8).

## CONCLUSION

This article is a voice in an important discussion on a new paradigm that combines crowdsourcing with organisational learning. It is intriguing and at the same time important from the point of view of creating the theory and practice of managing public organisations. Based on the assumptions of the theory of scientific revolutions [8], the paradigm is characterized by the fact that it leads to the solution of the problem and constitutes a historically variable *consensus omnium* of the community of researchers of a particular discipline [15]. Organisational learning is recognized in the literature as an "alternative paradigm by which systems can change" [4]. In addition, organisational learning offers an alternative paradigm by which systems can change, thus permitting us to redefine the economy and society. Our research shows crowdsourcing as the basis for the emergence of a scientific concept, and hence the organisational learning paradigm. The results show that regardless of the type, crowdsourcing is perceived as an adaptation to changes in the environment and a contribution to changes in practices. First of all, the idea of crowdsourcing was created out of the desire to imitate (in the case of collective intelligence) as well as the openness and experience of managers (in the case of crowd creation, crowd voting, and crowdfunding). This is identical with the findings of Crossan et al. (1999). It boils down to the fact that the expert origin of intuition is a process of prior model recognition. Secondly, interpretation is the process of organisational learning, in which individuals verbalise or implement their own observations and engage in collective understanding, in particular: the inclusion of stakeholders (collective intelligence), establishing cooperation of all departments (crowd creation), joint action (crowd voting), and the development of the society's potential (crowdfunding). Thirdly, integration comes down to a common understanding of members in a group [5], [1] and involves a change in collective understanding at group and organisation level. The municipal offices studied declare that knowledge acquired from virtual communities using crowdsourcing is useful and possible to use in everyday work (collective intelligence). Fourthly, institutionalization comes down to taking routine actions and embedding them in organisational systems, structures, procedures, and practices. The surveyed offices declare that the knowledge acquired from crowdsourcing has contributed to the modification of organisational procedures (collective intelligence), increased crowd satisfaction, technological improvements

(crowd voting) and openness to improvements (crowdfunding). In this way, the obtained results of empirical research give rise to the recognition of crowdsourcing as a new, emerging paradigm of organisational learning, regardless of its type. Summing up, crowdsourcing in the learning process of public organisations is a completely new approach [3], which, due to the development of information technologies, the social media, and the stakeholder model, will probably gain on significance and may become a new paradigm of organisational learning in the future.

## ACKNOWLEDGEMENTS

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## EMPIRICAL RESEARCH FOCUSING ON THE COMPETENCIES OF HOTEL MANAGERS IN PRAGUE

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### ABSTRACT

The main aim of the study is to determine, assess and compare three different viewpoints of hotel managers in Prague, educators and bachelor students from IHM and evaluate their expectations and perceptions concerning crucial competencies necessary for hotel entry-level managerial positions [2]. Surveys were compiled in order to collect data from hotel managers and students. In addition, the survey prepared for students examined their perceptions regarding contribution of hospitality management (HM) program at IHM to development of such important competencies. A total of thirty-two hotel managers and twenty-six students participated in this study and revealed their expectations. The results of this study indicated some discrepancies between current expectations of hotel industry and expectations of educators at IHM. Findings of the study may be possibly valid and applicable to other hospitality management programs [17] in Czech Republic or further close countries and to other graduate students since expectations of Czech hotel industry may be comparable to them. Survey research method was used in order to identify expectations of hotel industry managers and bachelor students. The study besides seeks to find out whether curriculum [11], of IHM hospitality management program is able to meet the current demands of hospitality industry and its hotel managers in Prague and to satisfy and enhance prospects of students. Moreover, the study should be of value to all aforementioned stakeholders.

**Keywords:** competency, competency model, management, hotel management

### INTRODUCTION

The identification of necessary managerial competencies needed by hospitality graduates has received increased attention in recent years and has been well documented for example by Tas (1988), Sandwith (1993), Kay and Russette (2000), Nelson and Dopson (2001) [13]. According to World Travel and Tourism Council (WTTC) [26], travel and tourism industry is exceedingly progressive and is expected to generate \$ 851 billion in revenue with 16.1 million jobs by 2017 [14]. Hence, without a doubt travel and tourism has become very prospective and attractive sector that lures many students to work and develop their career right in this industry. This fact has created or increased interest of institutions and universities to develop hospitality management programs [15]. As a result, the number of hospitality management programs has increased significantly over the past 85 years since the first hotel administration program appeared at Cornell University (Guide to College Programs, 2004), [21]. Many institutions with hospitality programs realize that in order to increase successfulness and career prospects of their students it is significant to develop curricula that will respond and meet industry's expectations and demands. Gehrels [5] have identified that industry professionals perceive that many hospitality education programs provide students

with outdated information with little effort to increase cooperation between them and industry representatives [14]. Therefore, the greater is the necessity to thoroughly analyze expectations and demands of hotel industry. There have been numerous studies conducted that sought to determine expectations of hotel managers, educators or students, some of them had even identified expectations of these three different viewpoints simultaneously by Chung- Herrera, Enz and Lankau, 2003 [2]. Certainly, detecting and identifying expectations of hotel representatives create various benefits not just for educators and institutions with hospitality management programs [9], who can adjust curricula accordingly but also for students who can develop or enhance essential competencies necessary for hotel managerial positions based on industry's demands.

## METHODOLOGY

The main purpose of the Introduction section was to explain the overall aim of the study research and to give explanation of rationale for undertaking this study. The literature review provided appropriate literature background available that support and clarifies aims of the research [22]. Methodology chapter explicates what has to be done in order to achieve the aim of the research and provides information on what procedures had to be undertaken to come up with the research results [4]. The Methodology part will also provide an explanation of research aim and clarify the methods for data collection and analysis [12]. The aim of this study is to determine and compare expectations of Prague hotel managers regarding essential competencies necessary for managerial positions, expectations of educators from Institute of Hospitality Management in Prague (IHM) that are reflected in the hospitality curriculum [11] and expectations of IHM students and their perceptions on how hospitality management program at IHM contribute to development of such important competencies [6]. This chapter describes how the research was designed and carried out and encompasses following sub-sections: research instrument, population, sample selection, data collection, and data analysis and response rate. Research approach used in this study is deductive, since it tests existing theory and tries to determine research results based on existing competency model of Chung-Herrera, Enz and Lankau [3] and quantitative since it generates numerical data. Survey research was used as research strategy with 110 surveys successfully sent to hotel managers in Prague, 25 to graduate students at IHM of hospitality management program in English and 35 surveys were sent to IHM graduate students of hospitality management program with instructions in Czech [15]. The reasons why survey research was used as research strategy are following: enough contacts of representative sample were obtainable, previous well-elaborated studies were available that used this method and also using of survey method represents benefits in terms of processing statistical data [25]. As a research strategy of this study can be also deemed comparative research strategy, since the study research seeks to discover discrepancies and explain possible differences between expectations of hotel managers, hospitality students and educators from IHM [9].

## RESEARCH QUESTIONS

Research question is an organizing element that narrows topic area and guides every aspect of the research project including the literature research, the design of

the study, data collection, data analysis and interpretation of results in Santiago, 2009th. This study addresses and answers following research questions:

What are the expectations of hotel managers in Prague regarding essential competencies necessary for future graduates aspiring for hotel managerial positions?

Are there any gaps and discrepancies between expectations of hotel managers in Prague and expectations of educators at IHM? If yes, which specifically?

How and to what extent does IHM hospitality program in English contribute to development of such important competencies?

## **RESEARCH OBJECTIVES**

The following research objectives were formulated in order to answer the research questions and thus achieve the aim of this study:

1. Describe demographic profile of hospitality leaders (hotel directors and managers) of four and five star hotels in Prague including: gender, age, level of education, position at the hotel, department of performance, length of hotel experience and classification of the hotel of performance.
2. Determine and assess Prague hotel manager's expectations regarding essential competencies and qualifications that ought to possess future graduates with the intention of becoming successful "entry-level" managers.
3. Analyze curriculum of hospitality program at IHM and determine what is being taught. Determine expectations of educators from IHM who are compiling curriculum.
4. Ascertain whether there are any discrepancies and gaps between current expectations and demands of hotel industry and expectations of IHM.
5. Describe demographic profile of bachelor students in hospitality management program at IHM including: gender, age, academic performance, current employment at the hotel and work experiences in hotel industry.
6. Detect student's point of view and find out which particular competencies do they find most important.
7. Define whether bachelor students of hospitality management program at IHM consider this study program as contributing and assisting in achieving essential competencies currently expected by hotels managers in Prague.

## **SIGNIFICANCE OF STUDY**

The significance of this study is that it will create several benefits and values for different stakeholders of this study (educators, students and hotels). Principally, findings may generate advantages for students, especially in Prague. By knowing current expectations of hotel industry regarding essential competencies for "entry-level" managers, graduates can enhance their preparedness and focus on competencies that they are lacking behind. Graduates become more desirable and sought-after due to possession of exact skills and competencies necessary for today's successful penetration into hotel industry [24].

Secondly, educational institutions and universities with hospitality programs may reap the benefits too. Based on the findings educators may adjust and improve curricula according industry's expectations and enhance the potential for their students' success [22]. Readjusted curricula may meet needs of graduates and demands of markets they are entering [11]. Results show essential competencies necessary for graduates who want to hold managerial positions at the hotel expected by hotel managers. In addition, students reveal how they perceive the hospitality management program at IHM contributes to the development of such significant competencies. Thirdly, hotel managers may benefit as well, by revealing current expectations hotels can anticipate well-prepared graduates which can certainly increase quality of hotel services.

The survey was sent to managers from different departments: Executive Office, Human Resource and Training, Finance and Accounting, Marketing and Sales, Rooms Division, Revenue Department or Reservation Department [19]. The reasons why solely four and five star hotel managers were chosen as appropriate sample are following:

- Representative number of email addresses was available specifically from managers from luxury and first class hotels,
- For students may be more beneficial and attractive to be aware of expectations of managers who work in four and five star hotel, since their expectations may be higher and it is better to be prepared for the highest criteria,
- Students equipped with necessary competencies expected by luxury and first-class hotels can more easily satisfied needs and demands of hotel recruiters from other lodging facilities (one, two, three star hotels...).

Secondly, the target population for this study was bachelor students of Hospitality Management program taught in English and in Czech language at IHM. The survey prepared for students was sent via email through IS (IHM's Information system) to all 25 students studying Hospitality Management in English. Another target sample for this study was bachelor students studying hospitality management in Czech, from all 176 (N = 176) students, the survey was sent via email through IS to 35 students selected based on systematic random strategy where each fifth person was chosen. Due to the sample technique used, the results should be representative within the population of IHM students. The reasons for distributing survey to two different groups of students studying the same program, but instructed in two different languages (English and Czech) are following:

- The results may provide valuable comparison and beneficial feedback to IHM on which program is more successful regarding providing and developing essential competencies to students, which program do students perceive to be more effective and helpful or whether there are some differences in perceptions of Czech and English program students,
- Since the bachelor students attending hospitality management program taught in English study the pilot program, it is essential to determine how their perceptions differ from perceptions of Czech students.

- **DATA COLLECTION**

Demographic profile of hotel managers included following characteristics: gender, age, level of education, type of hotel position, type of hotel department where respondents work, length of working experience at the hotel and classification of the hotel where respondents work [23]. Demographic profile of students included information about gender, age, employment at the hotel and length of working experience in the hotel industry, if any. Demographic profile revealed some useful and interesting findings such as: the most frequent level of education that managers acquired (beneficial for students to know if hotel industry prefer candidates with bachelor or master degree), compare it to length of necessary working experience, the average age information and so forth.

The second part of survey consists of list of competencies based on leadership-competency model developed by Chung-Herrera, Enz and Lankau [3], have modified the competency model, based on the feedback from the pilot study, which reflects hospitality-specific behavior [22]. These authors have created final competency model that consists of 8 overarching factors, 29 dimensions and 99 specific behavioral competencies. The competency model used in this study was adjusted and reduced relevantly and just 29 specific behavioral competencies were chosen, each standing for one dimension (see Table 1).

**Table 1** List of Competencies Used in this Study

<b>Essential competencies:</b>
1. Follow continual learning and self development
2. Be able to adapt to changing circumstances
3. Consider customer needs when making decisions
4. Establish strong relationship with stakeholders
5. Anticipate obstacles and develop contingency plans
6. Monitor progress of others
7. Perform re-engineering when necessary
8. Encourage others to express their views and opinions
9. Listen carefully to others
10. Take a stand when resolving important issues
11. Select leadership style most appropriate for the situation
12. Promote quality of company's goods and services
13. Address and work through conflicts
14. Write comprehensively and effectively
15. Promote respect among employees

16. Consider a broad range of factors (internal, external and trends) when solving problems and making decisions
17. Give other the authority necessary to accomplish their objectives
18. Act in ethical manner
19. Manage time to ensure productivity
20. Build networks with people inside and outside the hotel
21. Present ideas in convincing manner
22. Take risks when appropriate
23. Examine and monitor trends in the hotel industry
24. Get other interested and involved in the change process
25. Know the strengths and weaknesses of competitors
26. Promote teamwork among groups
27. Support community activities
28. Train others in skill development
29. Recognize and take advantage from strategic opportunities

Source: Adjusted list of competencies based on leadership competency model (Chung-Herea, Enz and Lankau, 2003).

The “language” of competency model- its particular names of competencies was also simplified in order to facilitate understanding of competencies for hotel managers who are not native speakers [7]. The tailor-made list of competencies was selected based on own perception of relevance regarding the most essential lodging competencies. The list of competencies was adjusted and shortened in order to develop the survey that is less time consuming for managers who would be more willing to respond and thus increase the response rate. The hotel managers were asked to rank important competencies and reveal how essential these competencies are for hotel graduates with the intention of becoming successful hotel “entry-level” managers.

A seven-point Likert-type scale with the following response choices was used in the questionnaire:

- 1 = mostly unimportant,
- 2 = somewhat important,
- 3 = unimportant,
- 4 = neither important nor unimportant,
- 5 = important,
- 6 = somewhat important,

- 7 = mostly important.

A seven-point scale was used instead of five-point scale because it is more precise and it provides more insights about the perceptions. The second part of survey prepared for students comprises from two questions: first part inquired students to rank 8 competency factors (self-management, strategic positioning, critical thinking, implementation, communication leadership, industry knowledge and interpersonal skills) from Chung-Herrera et al. competency model [3].

Students supposed to rank these competencies according to seven-point Likert-type scale where:

- 1 = mostly disagree,
- 2 = somewhat disagree,
- 3 = disagree,
- 4 = neither agree nor disagree,
- 5 = agree,
- 6 = somewhat agree,
- 7 = mostly agree.

The graduates ought to evaluate whether hospitality management program at VSH contributes to the development of these essential competencies. Simply, the questionnaire tried to determine whether they agree or disagree that they have acquired through the hospitality management program these competencies [20]. The second question tried to determine the student's own opinions. Graduates should again rank 8 aforementioned competency factors according to seven-point Likert-type scale and state how important these essential competencies are for future graduates with the intention of becoming successful hotel "entry-level" managers. The scale in this section was constructed in the following way:

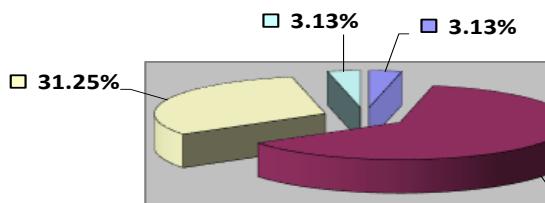
- 1 = mostly unimportant,
- 2 = somewhat important,
- 3 = unimportant,
- 4 = neither important nor unimportant,
- 5 = important,
- 6 = somewhat important and,
- 7 = mostly important.

The survey was prepared in English and Czech language and sent via the email. The results may bring interesting findings regarding two possibly different perceptions of Czech and English students.

**Table 2: Distribution of Hotel Managers by Sex and Age (N = 32)**

<i>Characteristic</i> %	<b>F</b>
<b><i>Sex Distribution</i></b>	
Male <b>53.13</b>	17
Female <b>46.88</b>	15
<b><i>Age</i></b>	
18-24 <b>3.13</b>	1
25-34 <b>62.50</b>	20
35-44 <b>31.25</b>	10
45-54 <b>3.13</b>	1

Source: Author

**Chart 1 Age Characteristics of Hotel Managers**

Source: Author

**Table 3 Other Characteristics of Hotel Managers (N = 32)**

<i>Characteristic</i> %	<b>F</b>
<b><i>Level of Education</i></b>	
Secondary Education 31,25%	10

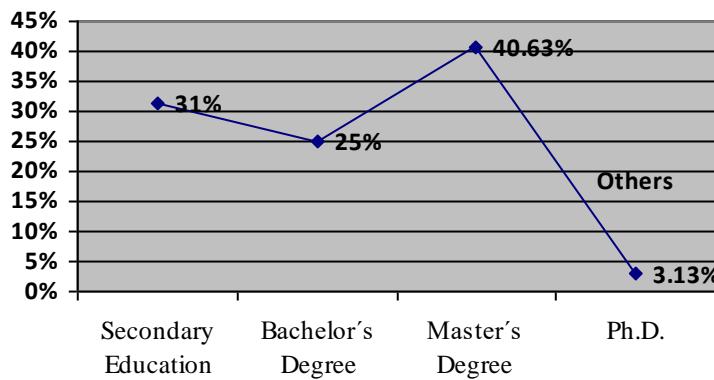
Bachelor's Degree 25,00%	8
Master's Degree 40,63%	13
Ph.D. 3,13%	1
<b><i>Hotel Position</i></b>	
Director 28,13%	9
Manager 68,75%	22
Others 3,13%	1
<b><i>Department of Performance</i></b>	
Executive Office 12,50%	4
Human Resource & Training 3,13%	1
Food & Beverage 15,63%	5
Marketing & Sales 28,13%	9
Rooms Division Department 15,63%	5
Revenue Department 3,13%	1
Reservation Department 9,38%	3
Others 12,50%	4
<b><i>Length of Working Experience in the Hotel Industry</i></b>	
Less than 1 year 3,13%	1
1 to 5 years 12,50%	4

## NORDSCI CONFERENCE

More than 5 years 84,38%	27
<b><i>Classification of the Hotel</i></b>	
4 star 18,75%	6
5 star 78,13%	25
Others 3,13%	1

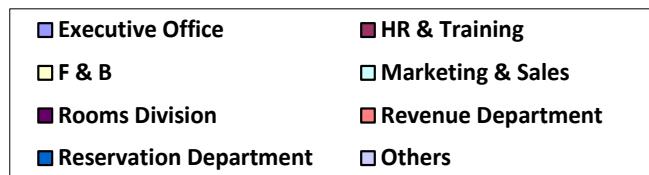
Source: Author

***Chart 2 Level of Education of Hotel Managers***



Source: Author

***Chart 3 Hotel Managers by Department***



Resource: Author

**Table 4** Demographic Profile of English Program Students ( $N = 16$ )

Characteristic	F
<b>%</b>	
<b><i>Sex Distribution</i></b>	
Male	4
<b>40,00</b>	
Female	6
<b>60,00</b>	
<b><i>Age</i></b>	
20 - 25	10
<b>100,00</b>	
<b><i>Current Employment at the Hotel</i></b>	
Full-time Employment	1
10,00	
Part-time Employment	3
30,00	
No Employment	6
60,00	

<b><i>Work Experience in Hotel Industry</i></b>	
Less than 1 year	1
10,00	
1 to 5 years	5
50,00	
More than 5 years	2
20,00	
No Working Experience	2
20,00	

Source: Author

## **THEORY / LITERATURE REVIEW**

The main aim of this study was to determine and compare expectations of hotel managers in Prague, educators and students from IHM regarding to essential competencies necessary for hotel managerial positions [18]. Although, there have been already few studies devoted to revelation of expectations of hotel managers, educators and students just minimum of studies can be effectively applicable within Czech hotel industry. Thus, in order to provide exact data regarding expectations of Czech hotel managers it was necessary to conduct tailored study. Several studies have been already investigating and focusing on expectancies from the perspective of all three stakeholders within one study. Enz, Renaghan and Geller as cited [14] have surveyed graduate students, faculty and industry representatives in order to identify essential skills for successful hospitality careers. It was one of few studies that examined expectations regarding hospitality competencies from viewpoint of three different stakeholders simultaneously. Another study, which also served as an inspiration for this thesis, was developed by Cheung, Law and He [2]. The authors have scrutinized point of view of three different stakeholders: expectations of Hong Kong hotel managers and educators regarding essential competencies and students' assessment of contribution made by their hospitality management program to development of such competencies [24]. The number of hospitality education programs has grown significantly over the past 85 years since the first appearance of the first hotel administration program at Cornell University (guide to College Programs, 2004), [23]. Indeed, over the past 30 years the number of hospitality degree granting programs has increased from just 41 in 1974, to over 170 in 2004 (Guide to College), as cited [21] "Hospitality schools have not only popped up at universities around the nation, but they have also thrived, as the hospitality industry has evolved into a bigger, more encompassing business, the educational programs at hospitality schools have progressed with it" Len Vermillion, 2010 [9]. On the other hand, such a great increase in hospitality education programs may cause wide variations among curricula styles and thus results in criticism from industry recruiters who hire graduates from these institutions [9].

## CONCLUSION

Research approach used in this study was deductive and quantitative. The population for this study were hotel managers working in four and five star hotels in Prague ( $N = 32$ ), students from English program ( $N = 16$ ) and students from Czech program ( $N = 10$ ). Regarding to sample selection sample subjects were selected based on purposive sampling strategy. The instrument used in this study was the survey (see Appendix A and B), surveys were sent via the email to hotel managers and students. **First part** of the survey consisted of demographic profile including demographic characteristics such as gender, age, level of education or department of performance for hotel managers and length of working experience in hotel industry or information about current employment at the hotel for students [17]. **Second part** of the survey consisted of list of competencies based on competency model of Chung-Herrera, Enz and Lankau [3]. The list of competencies used in the survey was adjusted in order to comply with hotel managers and students and increase the response rate. There were two different competency models compiled to accomplish aims of this thesis. List of competencies for hotel managers encompassed 29 competencies and students received list of competencies consisted just of eight main competency factors [16]. Each survey was sent via the email and each question within the survey was marked with answered required symbol in order to eliminate non-response issue. Regarding to data analysis, results were analyzed partially by the eSurveysPro.com (the Survey Software) that provided frequencies and percentage representation of all data [4]. Moreover, available results were processed by the author and weighted averages were provided as essential statistical means that helped to understand and compare data. The **third** objective was to describe demographic profile of bachelor students studying in English and Czech HM program at IHM in Prague. The survey revealed that most of the respondents were primarily between 20-25 years, all of them were studying full-time HM program and most of them had already some working experience within the field. Thus, they were considered to be able to provide solid feedback on the survey [12]. The results are shown in tables seven and eight in chapter four. The **fourth** objective was to define whether students at IHM consider its HM program as assisting in achieving essential competencies expected by hotel industry in Prague. The results collected through survey showed that students in general neither agreed nor disagreed that they have acquired through the program such competencies [17]. Students in both programs identified “industry knowledge” as competency most developed by HM program.

## DISCUSSION/RECOMENDATION

The findings investigated throughout this study may be of value for hotel managers, students and schools with Hospitality Management programs in Prague [19]. Educators who are compiling curricula of HM program may consider adjusting and improving them according to current expectations of hotel industry [10]. Hotel managers have revealed that competencies such as “self-management”, “communication” or “leadership” are appreciated within the industry [18]. However, students at IHM do not perceive that these competencies are developed by their HM program. Educators believe mostly “industry knowledge” or “critical thinking” are essential competencies for graduates since these competencies are

mostly incorporated in the IHM curriculum. There can be recognized several discrepancies that should be in the interest of IHM to reduce. In general, educators who communicate and collaborate with industry's representatives pursue industry's demands and expectations boost chances and career prospects of their students [15]. This section seeks to investigate possible suggestions that can increase cooperation between hotels and universities with hospitality management programs or propose ideas that can help hospitality education programs improve curriculums and courses that can meet demands of hotel industry [8]. Firstly, educators should realize the importance of cooperation between them and hotel representatives. The benefits should be recognized in order to increase motivation of mutual cooperation which creates remuneration for all people involved. There are several ways how educators and hotel industry can cooperate [1]. Educators may cooperate with hotel industry directly through their students and arrange internships for them with hotel managers who will present their expectations during the internship cooperation [20]. Educators should focus on competency-based education (CBE) that is according to Millar, Mao and Moreo [14]: "an institutional process that moves education from focusing on what academics believes graduates need to know (teacher-focused) to what students need to know and be able to do in varying and complex situations (student or workplace focused)." [14].

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## HUMAN RESOURCE MARKETING

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### ABSTRACT

The aim of the paper is the analysis of HR marketing tools in the Czech business environment and its comparison with the expectations of university students. Companies are currently facing many challenges. One of the biggest challenges is to get the talented and skilled employees with good knowledge, experience, and motivation for the job. The role of HR and line managers is to retain the talented people maintaining or increasing their performance and motivation. The term HR marketing combines personnel management and marketing tools. These tools are used to obtain the company's good reputation in the labor market, not only to ensure enough talented candidates, but also the interest of existing employees to stay in the company. According to Mosley [12] the HR marketing is an adoption of new forms of thinking. As well as the company tries to attract customers by unique products and services; it must attract also potential or existing employees. Employee value propositions [11] are the main values that the company creates and why the employees stay with the company. De Chernatony [4] considered the company values as a substantial idea of the employer brand and stressed its communication internally and externally. It is necessary to search the main factors that symbolize and personifies the company. The aim of the quantitative research was to analyze the expectation of Czech university students towards the potential employer. The research was conducted in 2017 among 180 students. Respondents stated the main criteria for selection of the employer. The most important factors for the students as potential employees were fair behavior, career growth and good working environment. Work – life balance was also mentioned as one of the most important factors. The output was compared with the existing HR marketing tools among and was formulated recommendations for the employers to make the brand more attractive for this group of candidates.

**Keywords:** *HR marketing, employer brand, employee value proposition*

### INTRODUCTION

The aim of this article on the theoretical basis of personnel marketing to analyze the requirements of university students and recent graduates to employers in search of employment; and to bring recommendations for employers interested in this target group.

The companies faces in the resent area many challenges. One of the biggest is the lack of talented employees. The unemployment rate in the Czech Republic is on the lowest level since 1989. The companies put stress on the methods and sources for attracting employees with high motivation, skilled and experienced. The orientation towards graduates increases significantly. This paper examines the importance of a good employer brand as a marketing tool towards potential

candidates. Not only the attraction plays the significant role but also employees' retention is crucial. Personnel marketing as a new tool for employee engagement uses many companies [6].

## **PERSONNEL MARKETING**

The term personnel marketing involves two tools such as marketing and personnel management. According to Kotler [10] the personnel marketing tools serve for getting a good company reputation and creation of a good brand. Good brand then attracts more of the talented employees and increases the motivation and engagement of existing employees.

Many authors describe marketing from a different view. Kotler [10] describes marketing as an entrepreneurship function that identifies the unfilled needs and desires. It is valid for customers as for employees. Mosley [12] found out that companies are looking for gifted people with the aim to get their interest. He also says that it is important to know that the talented people decide themselves for which company they would like to work or to stay. They are aware of their value and know the conditions in concurrence. The excellent company culture, corporate culture, and values can create the unique quality of the employer. As the company tries to get interested from their customers, so it has to impose the existing, and potential employees. The excellent employer brand can help. The shared values, company ethics, and behavior support the competitive advantage. The well-set company culture supports motivation, loyalty, and performance.

The goal of personnel marketing is to wake up in existing employers' proud, loyalty and engagement that can help to speed up the development and increase the attractiveness of the company. Mosley [12] considers as a necessity to establish the advantages of the company consistently, truthful and in alliance with the experience of the employees and other stakeholders. The harmony of the promises and real experience support the real brand of the company that will attract the talented candidates. Personnel marketing represents the new way of thinking that the companies have to use and develop more intensely.

People decide according to their actual needs. It depends on the stage of career, age, interests, and beliefs. If the company wants to attract the right candidates, it needs to understand the customers, in this case, the candidates. The company has to be able to empathize with the market and to offer the best option. The targeted communication towards candidates is necessary. The basis for the targeted communication is to create a so-called persona. Persona [8], in addition to demographic information also display the behavior of targeted people, show what they believe in, and especially know their motivation and intentions. Understanding, empathy, behavior in certain situations support the direct communication. To describe the persona is needed to find out what they think, do and what they feel, so to be able to understand their emotions and motives. Based on this knowledge the possible opportunities for the targeted communication. The purpose of the value proposition is to attract future employees whose values are closely aligned with the organization values [7].

The reputation of a company affects not only the total employer attraction and relationships to their employees but also the severe relationships with customers.

Customer relationship should not be purely based on a transactional level when a customer orders goods/services and the company delivers them. Between these bodies should take place a vivid communication leading to a closer relationship. This communication should be interactive and long-term [3]. De Chernatony [4] argues that the interaction between an employee and a customer is highly essential. It leads to the necessity of employee satisfaction and engagement. Heger [9] describes employee engagement as the intellectual and emotional attachment that an employee has to his or her work and organization. The engaged employee believes in the brand of the company. The company brand according to Mosley [12] is based on the company mission, quality, and uniqueness. The employer brand covers the package of economic, psychological and functional benefits associated with working for that company. A useful way to think about these benefits is to separate them out into two groups: functional attributes such as salary, benefits, health care coverage and leave allowances; and symbolic attributes like work culture, career development opportunities and the prestige of working for a well-known company [5].

The company culture plays the substantial role in employee engagement. The aim and object of shared and robust company culture is also an exceptional level of management motivation, loyalty, and performance. Also, a clear focus on the essential personal characteristics, such as simplicity, creativity, and agility, can provide the business skills that will ensure a significant advantage over the competition. The combination of these capabilities and differentiated identity helps to keep current employees, to arouse in them a proper pride and determination and, not least, it helps to attract the necessary talented candidates. All of this ensures a supply of unique services and products that the company offers to its customers [12].

Employer branding is fast emerging as a long-term human resource (HR) strategy to attract and retain talented workforce [14]. The attributes of the employer brand bear the fundamental nature of the brand and emphasize its physical and moral aspects. These attributes create the employer brand identity. Individual attributes of a strong brand of the employer according to the Management study guide (2017) are described below.

The first attribute is the relevance. It must meet the expectations of people and fulfill the expectations of candidates and existing employees. It is desirable to persuade stakeholders of the employers' qualities, to encourage interest in the company, as opposed to the other competitors.

Another attribute is the consistency that ensures communications between potential and existing employees in a way that does not deviate from the core and fundamental beliefs of the brand. It also ensures consistency in building trust and loyalty.

The third attribute of the strong employer brand is correct positioning or location. A strong brand should be positioned so that it has become the choice number one of the target group of people who will prefer over other brands. Some companies do not employ graduates and are therefore not the place to focus our marketing tactics on them. It is therefore desirable to have clearly defined employer brand positioning towards the desired target group.

Sustainability is the fourth significant attribute that makes the strong brand competitive in the future. Sustainable brand leads the company to innovate, which leads to the subsequent success.

Another attribute of the brand is employers' credibility. A strong brand should be based on reality and fulfillment of their promises. The non-fulfillment of promises leads to severe disruption of the trust and the collapse of the entire built brand.

The sixth attribute that a strong employer brand needs are unique. The employer brand has to carry difference and uniqueness to distinguish it from the competitors.

A strong employer brand must also be inspiring. The company inspires their surroundings. If the brand is inspirational and innovative, has a high potential to become successful.

The attraction is the latest and one of the most important attributes of a strong employer brand. The brand should be exciting and engaging. Potential and existing employees attract the commitment, which the company undertakes and the value it delivers [2].

Companies need to manage the employer brand actively because it assists in the creation of a company's service brand. In doing this, it is essential to deliver value to employees that enhance the level of employee satisfaction. It results in their identification with the employer, which may in turn positively influence customers' experiences in the employee-customer interaction [13].

Leslie de Chernatony [4] considers as a substantial the brand identity and its communication on the outside. It is necessary to search everything, what symbolizes and personifies the company how it acts to their customers and employees.

In the foreground is a vision of the brand, which gives a specific direction to the company in the future. Along with the vision is in the foreground the corporate culture that has the task of carrying a shared mental model and facilitate the dissemination and sharing of corporate values. It is, therefore, necessary to develop and support the mental model to develop the strategic positions on the market.

The total value of the employer brand can be converted into employee value proposition (EVP). EVP represents a set of associations and deals provided by the company in exchange for specific abilities, skills, and experiences that bring the employee to the organization. This term defines the basic menus, on which stands the building of employers' brand. This approach targets people in the company and their engagement and retention. The correct formation of the EVP enhances and maintains the key talents. This contribution but applies only in the case that EVP corresponds to reality and individual aspects of the value of their employers' brand and are not fictitious or exaggerated. The employees, therefore, must recognize and believe in the critical quality defined by EVP. If the EVP of the realistic, the employer can count on the committed and motivated staff who will treat their work as meaningful and be fulfilling [11].

Employer brand consists primarily of emotional and functional values, but the functional value is elementary to be imitated by competitions. The emotional area

of the brand cannot be copied, and so becomes the corporate culture an essential point for the differentiation of the employer brand [4].

The research examined the young generation, it means Generation Y. Their expectation from the future employer differs from the previous generations. The employers that decided to attract these young employees take into consideration their different approach to work and working environment. According to Barford [1] Generation Y views responsibilities as much less important than the previous generations, the same is valid for the importance of

Compensation. On the other hand the free time and career development is very important for them.

## **RESEARCH**

The research uses the quantitative method using the structured questionnaire using the Likert scale. The year of research was in 2017, the number of respondents 256. The research sample represents students and fresh graduates from five of the most prominent Czech universities. The research aimed to analyze the most important criteria for choosing the potential employer and suggest the approach to personnel marketing.

### **Research sample**

The age structure of the respondents was 20 – 28 years. 25 % of the respondents are in the age of 25. According to the gender, the women represented 69 % of respondents, men 31 %.

In the questionnaire, there was also included the question about the idea of their future employer. 52 % of respondents did not decide their future employer. It means that the companies can target their personnel marketing towards this group of candidates. For the companies that are interested in the employment of fresh graduates. Two third of them prefer working in the profit sector, 10 % in the public sector and only 5 % plan to establish their own company.

### **Main findings**

The individual criteria used in the research:

- Distance from home
- Working environment
- Career growth
- The possibility of further education
- Diversity of work
- Fair treatment
- Interpersonal relations
- Work-life balance
- Attractive benefits

- Financial remuneration
- Business ethics
- Company image and reputation of the company.

The results describe the table 1. The table shows the average results for each criterion according to the importance for the respondents using five points of Likerts' scale. The final number represents the average of the respondents' answers.

*Tab. 1*

Criteria	
Fair treatment	4.7
Working environment	4.6
Career growth	4.6
Interpersonal relations	4.5
Work life balance	4.5
Possibility of further education	4.4
Diversity of work	4.2
Company image and reputation	4.2
Financial remuneration	4.0
Business ethics	3.9
Attractive benefits	3.7
Distance from home	3.5

Source: own research

The most important criterion for the students and fresh graduates is the fair treatment. They expect recognition for their work and the sense of work. It corresponds with the new way of creating the employer brand and personnel marketing. The mission of the company and the added value for the stakeholders is crucial for their decision of their future employer.

Working environment influences the decision of accepting the job offer very significantly. Flexible working areas, well-equipped offices, possibility to break the work using fitness center or enjoying healthy lunch give positive points to the future employer.

Career growth is connected with more responsibility and more influence and freedom. These are the factors influencing fresh graduates and students. The employer, who can offer career growth is more popular than the competitors. It corresponds to the fact that the respondents in this sample prefer working in profit privately own companies. In corporations is more opportunities to career grow.

Respondents prefer further learning. It connects education and development with possibility the career growth.

Interpersonal relations play an essential role in the motivation of students and fresh graduates. They would like to work in the friendly environment surrounded by friends not only coworkers.

The respondents are not willing to devote their lives to work. They expect to have more free time than previous generations. It can cause misunderstanding and tense between generations at work.

The expectation that financial rewards are not as substantial as the other factors were also confirmed. The same we found with the range of offered benefits.

Knowing the Czech market the unexpected results came from the importance of the distance from home. The Czech people are resistant to changing their region of live. The research showed shift in this area. Young people involved in the research confirmed that the distance from home is less important than the other factors.

## **DISCUSSION**

Based on the research findings were created the main recommendations towards the potential employer by the creation of employer brand and personnel marketing.

The employer brand represents the primary values and mission of the company. The company brand should involve fair treatment, friendly working environment, and relationships. The values could be a part of the company ethical codex. The respondents pay the most prominent attention to the recommendation of the current employees. It means that the company should not only present their values, but they have live by them.

More stress in promotion should be put on the possibility of development and career growth than on financial reward and benefits.

Presentation of the company should be understandable, truthful, in line with the strategy of personnel marketing, while something surprising and of very high interest. The important thing is to focus the attention on the potential of the Internet for the presentation of employer brand. 89 % of respondents search for information through this channel.

## **LIMITATION OF THE RESEARCH**

The research was conducted only among university students and fresh graduates. The results can be applied only for the positions that are suitable for this type of candidates. The region was limited to the Czech Republic. There is a space to compare similar researches in different countries and recommend the approach to the graduates in multinational companies.

## **CONCLUSION**

The goal of the research was the analysis of the expectation of university students and fresh graduates towards the future employer using the quantitative approach. The primary goal of the research was to analyze the expectation of the university students and fresh graduates towards the future employer.

The expectation of different motivation factors of young generations was confirmed. The respondents prefer fair treatment, good working environment, and friendly atmosphere to financial reward and benefits. Even that Career growth supported by further education is also an essential factor. Based on the researched expectations were recommended steps towards creating employer brand and plan of personnel marketing.

Competitive advantage on the job market will bring a new form of thinking shaped by values, beliefs, and behavior of the company. The organizations must determine their quality, the essence of the working environment and atmosphere, and uniqueness by forming their employer brand. The important thing, however, is that the company is in its beliefs and subsequent behavior consistent.

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## HUMAN RESOURCE DEVELOPMENT IN EMERGING MARKETS: CASE STUDY OF SOUTH KOREA

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### ABSTRACT

The research refers to modern trends and approaches in human resource management in emerging markets. The article considers modern approaches to the development of key competencies of engineering personnel based on electronic applications. The advantages and disadvantages of using such applications in fast and dynamically developing economic systems are analyzed. The case of the use of modern teaching technologies and applications in Korean practice is given.

Author discusses industrial competence model in South Korea and human resource development methods within 4<sup>th</sup> Industrial Revolution. Different approaches and concepts are discussed. University-Industry cooperation applications and strategies are discussed; author analyzes competence assessment, creation and development systems in Korean Universities and high-tech industries.

Special case of competence development in growth economy is discussed; example is based on Korean companies' experience. Author shows aligning human resource development with labor demand and Korean model of factory-school-shelter cooperation. Different types of education are discussed, for example vocational education, lifelong trainings, training consortium for small and medium size entrepreneurship.

**Keywords:** *human resource development, South Korea, competence model, emerging economy*

### INTRODUCTION

Processes of globalization set for modern accounting entities a task of key positions forming. The most important objectives of global industrial companies are increasing their own resources for creating an effective competitive source in global environment. In particular, personnel policy of the company is the instrument of preserving personnel capacity of the organization, and it shall be reviewed from a line item of competence-based approach. New competitive advantages are based on core competencies and help global industrial companies to improve their economic relations; they also form the information society and integrate industrial companies into world economic space [1].

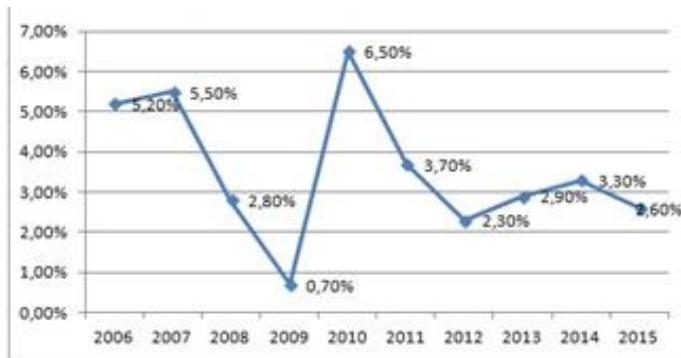
### EMERGING MARKETS AND ECONOMIC GROWTH OF SOUTH KOREA

For the last 20 years South Korea built an innovative ecosystem with a high share of high-technology sectors and small enterprises. According to administration of small and medium business of the Republic of Korea, in 2015 in the country there

were about 3 million small and medium-sized companies, 99,5% of total number of the entities. These companies — the most important source of workplaces, 87% of the active population of the country are engaged in them. In 2015 small and medium business provided a half of GDP and 43% of South Korean export. And a share of small business in general structure — 97% [1], [2].

Activities of the Korean incubators began in 1991 (on the basis of experience of technological incubators of Israel) and were initiated by the Korean institute of technologies. First private incubator (Jungbu Industrial Consulting Inc.) was created in 1993. In the same time the first national incubator (Ansan Business Incubator) opened. The majority of incubators were initiated by the government, and, despite crisis of 1997, promoted revival of national economies and development of national innovative system. Further for development of the regional industry and technology and successful revival of regional economies the Korean Association of science and technology parks as governing body of innovative processes in operation was created. The main programs became at this time: programs of a construction of infrastructure for a start-up of the companies founded on high technologies; special programs for laboratory a start-up of the companies; development programs of the ideas; future development programs of the entrepreneurship based on technologies [3].

According to the report of a research institute of Hyundai rates of potential growth of economy of Korea over the last 10 years decreased from 3,9% to 3,2%. So potential growth rates national of production decreased to 4,4% in comparison with 8,9% in 1991, 7,9% in 2000 and 5,8% in 2010. Decline in production and rates of a surplus of high technology production from 6,0% in 2006, to 4,3% in 2010 and to 2,1% in 2016 is noted. Decreases as well performance in service trade from 7,8% in 1991 to 2,9% in 2011 [4]. The actual growth rates of SK economy also decreased, according to data of the World Bank in 2015 growth rates of GDP of SK were reduced to 2,6% (figure 1).



**Fig. 1** Growth rates of SK GDP as a percentage

Source: The World Bank [9]

Today in South Korea many universities departed from the traditional functions to gain only knowledge. Most of them deal with issues of commercialization, intensively developing innovative business. In this sphere also began to show

activity and many research institutes. Development of these processes attracted interest and of various financial organizations and the consulting companies connected to processes of commercialization of results of Research and Development. As a result in South Korea constantly increase both expenses on science, and their share from GDP. For example, in 2004 they constituted 2, 64% of GDP that it was higher, than in many developed countries. At the same time the share of a public sector constituted 24, 5% of total amount. Expenses of a private sector and foreign investments – 75, 1% and 0,4% respectively. The share of an external source of the funds allocated to South Korea for Research and Development is at very low level (0,4%) that is much lower, than at France (7,2%), Great Britain (20,5%) having the similar sizes of the income on research activities [5].

## **HUMAN RESOURCE DEVELOPMENT TRENDS IN SOUTH KOREA**

It is necessary to take into account unique feature of the Korean management, which is to find the golden mean between two extremes: "a strong collectivism, all for the benefit of society, individuality is nothing" - a principle inherent in the eastern management models, such as Japan. And the other extreme - "absolute individualism, only personal goals, only personal growth," a vivid representative of this principle is America [6], [7]. Korean the management pays great attention to the corporate spirit, encourages loyalty to the company, but at the same time appreciated the professionalism and personal qualities of employees, which allows us to develop within and for the benefit of the organization talent. Most of human resource development programs are focus on 4<sup>th</sup> Industrial Revolution, so technical and smart competencies are required.

The adoption of the program "Intellectual (Smart) Korea" was caused by a wave of rapid spread in South Korea smartphones (smart devices) and smartphones in 2010, the so-called "Smart Fever" ("Smart Fever"). The state strategy of the "smart country" (Smart Country Strategy) implies the development of mobile Internet, creation of "smart" (smart) networks, and building on the basis of these networks of a new intellectual society [8].

One of the components of the South Korean strategy is The Smart Society is a Smart Work, paradise is of great interest to both companies and individuals, young people. Unified temporary construction of the working day in the country from 9:00 to 18:00 ceased to exist along with the spread mobile offices (Mobile Offices) and their conglomerates, work in the is carried out through smart devices. Most A typical form of organization of such work is collective software (software) "Group" (Gropware) [9].

## **COMPETENCE-BASED APPROACH AND GLOBAL COMPETITION OF KOREAN COMPANIES**

Modern researchers distinguish following classification in considering the professional competence:

- 1) Simple (basic) competence – it is seen in certain types of activity, formed on the basis of knowledge, skills, abilities, easily fixed;

- 2) The core competence – it is extremely difficult to account for it, it is storage of measurement, it can appear in all activities, and it reflects the attitude of the individual person and meets the global environment [10].

The process of organizational competence formation is an integral part of building a competitive strategy, so it is a basic step in the formation of core competence model. The main objective in the step of forming the organizational competence is definition of key organizational competence which forms the main competitive advantages (Porter's Model) [11]. In practice managers find a lot of problems using competence management in innovative companies. These problems are:

- The complexity of specialist involvement in other project. Usually the holder of the key competences does not want to share his core skills with other specialist;
- The indispensability of a highly qualified specialist and, therefore, control the complexity of competence is failed;
- A degree of lack of personnel interest is high, because it is long period to transfer knowledge in the project and format the key competencies.

The most acute problem faced with innovative organization, which performs complex design. One of the features of innovative companies is excessive requirements to the competence profile of key employees. This is due, no doubt, with the uniqueness of the products (and / or services), which are produced in the group projects. It is known fact that the "smart" company has a greater extent than the other players in the market. It depends on the professionalism of its key personnel and the effectiveness of their core (and hidden) competencies. It is possible (with some modifications) to use the special indicator to share the total costs in wage fund with the cost of the project or service, and it can be a criteria of a relationship.

The problem to determine organizational competencies as a source benefits is a compound of core competencies with individual. With this statement I can agree, because, for example, resource-institutional theory creates competitive advantage of the organization increasing using core competencies, which improve the level of values. Thus, the key competence is a special category of organizational competence. It helps innovative organizations to create and maintain a sustainable strategic competitive advantage. The main property of the key competence is to establish the usefulness of the product which is produced. If managers want to treat the core competence, they should provide a set of skills which must meet four criteria:

1. Producing value for internal and external users (customers). The customer for the innovative organization is the chief referee, who determines what a key competence is considered.

2. Skills must be unique and individual. There are differences between forced and distinctive competencies. A key competence is organizational value, so, to the opinion of managers and key specialists of the company, the resources for its development should be found. For example, the innovative organization can

dramatically improve the quality of customer service; make it above its average level in the industry with making its core competence.

3. Core competencies should ensure a competitive advantage during the long period. In defining key competencies process managers need to move away from the outer parameters of the product and consider how you can use the competence to produce innovation in this product.

4. Key competence should be long-term and unique.

To build a competence model of key employees for organization it is necessary to organize an algorithm of control system, for example, managers can implement role-playing instructions and establish competency cards. Usually, the guide role contains the following sections: a set of core competencies, responsibility (responsible for individual sections of the project and co-executor in any stage of the project), and the project targets (figure 2).



*Fig. 2 Samsung's activity matrix*

Source: [www.samsung.com](http://www.samsung.com) [15]

What is designing competence? Managers should find the moment when designing competence comes to the areas in which innovative organization must possess all possible resources or skills and create them from existing. Strengthening competence is adequately when innovative organization finds additional market segments and it is used with its existing capacities [12].

The change in the ratio of policies directly depends on the macroeconomic environment of organization, as well as it depends on the strategic orientation of the design organizations. Their willingness to sacrifice short-term income in exchange for a higher and more long-term period is important.

It is necessary to identify a number of factors that determine the choice of strategy. These factors are:

1. the level of development and the basic forms of market competition,
2. the ratio of the increase rate in the staff cost,
3. the active part of fixed assets,
4. respectively, replacing living labor,
5. the time factor,
6. the rate of inflation,
7. the structure of the consumer basket,
8. asset portfolio of innovative organizations,
9. government regulation economy and transport industry,

10. the priorities of industrial policy,
11. the provision of cross-sectorial re-distribution of capital and labor,
12. the development of innovative activities.

G. Hamel and Prahalad A. introduced new term "strategic architecture" to denote a competitive strategy [13]. Using the strategic architecture company can find the opportunities that it should increase immediately, for example, new channels, which you need to study today, new development priorities to be pursued at the moment. It will help managers to seize the future and market initiative. Thus, the strategic organizational architecture addresses issues that need to be taken today; it will help to prepare for the mastery of a significant share of future earnings in the arena of emerging opportunities. As a result, this approach is called "the concept of a market space" [13].

### E-TRAINING SYSTEMS IN KOREAN UNIVERSITY-INDUSTRY COOPERATION

Today, South Korea is a country of high technology; therefore automation of the distance education process is at a high level here. The experience of South Korea's educational system is classical. Currently, South Korea stands at one of the first places in the world in terms of the number of students among the population. South Korea uses an e-learning system in 80% of universities [14].

In South Korea, a country in which every second has a smartphone with access to the Internet, actively create and develop various new disciplines. Starting from cyber sport and ending with real cyber-universities. Every year, students in cyber-universities are more and more. And this is understandable, writing off everything for accessibility. For example, so people from a remote Jeju island can receive assignments, lessons and comments from skilled workers from the capital of Seoul. And if you move away from the beautiful "cyber-universities" sounding, you can turn to special companies, of which there are more than seven hundred in South Korea. The government actively supports e-learning, so the Ministry of Economy supports the development of the industry, and the Ministry of Education supports the e-learning program in regular education (Figure 3).

The screenshot shows a web-based e-learning platform. At the top, there is a navigation bar with tabs for 'Edu Status', 'Community', and 'Introduction'. On the far left, a sidebar titled 'Class Subject' lists several categories: 'KOREATECH Site', '2015-1', 'Discussions', 'Online Lecture', 'Announcement', 'Q & A', 'Material', 'Attendance', 'Assignment' (which is currently selected), and 'Exam Record'. The main content area is titled 'Assignment' and displays details for 'Assignment 1'. The assignment information includes: 'Submitting Method: Online', 'Published: 2018.03.29 11:06', 'Due Date: 2018.04.08 23:59', 'Late Submission: Not Allowed', 'Notify to Student: Yes (Notify the score only to the person who submitted the assignment)', and a 'Score: 10'. There are also buttons for 'Edit' and 'Delete' at the bottom of the assignment card.

**Fig. 3 Example of the electronic system of training (KOREATECH University, South Korea).**

Source: author

Advantages of using electronic applications in South Korean universities:

1. Adaptability to rapid changes in industries;
2. High dynamism of competences;
3. Independence from territories and regions;
4. High demand from listeners and students.

5. Disadvantages of using electronic resources:

6. High development costs;
7. Threats to cyber-attacks;
8. High requirements for the professional competence of teachers.

Such opportunities are usually attributed to: the implementation of immediate feedback (interactive learning), visualization of educational information, the possibility of processing information using modern information technology, the possibility of organizing virtual laboratories, the ability to model complex, expensive or dangerous real experiments, the possibility of using a computer modelling (analytical and simulation), the ability to present training content with varying degrees of detail and different levels of cognitive complexity, depending on the current level of mental development of the student, the choice of individual pace of work, the choice of the way information is reproduced depending on the type of dominant perceptual modality of the learner, the possibility of self-diagnosis of educational achievements and self-control and others.

## CONCLUSION

Rapid economic growth and effective investments in education and human resource development help Korea to found unique style of management and personnel development.

The profile of the key competencies in industrial organizations endorses the program of training and develops the key staff. Company must provide the trainees with necessary handouts and an opportunity to try out the standards of behaviour which are required in the development process. This means that development activities should provide the opportunity to apply the techniques which are studied in a variety of work situations. According to this task, the development activity should include a range of techniques, such as workplace training and special courses with the assistance of mentors.

Electronic applications allow dynamically developing missing competencies and meet industry standards, but they require considerable skills and costs in the development and operation.

It is thanks to state support and huge investments that South Korea is the absolute leader in the development of e-learning.

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# NEW APPROACH TO INNOVATION PROJECTS

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## ABSTRACT

Innovation projects are important for long-term development of companies. New approaches join basic conditions enabling realization of projects, using basic strategy. This strategy uses the right culture, proper cooperation and sufficient abilities optimally covered by capital investment. This article would like to focus on importance of psychological safety of teams, who realize innovation projects.

**Keywords:** *Innovation, Project, Capital, Culture, Cooperation*

## INTRODUCTION

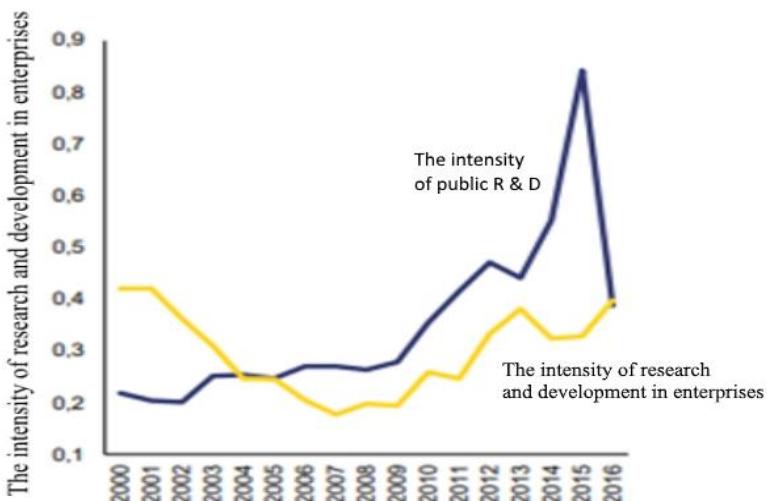
Being innovative is now a basic condition for existence of businesses on the global market. An organization's ability to innovate is therefore essential for success in today's complex and dynamic environment. In recent years, researchers in Knowledge Management and Innovation have used different approaches to explain how knowledge creation can contribute to better innovation performance. The main result of this research is the conclusion that product and process innovation is the result of a continuous learning process [7], [2].

The innovation process itself is a knowledge-intensive activity that is based on two interconnected processes of creating new knowledge and using it. As some authors emphasize, the superior ability of an organization to build and manage system knowledge can support the success of innovation processes [7].

Innovation is considered a political priority at both European Union and Member State level. Various measures and support activities are implemented there. Their diversity reflects the diversity of specific conditions, cultural preferences and political priorities in the individual Member States. These innovative policies, however, in its most important principles coincide. This is evidence that innovation policy is increasingly being realized as the real task of the whole of Europe. The disparities between the Member States, despite significant interventions, are very large.

Slovakia's ability to innovate may still be regarded as inadequate in comparison with other European countries. The country faces many challenges, including the low efficiency of the public system, development, and innovation. Furthermore, there is a strong need to support innovation in SMEs and targeted incentives for technology transfer.

According to Eurostat data, Slovakia's spending on research and development fell by one-third last year. While they accounted for 1.18 percent of GDP in 2015, they were only 0.79 percent last year. Slovakia has joined the end of the EU when countries like Croatia or Serbia have overtaken it.



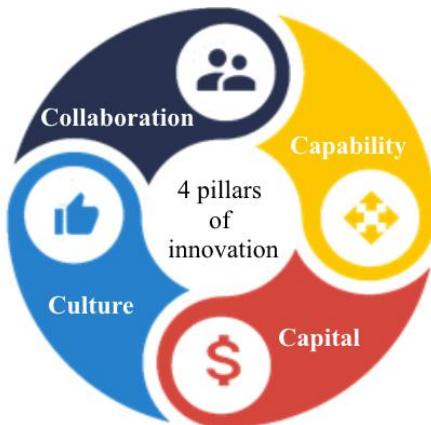
Source: European committee, 2018

**Figure 1** Investment in research, development, and innovation by sector R & D intensity (R & D expenditure as% of GDP)

One of the main reasons for this is the extremely slow take-up of EU funds for research and development. While projects funded from the old challenges have ended, new projects have not broken out. At present, companies are only pursuing development activities within their own perspective, which are limited by their own resources. As the data from Eurostat shows, corporate R & D in Slovakia grew moderately in 2016, but government spending declined.

#### 4 PILLARS OF INNOVATION

There are many different theories of what they need for the proper functioning of innovative projects in the organization [2]. Some theories show the issue of innovative projects as a complex and intangible system. However, the aim is to simplify this view. Very interesting is the approach presented by Scott Thomson from Google at the DevOps Talks Conference 2017 conference held in Melbourne, Australia. As part of his presentation showed four key pillars necessary of innovations. These basic pillars are interrelated. The first pillar can be described culture specifically pro-innovation culture. Within such a culture combines the openness of the company and receive new ideas to established processes functioning in the company. The second pillar is cooperation. The goal of adequate co-operation is to create working people capable of producing innovations. The third pillar is the collaboration. Collaboration to implement these innovative projects not only on the technical (professional) but also on the organizational side. The fourth pillar is the capital. Capital and ways to obtain enough resources to successfully implement innovation. The whole approach can be shown in the figure below.



Source: the author

**Figure 2** 4 pillars of innovation

### First pillar - Culture

The introduction of a pro-innovation culture is key to the good functioning of innovation projects. Reaching culture is crucial for processes that are important for product and service development to be successful in a competitive business environment. Unfortunately, many senior executives continue to focus on it to achieve its performance goals instead of progress. Many companies would like to create the right culture for innovation. This is one that encourages flexibility, creativity and risk-taking support [10], [9]. It is also because the most frequently mentioned barrier of ideas and innovation in an organization include inappropriate corporate culture. Among the elements of a pro-innovative corporate culture are: high tolerance risks, support for new ideas, joy and sense of work, and a sufficient number of innovative challenges [11]. The pro-innovative corporate culture we consider way interaction and communication of people who support changes constantly. The right pro-innovation culture manifests itself:

- increased work engagement,
- independence,
- creativity,
- a sense of belonging to the company.

To create a sustainable culture of innovation is also cooperation with external partners, suppliers or networks needed.

### Second pillar - Collaboration

For proper cooperation, it is necessary to set the conditions for the compilation of individual project teams, but also to ensure their adaptation to the functionality. For proper cooperation, it is necessary to set the conditions so that the innovation project teams can work together perfectly. In the context of Google Aristotle project, which began in 2012 and lasted five years, Google is trying to figure out how to create the perfect team and understand the effectiveness of a properly functioning team. In this project, they were collected and reviewed data on 180

Google teams. It is interesting that there was no correlation why one team was successful and the other not. And Google is inexorable in its conclusions. Conclusions build on hard data and thorough research work. They came from Google's internal data, but also from 50 years of psychological research in this area. The original goal was to find the ideal combination of personality types, people with different abilities and personal history, or the ideal combination of age, gender, and possibly sexual and racial diversity [6]. However, they have found that the only thing that demonstrates the effectiveness of the team is - the atmosphere and the mood in the team - psychological safety. Psychological security serves to make individual innovation projects truly effective. If we manage the company properly implement psychological safety achieved significant successes. When working with individual teams, we will greatly improve the probability that innovative projects will be successful. Also, we increase the number of team members who start to learn from mistakes and achieve significantly increased employee involvement.

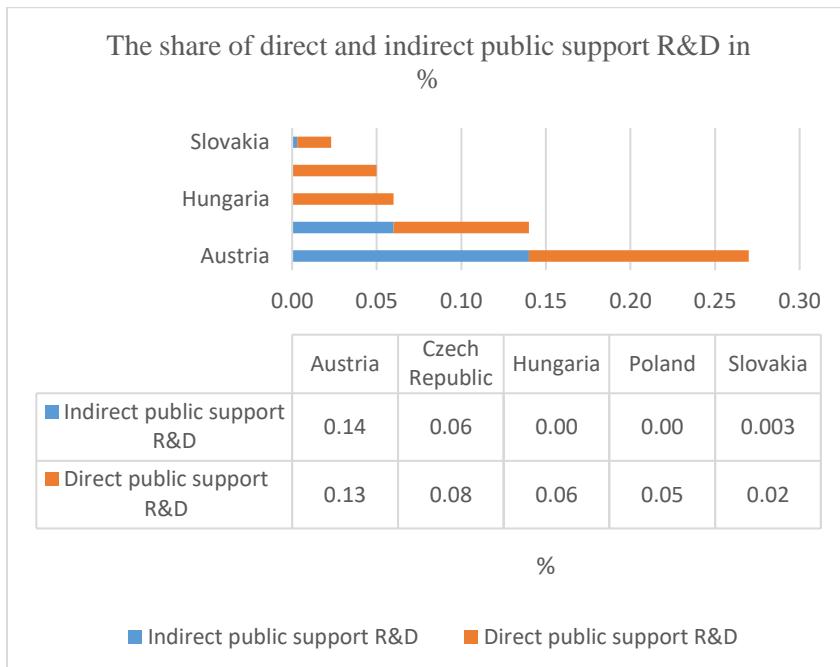
### **Third Pillar - Capability**

It is not just about skills in the sense of technical skills, but above all the organizational skills in terms of implementing innovative projects. Necessity is the proper use of project management tools. Typical innovation projects are a specific group of projects. These are projects that can be very difficult implemented entirely using traditional project management. In the case of innovative projects, it is starting to use agile project management. Agile project management is used mainly in IT until 2016 and now beginning to appear in other innovation areas. It is important to realize that to be able to adequately implement agile innovation projects, for example, using Agile-Stage-Gate [5], must be implemented the agile culture in the organization. It is not possible to perform agile projects without consistently established agile culture. Bernard Marr [8], as part of their inquiry dealt with the failure of projects. He found that 25 percent of innovative projects failed completely. 20 to 25 percent do not show the return on investment, and up to 50 percent need the massive redesign. He dealt with the question of why so many innovative projects failed and found that in fact 54% of project failures could be attributed to poor management - while only 3% were due to technological problems. Now thoroughly examined the benefits of agile development methods in the software world. These are primarily the flexibility, productivity, and speed. These properties of agile methods have been thoroughly studied and documented [1], [4], [3].

### **The fourth pillar - Capital**

The last pillar is capital. Capital considered as a source for financing innovative projects. Innovative projects are very costly. Very often, companies do not have enough own funds to finance them. Slovakia uses several tools to support innovations. On the one hand, it is purposeful support aimed at supporting specific projects and grants. Businesses can also obtain from the state a so-called indirect support when it is not a financial contribution, but a tax on income tax on own innovation projects. For comparison, the average share of R & D expenditure was 2,03% of GDP in the EU in 2016. Above the EU average, eight countries were located: Belgium, Denmark, Finland, France, Germany, Austria, Slovenia, and Sweden. The share of research and development spending was higher than 3% of

GDP in Denmark, Austria, and Sweden. In Slovakia, the share of R & D spending in Slovakia was only 1.18% of GDP. The following figure shows the share of direct and indirect public support for Slovakia and neighboring countries.



Source: OECD, 2018

**Figure 3** the share of direct and indirect public support for Slovakia and neighboring countries

One of the other possibilities of supporting the financing of corporate research and development was the introduction in 2015 of a so-called "super discount" at the height of 25%. It should be one of the main tools to motivate businesses to invest in research and development. After two years, for which data are available concerning the use of "super discount", however, it shows that the interest of companies is unexpectedly low. Real use lags behind the government's expectations by more than half. According to the CRIF - Slovak Credit Bureau's analysis in 2015, the supercomputing amount reached only 9.2 million euros and in 2016 only 16.4 million euros. The government counted up to 24 million euros. The amendment from 2018 brings several changes to the supercomputer system. The most significant is a fourfold increase in the supercomputer: from the current 25% to 100% of the tax-deductible expenses.

## CONCLUSION

The issue of implementing innovative business projects can be considered complicated. It is mainly because of innovation projects are determined by a high degree of uncertainty. It is always a step into the "unknown". For this reason, it is not advisable to manage them as standard "waterfall" projects.

Practice shows that the implementation of elements of agile projects into innovative projects is the right way. It is, however, important to note that agile projects can be implemented without an agile culture. For successful implementation of innovation projects is also to be considered a pillar called cooperation. Innovation projects are always realized in innovation teams which are professionally specialized. Efficiency good teamwork goes without saying. What it is necessary to recall the need for psychological security of these teams.

The question is whether our Slovak companies are prepared and able to create such a psychologically safe environment for their innovation teams. The last part of the four innovation pillars as a closed framework for innovation is capital. Without obtaining sufficient capital innovations cannot be efficiently developed. How we presented the results of innovation support from the Slovak Republic are not good. It is a question of whether the current situation will improve the new "super-discount" for R&D companies that is in place since 2018.

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## NOTES ON THE IMPORTANCE OF THE ENTREPRENEURIAL ECOSYSTEM FOR SOCIAL AND SOLIDARITY ECONOMY (SSE): THE ROLE OF INTERNATIONAL LABOR ORGANIZATION (ILO)

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### ABSTRACT

Currently, the Social and Solidarity Economy (SSE) is a phenomenon that has gained increasing economic, social and political visibility. However, these experiences are marked by challenges associated to the modus operandi that make its continuity or advances impossible or difficult, in many cases. Such challenges exist due to several economic aspects, such as administrative and management, political, social, educational, scientific, technological, environmental, legal and also those related to accounting. Besides, there are many restrictions in what concerns the need to advance in matters such as the regulation framework of public policies of SSE, of its institutionalization and financing. These restrictions put obstacles to the advancement of SSE. An “entrepreneurial ecosystem” is a community within a region of interdependent actors with diverse roles that interact, determining the performance of the ecosystem and eventually the entire economy of a region. As a result of the performance of the ecosystem, it is expected that, in addition to the results obtained by companies and organizations components (in terms of performance and learning), the lightweight interaction generating new businesses. The SSE cannot be restricted to the development of simple and disjointed activities of local productive. For this it is necessary to think the articulation of the SSE with other social enterprises and public and private institutions in local productive. In this sense, this article intends to discuss the newest developments in the construction of the entrepreneurial ecosystem for SSE and the role of the International Labor Organization (ILO).

**Keywords:** *Social and Solidarity Economy, Ecosystem, Emancipation*

### INTRODUCTION

One of the biggest challenges for the creation, maintenance and strengthening of Social and Solidarity Economy Enterprises (SSEE) is the establishment of an entrepreneurial ecosystem for SSE. We understand that the establishment of an entrepreneurial ecosystem for SSE is a fundamental instrument for the emancipation of SSEE [1].

It has been observed that one of the major problems of SSEE is the need for skills and resources for the construction of the "emancipatory space" or the "autonomy space" which are not available to most of the people who participate in self-managed groups. Such statement does not mean that we defend the idea of a seamless movement from the situations that involve the entrepreneurial ecosystem of traditional enterprises to the SSE, since these have characteristics that are inherent to their modus operandi with socioeconomic, political and cultural implications in their territories.

On the other hand, we can see, in the case of some SSEE, a bit of resistance – real, symbolic or even ideological – to discussing topics that are strictly economic and financial, such as costs of production, costs of loans, market strategies, productive surplus etc.

According to Gaiger (2008), even intellectuals who discuss the SSEE might also demonstrate these resistances to discussing topics related to the functioning of the company, efficiency and entrepreneurship, considering that they are ideologically contaminated and that they would lead to thinking strictly within the framework of a capitalist rationale. The author does not agree with this view and considers it a "refractory attitude", taking into account that it is not possible to think of a society in which there are no relationships of exchange nor economic activity. He also defends the need to rescue the term "entrepreneurship" within the context of SSE, besides understanding the complexity of the entrepreneurial process and its adequacy to the needs of an "associative entrepreneurship", typical of the SEE, in which some of the necessary ingredients are: cooperation in work activities, collective decisions, exchange of information and a collective project [2].

In this sense, this article intends to discuss the newest developments in the construction of the entrepreneurial ecosystem for SSE and the role of the ILO. In order to do it, the article is structured in the following way: topic 1 presents the idea of the "triple helix" and discusses its limitations, supporting the concept of ecosystem. Next, topic 2 will address elements that could be of interest in the construction of entrepreneurial ecosystems in some countries. And in topic 3, the article will show us the role of ILO in this perspective.

This work will be carried out, fundamentally, based on up-to-date bibliographic review on the theme and presentation of some actions and projects developed by the ILO.

## **1. INNOVATION POLICIES: THE "TRIPLE HELIX" APPROACH ON ENTREPRENEURIAL ECOSYSTEM**

The concept of "triple helix" became dominant in literature and is used to show the importance of the articulation of enterprises, which would be responsible for the generation of wealth; the universities, that would be responsible for the production of new knowledge; and the government, which would have the role of creating and maintaining the regulatory environment. [3]

The reasons to use this vision are: i) the triple helix approach combines economy with a strong sociological perspective of the systems of innovation, which would be a distinctive characteristic within this perspective; ii) the approach of the triple

helix is intended for application in public policies and their management in research institutions, in universities and in international organisms; iii) such approach works as a facilitator of planning, management and performance, in processes of decision making and in evaluations of these policies.

Nevertheless, according to Brännback et al. (2008) the triple helix model presents a problem: it has a top-down vision and does not consider the elements within the micro sphere that lead to the emergence of entrepreneurs and their enterprises. According to this study, the concept of triple helix tends to overestimate the value of the institutional actors at expenses of main actors, who are the entrepreneurs and the researchers interested in innovating. For these authors, the systems of innovation must be treated considering the autonomy of the entrepreneurs and researchers interested in innovating. For this, we must think of assets that can be mobilized. They consider that there are three relevant assets for the development of the entrepreneurial ecosystem: a) assets directed towards innovative activities; b) assets for entrepreneur actions and c) bridge-assets, which would be formed by people and mechanisms responsible for the induction and coordination of the interaction among the entrepreneurs and knowledge without taking on a bureaucratic character [4].

So, it is more adequate to think of a new approach to the ecosystem that: a) is focused on a “bottom-up model”, considering that the systems must be thought of in terms of the appreciation of relevant people and groups; b) understands the capacity of coordination as important (of cross-cutting nature), as a way to characterize the theoretical guidelines of this methodology; c) is supported on the ecological view of systems and networks which considers the interactions (ecological and evolutional) that integrate the entire ecosystem, all the species and all the organisms of a certain habitat and its physical environment [5].

These premises lead to the idea of “co-evolution”, when organizations can interact with their ecosystems and their ecosystems interact with the organizations. Another fundamental element in the ecosystemic construction is the degree of interconnectivity, that is, the interdependence of all the components in the system have with each other.

## **2. THE ENTREPRENEURIAL ECOSYSTEMIC CONSTRUCT FOR THE SSE**

According to what was shown before, we can see that the entrepreneurial ecosystemic construct constitutes a complex task, marked by several challenges. When we specifically deal with the entrepreneurial ecosystem for SSE, this complexity and other challenges are intensified, considering the inherent structural fragilities that characterize the SSE, as well as the field, which is still open for institutionalization of their policies.

However, there are already examples of some places in the world that can help to inspire us.

One of them refers to the construct of the ecosystem for social enterprises in the European Union. The study “Social enterprises and their ecosystems: developments in Europe” [6], while recognizing the inherent complexity of the process of

constitution of the ecosystem for social enterprises, argues for the existence of two fundamental pillars: public policies of support and the self-organization capacity of civil society. This study, which has the elements described above as its core (public policies of support and self-organization capacity of the civil society), separately, suggests a structure to reach the ecosystem which includes: a) knowledge - political awareness and legal means of recognition of these policies and actions; b) access to the markets; c) public and fiscal support for start-ups of SSE; d) access to financial support; e) instruments of support to the network and mutual support; f) development of researches and capacity building in the area. According to the work of the European Commission, national reports confirm that, rather than depending upon one factor alone, the ecosystem is shaped by the interplay among all these factors.

Another interesting study is about the construction of the entrepreneurial ecosystem in Asia, from the example of South Korea, through the Local Social Economic Ecosystem Development Project (LSEEDP), created in order to guarantee the sustainability of the South Korean SSE. In the South Korean case, the structure that was developed includes the local governments (with their respective support policies), the networks of SSE (and their centers of cooperation) and civil society (consulted in its participatory instances). In this ecosystem, the “asset formation” (in topics of infrastructure, human resources and market expansion) is considered a fundamental element and the entire process leads to the “local strategic projects”, where projects of support to the incubation of the enterprises of SSE and of local development are conceived. Although integrated, the LSEEDP gives priority to the local development projects from the “ecosystem groups for boroughs” (a type of ecosystemic neighborhood group), which are supported for up to five years, until they reach levels of autonomy. This process is divided into two phases, while the first is of promotion of the skills of civil society (meaning selected “neighborhoods”) and the second, of assistance to economic, financial, legal and other topics of the potential enterprises that are initiated [7].

A third example refers to the Brazilian case in South America. In this case, the National Secretariat of Solidarity Economy (SENAES), which was created in 2003, developed programmes to support solidarity economy enterprises. Although it did not have clearly defined structure, just as the cases described above, in Brazil, the construction of the entrepreneurial ecosystem can be seen through some actions, projects and programmes. The analysis of the Brazilian case suggests that there are already “seeds” of this structure in the country, although it is not formalized. In general terms, from the point of view of public policy and civil society participation, the important initiatives were the Brazilian Forum of Solidarity Economy (FBES), the creation of SENAES in 2003 and their several projects and actions. Other “seeds” of ecosystem in the country are: a) the universities which, although they are going through difficult moments, are financially supported by the federal government (through public edits or projects), to act as incubators of enterprises of SSE through the Technological Incubators of Popular Cooperatives. Additionally, there are some municipality and state governments which present projects and actions in the area. Along this line, there is the Network of public incubators of solidarity enterprises; b) banks that act with microcredit and social currencies. These community banks are presently in some municipalities in the country and

they are responsible for a network of over 100 community banks (like the original one - Banco Palmas); c) financing through SENAES (although presently they are temporarily extremely restricted or even paralyzed) for specific projects like Networks Project (of promotion of networks of SSE – which ended in 2016 and is still waiting for renewal), projects for the network of recycling etc.; d) programmes to guarantee demand (access to the market) which were quoted in the chart, and are programmes that allow for public purchase of food from SSE, fundamentally, from small rural producers, without public auction; e) existence of networks of SEE, formal and informal as well as important institutions of support, discussion and political strength for the SSE, such as the FBES, mentioned above; f) wide and growing basis of studies about SSE in the universities (courses of Economics, Social Sciences etc.) in undergraduate and graduate courses, either in training courses in the area, or in course conclusion papers or graduate studies (specialization, Master's, Ph.D.).

Additionally, it is important to mention that we still need to complete a legal context for the SSE, such as, for example, the legislation regarding solidarity economy, as well as community banks, social currencies etc. Also, we need to improve the action of the actors in order to recognize the limitations and specificities of the SSE and design coherent policies to overcome them.

### **3. THE ROLE OF ILO**

The ILO's role in contributing to the creation of an ecosystem internationally could include different types of activities ranging from knowledge generation on the SSE, contributing to advancing its definition, and promoting exchanges of experiences and methodologies. The ILO can contribute, as it already does, to raising the level of recognition of the SSE and the coordination of actions in its favour, through spaces such as the UN Task Force on Social and Solidarity Economy (UNTSSE), of which the ILO is a founding member, today counting over 25 members. The ILO can highlight, through studies and research, those economic sectors in which the SSE can contribute best in terms of creating decent work. Likewise, the ILO can raise awareness, thanks to its tripartite nature, on the importance of co-construction of public policies through social dialogue with policy makers of Member States and its social partners.

Through its SSE Academy, the ILO has addressed the issue of co-construction of public policies, specifically in the case of the Academies held in Korea and in Luxembourg. In this regard, it could be useful, for those wishing to deepen their knowledge and understanding of SSE, to visit the "Collective Brain" website [www.sseacb.net](http://www.sseacb.net). The ILO's aim of promoting international recognition and knowledge on the SSE has also been reflected in the production of country case studies on the state of public policies. The case studies of South Africa, South Korea, Costa Rica, Nicaragua, Brazil, Europe and the Philippines can be found on the Collective Brain.

Internationally, ILO also wants to promote the SSE in the context of the 2030 Agenda, in the framework of the previously mentioned UNTSSE and also in international meetings dedicated to the implementation of the Agenda. In particular, the ILO is involved in the World Forum on Local Economic Development, which has already held four biennial editions, in promoting the localization of Sustainable

Development Goals through the SSE. Most recently, the ILO participated in the 4th World Forum of Local Economic Development in Praia, Cabo Verde where, it coordinated a total of thirteen sessions on local development in fragile states, through south-south and triangular cooperation (SSTC) and SSE. A think piece on the role of SSE in Local Economic Development was also published, in collaboration with the European Research Institute on Cooperative and Social Enterprises (EURICSE). It seems to us that in addition to the involvement of the traditional ILO constituents that are national governments, in addition to the trade unions and employers' representatives, it is important to try to sensitize local governments and in this sense the mayors and municipal officials are also relevant stakeholders in the ILO's effort to contribute to the construction of a favourable ecosystem for SSE.

## CONCLUSION

The concept of “triple helix” became relevant in literature and is used to show the importance of the articulation of enterprises, which would be responsible for the generation of wealth; the universities, that would be responsible for the production of new knowledge; and the government, which would have the role of creating and maintaining the regulatory environment. There are others reasons to use this “triple helix” approach, as: i) it combines economy with a strong sociological perspective of the systems of innovation; iii) it is intended for application in public policies and their management in research institutions, in universities and in international organisms; iii) it works as a facilitator of planning, management and performance, in processes of decision making and in evaluations of these policies.

However, the “triple helix” needs to operate within the ecosystem in a bottom-up way, and not overestimating only (or more than) the value of the institutional actors at expenses of main actors, who are the entrepreneurs and the researchers interested in innovating. Also, we need to consider the idea of “co-evolution”.

In practical terms, we can see that the entrepreneurial ecosystemic construct constitutes a complex task, marked by several challenges. When we specifically deal with the entrepreneurial ecosystem for SSE, this complexity and other challenges are intensified, considering the inherent structural fragilities that characterize the SSE, as well as the field, which is still open for institutionalization of their policies. However, learned with some examples of places in the world that can help to inspire us.

In general, there are some elements who are important to structure the ecosystem that includes: a) knowledge - political awareness and legal means of recognition of these policies and actions; b) access to the markets; c) public and fiscal support for start-ups of SSE; d) access to financial support; e) instruments of support to the network and mutual support; f) development of researches and capacity building in the area.

The ILO's experience showed us that SSE organizations, through the pursuit of social, economic, and often environmental objectives are particular well-equipped to further incorporate sustainable development at all levels, integrating all three pillars of sustainable development, and recognizing the linkages and synergies that exist between them. The 2030 Agenda also highlights the need to work together

with local authorities and communities to promote cohesion, innovation and create employment. Particular emphasis is given to local communities, culture, knowledge, marginalized communities, and territorial planning in SDGs 6, 8, 11, 12, 13 and 15.

So, as we tried to show, one of the biggest challenges for the creation, maintenance and strengthening of SSE, is the establishment of an entrepreneurial ecosystem for SSE.

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# ORGANIZATIONAL AGILITY LEVEL EVALUATION MODEL AND EMPIRICAL ASSESSMENT IN HIGH-GROWTH COMPANIES

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## ABSTRACT

In ever-changing and increasingly competitive global environment organizations need to adapt faster to survive. In order to face market uncertainties organizations must become agile. Organizational agility is a complex and multidimensional concept. One of the main challenges in researching organizational agility is its measurement. The variety and combination of attributes, characteristics, capabilities, and practices make the measurement of organizational agility level highly complicated and subjective. The purpose of this article is to explore the organizational agility level measurement methods and present possible evaluation model. In the article authors propose organizational agility evaluation and assessment methodology. Presented model is empirically tested in the context of high-growth companies in Lithuania. These companies' agility level is evaluated using fuzzy numbers logic which allows more precise agility level evaluation in the organization. This article contributes to research by providing more unified concept, which can be adapted in studying organizational agility in a wide and global range of organizations, regardless of the industry they operate in.

**Keywords:** *Organizational agility, organizational agility level, fuzzy agility evaluation framework*

## INTRODUCTION

In order to effectively compete in changing market environment, organizations have to be proactive and anticipate change. To achieve that, organizational structures should allow for greater agility, through flexibility and response. Practitioners need new organizational solutions, forms, and tools to embrace the changing environment and capture new opportunities. Successful adaptation to external forces requires agile organizational enablers, abilities, and practices. In order to control and improve agility level, organizations need to be able to measure agility level and identify which internal organizational factors affect it. Measurement, identification, and evaluation of factors affecting organizational agility level in highly volatile environment remain important questions for researchers and practitioners. This article aims to answer some of them.

Organizational agility is especially important in the context of fast-growing companies. Normal growth organizations adapt to changes in environment and adaptation is reactive to the environmental triggers (competition, change in technology or consumer tastes, etc.). If the environment is relatively static, an organization is not pressured to adapt quickly. However, in high-growth companies,

in addition to external pressures, change and adaptation are also forced from within the organization and agility becomes pro-active. Often led by success and growth in sales revenues, profits, and market share - fast-growing companies undergo considerable internal changes as well. Therefore, during high-growth periods, organizational agility is crucial in adapting to fast changes from both internal and external influence. Thus, making high-growth companies especially suitable context to study organizational agility.

## METHODOLOGIES USED FOR MEASURING AGILITY LEVEL

There is no consensus on the organizational agility level measurement approach in scientific literature and researchers distinguish different components of agility [1]. Regardless, researchers seem to agree that organizational agility is one of the most important factors in ensuring organization's ability to adapt to changing the environment [2]–[4]. Organizational agility level measurement models have their shortcomings. There have been a number of attempts and different approaches to measuring organizational agility level in the past. Many organizational agility methodologies are too specific on one or another aspect of organization: some relate to specific business processes, such as software or product development; others concentrate on measuring agility level in supply chains; some only measure internal organizational factors while ignoring external influences. Such variety of methodologies make the concept of organizational agility diverse and vague. Many authors are concentrating only on specific industry of organizations, in particular – manufacturing sector, where they analyze what manufacturing organization can do to enhance their agility [5]–[7]. Others evaluate agility in a context of business process or area – e.g. supply chain agility [8]–[10], human resource agility [11], [12], information technologies [13]. Some of the research is only based on theoretical assumptions and not validated empirically [12], [14], [15]. Some measurement models can be applied to a wider range of organizations and are more holistic [6], [16].

Regardless of the number of attempts to measure and evaluate organizational agility magnitude, the lack of consensus still persists. Lack of precision regarding characteristics of the agile enterprise, limit the possibilities to measure the practices of agile enterprise. Therefore, constructing a comprehensive measuring tool for organizational agility level is a major issue from both practical and theoretical perspectives [17]. From a theoretical perspective, it encourages future research into organizational agility, while managerial perspective will gain insights into successful growth companies and provide an actionable model. Organizational agility is a complex and multidimensional concept. One of the main challenges in researching organizational agility is its measurement. The variety and combination of enablers, characteristics, capabilities, and practices make the measurement of organizational agility level highly complicated and subjective. This can be related to the vagueness and definition of agility, which differs from various organizations with their own unique sets of characteristics [18]. The different types of organizations over various industries complicate this task even further. One of the goals of this article is an attempt to move towards more comprehensive and holistic measurement process, which can be applied to different types of organizations.

## FUZZY AGILITY INDEX METHOD FOR MEASURING AGILITY LEVEL

To overcome the problem of vagueness and imprecision authors of this article selected a fuzzy logic approach of evaluating the organizational agility level of the enterprise. To measure organizational agility level, set of criteria are selected and evaluated by experts. Experts can be high ranked decision makers in the organization (CEO, director, board member, etc.) or researchers who analyze this field. However, expert opinions are subjective and can be influenced by their character or experience. In order to reduce uncertainty authors of this article use the fuzzy logic method developed by Lin et al., (2006) to analyze responses of surveyed experts, and adapt it to purposes of this article. The fuzzy logic evaluation of organizational agility level is chosen due to several advantages [19]:

1. This method provides realistic and revealing information. It calculates Fuzzy Agility Index (FAI) expressed in a range of values, which allows seeing the overall organizational agility potential and ensures unbiased decision.
2. This method can be used as a self-assessment tool for evaluating organizational agility level. It allows to identify the weak factors and improve them.
3. It provides the rational structure to approach the vague, imprecise and ill-defined phenomena of organizational agility.

According to Lin et al. (2006), fuzzy agility evaluation (FAE) framework, is composed of two major parts. The first part evaluates the business operation environment (agility drivers) and identifies agility capabilities. Organization environment evaluation is needed to identify the agility drivers, which influence the organization to change and reconsider the company's structure, strategy, and process. Organizational agility capabilities are the important abilities that are required to make appropriate responses to changes and respond to the external environment. The second part of the framework evaluates agility capabilities and combine the ratings and the weights to obtain a Fuzzy Agility Index (FAI) of an agile enterprise. Authors of this article enhances Lin et al. (2006) organizational agility level measurement framework by adding two parameters from a conceptual model as discussed in preceding sections – agility enablers and agility practices. Steps of organizational agility level evaluation framework [19]:

1. *Select criteria for evaluation.* Based on analysis of theoretical aspects of organizational agility, the applicable organizational agility enablers, capabilities and practices are selected. Table 1 summarizes organizational agility attributes, which are used to evaluate organizational agility level in fast-growing companies. Each dimension consists of certain attributes, that are formed into groups. Dimensions, attribute groups, and attributes are coded, as presented in Table 1.

**Table 1** Organizational agility dimensions and attributes

Dimension	Attribute group	Agility attribute
Enablers (AC <sub>1</sub> )	Structure and processes (AC <sub>11</sub> )	- Simple organizational culture and decision-making (AC <sub>111</sub> ) - Easily changeable business process (AC <sub>112</sub> )
	Human resources (AC <sub>12</sub> )	- Qualified and competent personnel (AC <sub>121</sub> ) - Flexible and open to change employees (AC <sub>122</sub> )
	Network (AC <sub>13</sub> )	- Easily accessible needed resources (finances, specialists, technologies, etc.) (AC <sub>131</sub> ) - Effective supplier, distributor, and business partner network (AC <sub>132</sub> )
	Technology (AC <sub>14</sub> )	- Easily changeable technology and information system (AC <sub>141</sub> )
Capabilities (AC <sub>2</sub> )	Awareness and competence (AC <sub>21</sub> )	- Ability to sense changes and identify new business opportunities (AC <sub>211</sub> ) - Ability to implement important changes in the organization (AC <sub>212</sub> )
	Reconfiguration (AC <sub>22</sub> )	- Ability to change organizational resources (employees, equipment, assets, etc.) (AC <sub>221</sub> )
	Learning (AC <sub>23</sub> )	- Ability to share knowledge and empower employees (AC <sub>231</sub> )
	Coordination (AC <sub>24</sub> )	- Ability to quickly develop and introduce new products/services to the market (AC <sub>241</sub> )
	Cooperation (AC <sub>25</sub> )	- Ability to outsource, expand and change business partner network (AC <sub>251</sub> )
Practices (AC <sub>3</sub> )	Organizational (AC <sub>31</sub> )	- Constant search for new business and development opportunities (AC <sub>311</sub> ) - Constant analysis and adaptation to internal and external changes (AC <sub>312</sub> )
	Employee empowerment (AC <sub>32</sub> )	- Continuously increasing employee competence and qualifications (AC <sub>321</sub> ) - Constant sharing of knowledge and information within organization (AC <sub>322</sub> )
	Customer enrichment (AC <sub>33</sub> )	- Constant improvement of products/services based on customer needs (AC <sub>331</sub> )
	Cooperation (AC <sub>34</sub> )	- Constant improvement of business network and its support (AC <sub>341</sub> ) - Constant monitoring of business partner quality and effectiveness (AC <sub>342</sub> )

Source: author

2. Determine the appropriate linguistic scale to assess the performance ratings and importance weights of the agility attributes. Evaluation of importance and weight for a particular organizational agility attribute will be done by surveying experts – company directors. High-growth companies' directors are selected as a primary data source, due to their deep knowledge of their particular organization -

its processes, structure, network, employees, market environment, industry competition and other factors. The questionnaire is used for this article to obtain information from experts – company directors. In order to collect research data a telephone survey was used. The questionnaire used consisted of statements that were structured to reflect the selected agility attributes (Table 1) from 3 dimensions – enablers, capabilities, and practices.

Company directors' responses were used in assigning importance weight and performance rating for each agility attribute. However, it is impractical to determine the concrete value ("crisp number") of importance on one or another vague agility attribute. For example, assigning a specific value to 'employee empowerment' or 'flat organizational structure'. Therefore, authors of this article use 7-point Likert scale applying triangular fuzzy numbers for evaluating performance ratings of agility attributes: excellent (E), very good (VG), good (G), fair (F), poor (P), very poor (VP), worst (W) (Table 2). Importance weights of the agile attributes, they are evaluated using 7-point Likert scale applying triangular fuzzy numbers: very high (VH), high (H), fairly high (FH), medium (M), fairly low (FL), low (L), very low (VL) (Table 3).

*3. Measure the performance and importance of agility attributes using linguistic terms.* After the linguistic variables for evaluating performance rating and importance weights of agility attributes are defined (step 1), the experts use linguistic terms (step 2) to determine the ratings of the performance of various agility attributes. In addition, experts evaluate the importance weight of each agility attribute as it applies to their particular company and industry specifics. Fuzzy numbers are used to evaluate importance weights and performance rating of agility attributes.

**Table 2** Linguistic variable for performance rating of the agility attributes

Linguistic variable	Code	Fuzzy number ( $\tilde{A}$ )		
Worst	W	0,0	0,5	1,5
Very Poor	VP	1,0	2,0	3,0
Poor	P	2,0	3,5	5,0
Fair	F	3,0	5,0	7,0
Good	G	5,0	6,5	8,0
Very Good	VG	7,0	8,0	9,0
Excellent	E	8,5	9,5	10,0
No Opinion	NO	-	-	-

*Source:* adapted from Lin et al. (2006)

**Table 3** Linguistic variable for importance weights of the agility attributes

Linguistic variable	Code	Fuzzy number ( $\tilde{A}$ )		
Very Low	VL	0,00	0,05	0,15
Low	L	0,10	0,20	0,30
Fairly Low	FL	0,20	0,35	0,50
Medium	M	0,30	0,50	0,70
Fairly High	FH	0,50	0,65	0,80
High	H	0,70	0,80	0,90
Very High	VH	0,85	0,95	1,00
Do not Know	DN	-	-	-

Source: adapted from Lin et al. (2006)

4. *Approximate the linguistic terms by fuzzy numbers.* Applying approximate reasoning of fuzzy sets theory by the linguistic value can be approximated by a fuzzy number [20]. The approximation will be specific for the context of this article – high-growth companies. For example, linguistic variable for Worst (W) performance rating can have a fuzzy number of (0, 0.5, 1.5), where 0 and 1.5 are lower and upper bounds of the available area for the evaluation data. Applying the relation between linguistic terms and fuzzy numbers, linguistic terms are transferred into fuzzy numbers.

5. *Aggregate fuzzy ratings with fuzzy weights to obtain a Fuzzy Agility Index (FAI) of an enterprise.* Fuzzy Agility Index fuses information by combining fuzzy ratings and fuzzy weights of all the attributes that influence organizational agility level. Organizational agility level increases with increasing FAI; therefore, it represents overall agility of an organization. The Fuzzy Agility Index (FAI) of organization can be calculated using the Equation 1.

(1)

$$FAI = \frac{\sum_{k=1}^n (W_{ij} \times R_{ij})}{\sum_{k=1}^n W_{ij}}$$

where:

FAI – organization's Fuzzy Agility Index;

W<sub>ij</sub> - fuzzy importance weight of the agile attribute *ij*;

R<sub>ij</sub> - performance rating of the agile attribute *ij*.

6. *Match the FAI with an appropriate level.* Once FAI is established it can be matched with the linguistic label. Euclidean distance method is a most widely used method for matching the membership function with linguistic terms [21]. It is used in fuzzy numbers logic method for more accurate evaluation of agility level. It helps to attribute Fuzzy Agility Index (FAI) to Agility Level more precisely, in

other words - to which Agility Level FAI is closer. The natural language expression set for Agility Level (AL) with fuzzy values are presented in Table 4.

**Table 4** Agility Levels

Agility Level (AL)	Code	Fuzzy number ( $\tilde{A}$ )		
Slow	S	0	1.5	3.0
Fair	F	1.5	3.0	4.5
Agile	A	3.5	5.0	6.5
Very Agile	VA	5.5	7.0	8.5
Extremely Agile	EA	7.0	8.5	10

Source: adapted from Lin et al. (2006)

Then by using Euclidean distance method, the Euclidean distance (d) from the Fuzzy Agility Index (FAI) to each Agility Level (AL) is calculated using the following Euclidean Distance Formula 2.

(2)

$$d(FAI, AL_i) = \left\{ \sum_{x \in p} \left[ \int FAI(X) - \int AL_i(X) \right]^2 \right\}^{\frac{1}{2}}$$

where:

d – Euclidean distance

FAI – fuzzy agility index

AL – agility level

## EMPIRICAL MEASUREMENT OF ORGANIZATIONAL AGILITY LEVEL

Hypotheses are tested after agility level for the surveyed organizations is determined. Based on theoretical organizational agility aspects analysis, it was observed, that the fast-growing organizations need to adapt to the changing environment, thus they have to be agile. Based on scientific literature analysis the following hypothesis is formed: H<sub>1</sub>: "Majority of high-growth companies' agility level is 'very agile' ".

To test the hypothesis (H<sub>1</sub>), cluster analysis is applied. Cluster analysis means the grouping of data in order to incorporate homogeneous data into a group (cluster). Cluster analysis is applied in order to classify available data into several groups so that the elements of each group demonstrate similar characteristics. The article uses cluster analysis in order to enable dividing the companies under consideration into groups according to their agility level. To perform cluster analysis, several methods are used: Euclidean distance and K-means method.

An empirical study into organizational agility was conducted during September 2016. The list of high-growth Lithuanian companies was obtained from “Gazele 2015” project implemented by the business daily newspaper “Verslo Žinios” analytics department [22]. 3576 companies were selected from “Gazele 2015” list for telephone survey based on the following criteria:

- a) Business operations started no later than 2011 January 1<sup>st</sup>;
- b) Any ownership structure;
- c) Revenue for first accountable year (2011) was between 300,000 and 1,000,000 EUR;
- d) Last accountable year (2014) was profitable;
- e) Revenue grew more than 20% (2014 compared to 2011);
- f) Transparency and openness, which is represented by the consent to publicize their financial results and absence of tax-related liabilities.
- g) Company has been in the same industry for the accountable period (2011-2014)
- h) Company provided valid contact information and name of director

Upon selection of the companies, telephone interviews with their management (directors) were held. In all, directors of 1,227 companies were contacted. 252 of them agreed to participate in the survey. Same questions were presented to all of them and the responses were recorded. 239 questionnaires were used for data processing. Thirteen of them had to be rejected because they were not completed in full. It has been established, by means of the  $N$  formula, that the sample size is 245 when the margin of error is 5% and the confidence level is 90%. Thus, it can be concluded that the results of the survey are representative and reflect the entire target population.

Before testing Hypothesis, organizational agility level for each company needs to be calculated using Fuzzy agility index methodology. For demonstration purposes, evaluation of organizational agility level will be presented only for one studied company (Company 1). While the calculation of agility level in rest of 238 studied companies will be performed using same methodology. After collecting responses via telephone survey using linguistic terms, performance ratings and importance weights of agility attributes for Company 1 are listed in Table 5.

**Table 5** Agility attribute ratings and weights (in linguistic terms) for Company 1

Agility attribute	Importance Weight ( $W_{ij}$ )	Performance rating ( $R_{ij}$ )
AC <sub>111</sub>	FH	G
AC <sub>112</sub>	L	VP
AC <sub>121</sub>	H	G
AC <sub>122</sub>	L	G
AC <sub>131</sub>	H	G
AC <sub>132</sub>	L	P

AC <sub>141</sub>	FL	F
AC <sub>211</sub>	FL	P
AC <sub>212</sub>	L	P
AC <sub>221</sub>	FL	P
AC <sub>231</sub>	FH	G
AC <sub>241</sub>	FL	G
AC <sub>251</sub>	FL	F
AC <sub>311</sub>	FL	G
AC <sub>312</sub>	M	G
AC <sub>321</sub>	FH	G
AC <sub>322</sub>	FH	G
AC <sub>331</sub>	FL	P
AC <sub>341</sub>	L	P
AC <sub>342</sub>	FH	G

Source: author

In next step, agility attribute performance ratings and importance weights in linguistic terms are approximated using values in Table 2 and Table 3 to fuzzy numbers ( $\tilde{A}$ ) and presented in Table 6.

**Table 6** Agility attribute ratings and weights (in fuzzy numbers) for Company 1.

Agility attribute	Importance Weight (W <sub>ij</sub> )	Performance rating (R <sub>ij</sub> )
AC <sub>111</sub>	(0.5, 0.65, 0.8)	(5.0, 6.5, 8.0)
AC <sub>112</sub>	(0.1, 0.2, 0.3)	(1.0, 2.0, 3.0)
AC <sub>121</sub>	(0.7, 0.8, 0.9)	(5.0, 6.5, 8.0)
AC <sub>122</sub>	(0.1, 0.2, 0.3)	(5.0, 6.5, 8.0)
AC <sub>131</sub>	(0.7, 0.8, 0.9)	(5.0, 6.5, 8.0)
AC <sub>132</sub>	(0.1, 0.2, 0.3)	(2.0, 3.5, 5.0)
AC <sub>141</sub>	(0.2, 0.35, 0.5)	(3.0, 5.0, 7.0)
AC <sub>211</sub>	(0.2, 0.35, 0.5)	(2.0, 3.5, 5.0)
AC <sub>212</sub>	(0.1, 0.2, 0.3)	(2.0, 3.5, 5.0)
AC <sub>221</sub>	(0.2, 0.35, 0.5)	(2.0, 3.5, 5.0)

AC <sub>231</sub>	(0.5, 0.65, 0.8)	(5.0, 6.5, 8.0)
AC <sub>241</sub>	(0.2, 0.35, 0.5)	(5.0, 6.5, 8.0)
AC <sub>251</sub>	(0.2, 0.35, 0.5)	(3.0, 5.0, 7.0)
AC <sub>311</sub>	(0.2, 0.35, 0.5)	(5.0, 6.5, 8.0)
AC <sub>312</sub>	(0.3, 0.5, 0.7)	(5.0, 6.5, 8.0)
AC <sub>321</sub>	(0.5, 0.65, 0.8)	(5.0, 6.5, 8.0)
AC <sub>322</sub>	(0.5, 0.65, 0.8)	(5.0, 6.5, 8.0)
AC <sub>331</sub>	(0.2, 0.35, 0.5)	(2.0, 3.5, 5.0)
AC <sub>341</sub>	(0.1, 0.2, 0.3)	(2.0, 3.5, 5.0)
AC <sub>342</sub>	(0.5, 0.65, 0.8)	(5.0, 6.5, 8.0)

Source: author

In next step, Fuzzy Agility Index (FAI) for Company 1 is calculated using equation (1).

$$FAI_{Company\ 1} = (4.36, 5.72, 7.16)$$

Fuzzy Agility Index for Company 1 is (4.36, 5.72, 7.16). Similar FAI calculations are done for all remaining 238 respondents. Next, using Euclidean Distance Formula (2), the Fuzzy Agility Index for Company 1 is matched with Agility Level (Table 4).

$$d(FAI, S) = \sqrt{(4.36 - 0)^2 + (5.72 - 1.5)^2 + (7.16 - 3.0)^2} = 7.35$$

$$d(FAI, F) = \sqrt{(4.36 - 1.5)^2 + (5.72 - 3.0)^2 + (7.16 - 4.5)^2} = 4.76$$

$$d(FAI, A) = \sqrt{(4.36 - 3.5)^2 + (5.72 - 5.0)^2 + (7.16 - 6.5)^2} = 1.30$$

$$d(FAI, VA) = \sqrt{(4.36 - 5.5)^2 + (5.72 - 7.0)^2 + (7.16 - 8.5)^2} = 2.18$$

$$d(FAI, EA) = \sqrt{(4.36 - 7.0)^2 + (5.72 - 8.5)^2 + (7.16 - 10)^2} = 4.78$$

Preceding calculations of Euclidean distance for various Agility levels show, that Company's 1 Fuzzy Agility Index (FAI) is closest to Agility Level – 'Agile (A)'. This is represented by the lowest Euclidean distance value of 1.30. This indicates that Company 1 is Agile. Using similar method, Agility Levels for the remaining 238 surveyed companies are evaluated.

Upon selection of companies for the study, distribution by types of industry, and calculating agility level for each company, the hypotheses can be tested. To test the first hypothesis ( $H_1$ ) 'Majority of high-growth companies' agility level is 'very agile"', the companies were divided into clusters based on the degree of agility. Two methods were used for this purpose: Euclidean distance method and K-means method. Clustering procedure results using Euclidean distance method are presented in Table 7.

**Table 7** Cluster analysis using Euclidean distance method

Industry	Agility Level					
	A		VA		EA	
	count	%	count	%	count	%
Construction	10	21.7	29	19.7	2	8.7
Manufacturing	8	17.4	25	17.0	2	8.7
Transportation and storage	6	13.0	31	21.1	4	17.4
Wholesale and retail; repair of motor vehicles	22	47.8	62	42.2	15	65.2

Source: author's calculations

As indicated in Table 7, companies are divided into three clusters: agile (A), very agile (VA), and extremely agile (EA). In order to verify the statistical significance of the clustering procedure, a chi-square test was carried out; its results are provided in Table 8 below.

**Table 8** Pearson Chi-Square Tests for Euclidean distance method

		Agility
Industry	Chi-square	5.991
	df	6
	Sig.	0.424 <sup>a</sup>

a. More than 20% of cells in this subtable have expected cell counts less than 5. Chi-square results may be invalid.

Source: author's calculations

As evident from Table 8,  $p > 0,05$  (Sig.  $> 0,05$ ). This means that the chi-square test criterion cannot be applied in the verification of statistical significance as the results may be erroneous. To ensure a more accurate cluster analysis, one more method – the k-means method is used, as already mentioned in the methodological part of the thesis. Results obtained by means of this method are presented in Table 9.

**Table 9** Cluster analysis using K-means method

Industry		Agility					
		A		VA		EA	
		Count	%	Count	%	Count	%
	Construction	11	19.0	28	22.6	2	5.9
	Manufacturing	10	17.2	23	18.5	2	5.9
	Transportation and storage	7	12.1	27	21.8	7	20.6
	Wholesale and retail; repair of motor vehicles	30	51.7	46	37.1	23	67.6

Source: author's calculations

As can be seen from Table 9, in the case of the k-means method, just as the Euclidean distance method, the companies of the industries are grouped in three clusters: agile (A), very agile (VA) and extremely agile (EA). The Pearson chi-square test is used to verify the results (see Table 10).

**Table 10** Pearson Chi-Square Tests for K-means method

		Agility
Industry	Chi-square	14.664
	df	6
	Sig.	0.023 <sup>a</sup>

Results are based on nonempty rows and columns in each innermost subtable.

a. The Chi-square statistic is significant at the 0.05 level.

Source: author's calculations

Table 10 shows that  $p < 0.05$  ( $\text{Sig.} < 0.05$ ), which leads to a conclusion that the chi-square test is statistically significant and can be used for the verification of the clustering results. In this case the chi-square ( $\chi^2$ ) is equal to 14.664 when the degrees of freedom are equal to 6. The limit value of the chi-square ( $\chi^2_{tbl}$ ) is 12.59, when  $\alpha = 0.05$ . Hence  $\chi^2 > \chi^2_{tbl}$ , therefore, it may be concluded that the results of clustering are significant. Summarized results obtained through the clustering procedure are presented in Table 11.

**Table 11** Summarized clusterization results

	Agility level				
Method	Slow	Fair	Agile	Very agile	Extremely agile
Euclidean distance	0	0	46	147	23
K-Means	0	0	58	124	34

*Source:* author's calculations

An analysis of the data in Table 11 shows that in each industry under consideration, the majority of companies fall within the second cluster (very agile). This can be explained that high-growth companies during their last period of growth (2011-2014) have seen major changes in external environment. In order to take advantage of this growth opportunity, they had to adapt and change internally. The fact that they were successful in adapting to this change and grew considerably (on average 165%), shows that their internal organization was agile. Also, it should be taken into consideration, that successful company directors tend to evaluate their organization and its ability to adapt more favorably, compared to less successful counterparts. This can explain the lack of 'Slow' and 'Fair' agility levels in surveyed organizations of four industries. On the other hand, the number of 'Extremely agile' agility level cluster companies have the smallest number of companies. This indicates that even successful companies can improve agility level. This has considerable indications for the importance of organizational agility research for practical purposes. If successful, high growth and profitable companies have a place to improve their agility level, then less successful and struggling counterparts should need more serious improvements. This opens directions for further research in the area of organizational agility and its practical improvement. Therefore, regardless of the method used, all the examined companies are agile, very agile or extremely agile. It can be concluded, on the basis of the study results, that the first hypothesis ( $H_1$ ) 'Majority of high-growth companies' agility level is 'very agile' has been confirmed.

## CONCLUSIONS

Different methodologies used for evaluation of organizational agility level has been analyzed in this article. Organizational agility level measurement methodology is presented. It is suitable for wide range of the industries and combines organizational agility drivers, enablers, capabilities and practices into one model. Model of organizational agility evaluation could be beneficial for practitioners when analyzing their organizational agility level, internal factors, and attributes. Future research can be focused on external factors that affect organizational agility on the industry, regional level or market as a whole.

The testing of the organizational agility measurement methodology is based on an empirical survey of directors in high-growth Lithuanian companies. The survey was conducted through telephone interviews. The number of methods were used when analyzing collected responses. The responses were expressed in quantitative terms using triangular fuzzy numbers. Triangular fuzzy numbers method had been selected in order to reduce the inaccuracy and uncertainty of the responses. Fuzzy Agility Index was used to measure agility level for each surveyed company. Cluster analysis was applied in order to group the companies under consideration into clusters and continue the analysis for each cluster individually.

On completion of the analysis, it has been established that all fast-growing companies in Lithuania consider themselves to be agile, very agile or extremely agile. Majority of the being 'very agile'. This can be explained by the success of the surveyed companies. The context of the study was high-growth companies.

Gazele 2015 is the list of most successful companies in Lithuania in terms of revenue growth. On average, respondent companies grew 165% and all were profitable. Organizational agility is part of this success and experts (company directors) have evaluated their organizations' agility attributes accordingly. It was concluded that the first hypothesis ( $H_1$ ) 'Majority of high-growth companies' agility level is 'very agile" has been confirmed.

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# RELATIONSHIPS BETWEEN ATTITUDES AND BEHAVIOR OF POLISH CONSUMERS TOWARDS CORPORATE SOCIAL RESPONSIBILITY (CSR)

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## ABSTRACT

The purpose of the article is to explain the relationship between attitudes and behavior of Polish consumers towards corporate social responsibility (CSR). The article identifies relationships with consumers making their purchases in shopping centers in 2016.

The paper focuses on empirical research conducted on a group of 415 Polish consumers who do their shopping in stores. The study used a questionnaire, including interviews with the consumers.

The article presents empirical insights on the relationship between attitudes and behavior of Polish consumers towards corporate social responsibility (CSR). The research of the authors confirmed the growing interest of consumers in the issue of social responsibility, especially regarding the producers of purchased products. This issue was examined through questions about the consumer's interest in information about the socially responsible activities of producers of purchased products.

The article indicates the willingness of consumers to adopt new rules in business activity. The growing awareness of consumers and their increasing requirements in comparison with the requirements set by other stakeholders, mean that the trends of sustainable development and social responsibility will be implemented by most enterprises.

This article meets a specific need to investigate how one can diagnose consumer attitudes towards corporate social responsibility (CSR), which point to growing market, social and environmental awareness. It can be said that this awareness influences the functioning of enterprises and the way in which they will perceive social and environmental issues.

***Keywords: relationships, consumer attitudes, CSR***

## INTRODUCTION

Providing products and services in accordance with the defined needs, stated in the placed order, is expressed not only by the act of delivery itself, but also by meeting the recipient's specific expectations closely related to the order. From the consumer's point of view meeting these conditions is the source of satisfaction, while from the point of view of assessing the quality of the logistics process, it determines the level of supplier's adaptability, i.e. the ability to adapt to the customer's needs.

The level of consumer service is a determinant of the efficiency and quality of the supply chain operation. Therefore, enterprises should carry out the assessment of potential and existing suppliers and make their choice on the basis of the

supplier's ability to deliver a product compliant with the organization's requirements. It is therefore justified to define the requirements for these suppliers. In the context of the above, it is necessary to assume that some of the criteria are more important and it is on their basis that a system of such evaluation should be built and focused. The aim of the article is to explain the relationship between the attitudes and the behavior of Polish consumers towards corporate social responsibility (CSR). The article identifies relationships with consumers making their purchases in shopping centers in 2016.

## **1. COSTUMER ATTITUDES AS A SUBJECTIVE DETERMINANT**

Attitudes are developed in the process of thinking and feeling on the basis of knowledge and opinions of other people. They are manifested by expressing subjective judgments, beliefs and preferences, and are the causative factor of human behavior towards similar events and by solving similar problems [1].

The term attitude in the present sense introduced by sociologist F. Znaniecki, who applied it do call the state of mind of an individual in relation to certain values of a social nature [2]. In literature, we meet many definitions of the attitude concept. L. Rudnicki classifies the definitions into three main groups referring to [3]:

- behaviorist tradition or learning psychology W.M. Fuson, W.A. Scott, D. Drob [4] describing attitudes as a kind of disposition to behave in a certain way,
- definitions referring to the sociological concept L.L. Thurstone, H.A. Murray, C.D. Morgan, M. Fishbein, J. Reykowski [5] defining attitude as a specific, relatively permanent, emotional or judgmental relation to the subject or disposition for such a relationship to occur, expressed in positive, negative or neutral terms.

Many researchers adopt the so-called a three-element definition of attitude, according to which the attitude is formed by such components as:

- emotional-judgmental (emotional),
- cognitive (beliefs about a given object),
- behavioral (tendencies to positive or negative behaviors towards a given object).

Concluding the analysis of the definition of attitude, the approach by J.F. Engel, R.D. Blackwell and D.T. Kollat [6] is worth quoting, who describe attitude as a learned predisposition to a favorable or unwilling response in relation to specific action options, and state that an attitude is an assessment of the expected results of the use of a given product. From among many interpretations of the concept of attitude, Z. Kędzior [7] chose the following properties:

- "Attitude is a predisposition of reacting to an object, not actual behavior towards this object.
- Attitude is permanent over time. A change in attitude requires sufficient pressure.
- Attitude is a dormant variable that causes consequences in verbal or physical behavior.
- Attitude is given the primacy of direction. It is related to preferences referring to the object's assessment or feelings towards the object (...)".

The attitude structure consists of three elements: cognitive (information possessed by the individual, allowing to express an opinion about it), emotional (refers to feelings and emotions related to the object) and motivational (a tendency

to act, expressing the individual's readiness to a particular behavior towards object) [8].

Attitudes are among the determinants that are subjective (psychological), i.e. as previously quoted after G. Świątowy they make up the "whole of mental properties, processes, and spiritual human values" and are classified as factors related to activating processes (related to human instincts, motivation and emotions creating a motor force that stimulates human action) as well as conceptual and cognitive processes (conscious perception and assimilation of information messages, process of learning and remembering experiences, and thus the elements of mental information processing aimed at getting to know oneself and one's environment with the help of intellect) [9]. As subjective determinants constitute an element that is difficult to assign to any of the above categories, because "apart from the emotional component also cognitive elements participate in developing attitudes, which indicates the comprehensive character of this variable".

There are four functions of consumer attitudes [10]:

- practical, related to the benefits or negative consequences of using products by consumers,
- defensive, related to the protection of the consumer against external or internal threats,
- cognitive, connected with understanding the world and orientation in the world,
- valuing, helping to express emotions or self-concept important to the consumer.

Knowledge of consumer attitudes is the way to effective action through its better adjustment to market requirements in the modern economy.

## **2. RELATIONSHIPS BETWEEN CONSUMER ATTITUDES AND BEHAVIOR**

Consumer behavior on the market, however, is not always directly correlated with the manifestation of certain consumer attitudes. The relationship between consumer attitudes and consumer behavior is determined by many factors, the multiplicity and complexity of which makes it difficult to measure and assess the impact of attitudes on actual behavior. L. Rudnicki divides these factors into two groups [11]:

a. personality-related, including: other attitudes, contrary to the attitude that affects the behavior, motives contrary to a given attitude, verbal skills, social skills - knowledge about the appropriateness of behavior in a given situation;

b. situational, including: presence of other people, which may restrict the freedom of behavior, regulations defining the social roles in which the individual is active, which are related to the regulation of specific behaviors, occurrence of other behaviors, changes in the level of generality of the subject of attitude, ability to predict the consequences of events, appearance of unforeseen events causing the disclosure of existing attitudes.

However, one must take into account a very important aspect of attitude, which is decisive for the fact that it determines consumer behavior. The internalization process, i.e. the internalization of influences consistent with the individual's value

system, affects the depth of attitude change. The degree of internalization of attitude determines to a large extent its impact on consumer behavior [12].

The influence of attitudes on behavior is explained by the theory of planned behavior of M. Fishbein and I. Ajzen. This theory presents human intentions as factors that are the basis for predicting the purposeful behaviors of man. The basis for predicting these intentions are attitudes towards specific behavior and subjective norms. According to the authors, in the case when planned and thought-out action is possible, attitudes towards specific behaviors in connection with subjective norms have the greatest impact on behavior [13].

The tendency to behave, in accordance with the attitude is influenced by the availability of attitude, that is, the strength of the relationship between the object and the evaluation of this object, measured by the time in which the man realizes his feelings towards the object of the attitude. The availability of attitude also affects the resistance of this attitude to change - the more accessible the attitude is, the greater the compatibility of behavior with it. People with more accessible attitudes, being more inclined to disregard arguments that contradict their beliefs, are more resistant to change. The experience gained due to contact with the object of the attitude makes the attitude more accessible and resistant to change. It is difficult to change important attitudes. The more a man is connected with the concept of his own person, the more important is the attitude is to him.

In psychology it is assumed that the compliance of attitudes with behavior is high, although many studies have not been able to demonstrate it, because they measure attitudes and behaviors at different levels of generality [14]. It should be noted that in certain situations there are objective difficulties in displaying specific behaviors, which may also weaken the relationship between attitudes and behaviors. According to A.W. Wicker individual's behavior is influenced not only by one particular attitude, but also by other attitudes and motives that are often in conflict with a given attitude [15].

### **3. DATA AND EMPIRICAL RESULTS**

The research was conducted on a group of 415 Polish consumers making their purchase in shopping centers in 2016. The research focuses on examining consumer attitudes based on their statements regarding the CSR concept. Consumer behavior results from these attitudes.

The data contained in Table 1 show that consumers were in favor of holding unethical companies accountable for their activities - as much as 44.5%.

**Tab.1 Consequences for an unethical company**

No..	<b>Should the company bear the consequences?</b>	<b>%</b>
1.	Yes, definitely, legal, financial and image consequences adequate to the act committed	44.5
2.	Yes, legal consequences without publicity	28.8
3.	It depends on the harmfulness of the act, if the act is - yes	25.0
4.	If insignificant, then no. No answer given	1.7

Source: own elaboration on the basis of the questionnaire research data

Tables 2 and 3 show that the consumer's purchasing decision is influenced by the knowledge about negative or positive actions of the producer. Answers to these questions, as in the case of attitudes, were constructed in such a way as to avoid the need to choose extreme answers - they included a strong, indirect and indifferent option, which did not show any reaction.

**Tab. 2** How does the knowledge about the positive qualities or actions of the producer affect your purchasing decisions?

No.	The impact of knowledge on the decisions	%
1.	No influence on my purchasing decisions	13.4
2.	I sometimes choose the products of this producer	47.7
3.	I definitely choose the products of this producer	38.9

Source: own elaboration on the basis of the questionnaire research data

In the case of negative features or actions, a decisive reaction is declared by nearly 55% of consumers - they definitely do not choose products of this producer.

**Tab. 3** How does the knowledge about the negative qualities or actions of the producer affect your purchasing decisions?

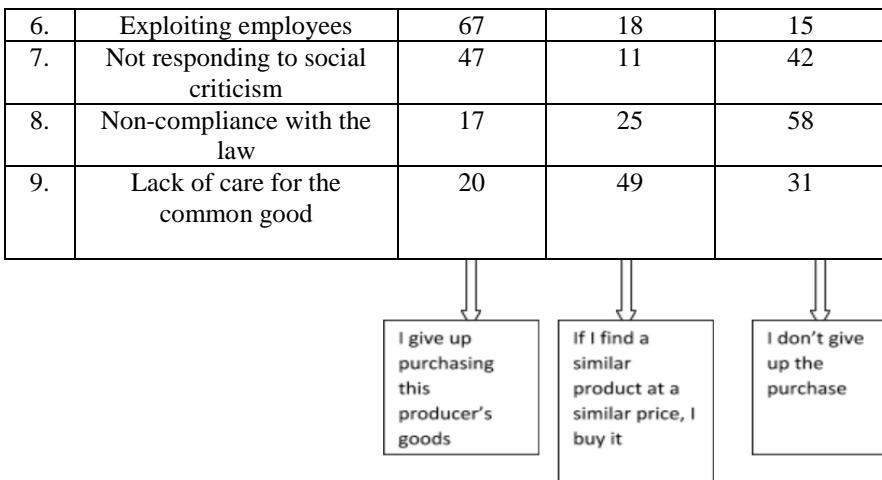
Lp.	The impact of knowledge on the decisions	%
1.	No influence on my purchasing decisions	14.9
2.	I sometimes choose the products of this producer	30.5
3.	I definitely don't choose the products of this producer	54.6

Source: own elaboration on the basis of the questionnaire research data

A number of indications in this question presented an ambivalent attitude - the people presenting it on the one hand highly appreciate and expect responsible business, and on the other hand do not feel enough motivation to "reward" or "punish" the company for certain positive or negative actions with its purchasing decision.

**Tab. 4** How did you react to the following information about the producer of the product you intend to buy?

No.	Information	I give up buying	If I find a similar one	I don't give up buying
1.	Production of defective products	80	18	2
2.	Harmfulness of a product batch or line	75	13	12
3.	Dishonesty towards customers	51	46	3
4.	Activities harmful to the environment	49	25	26
5.	Corruption and dishonesty of owners and employees	45	23	32



Source: own elaboration on the basis of the questionnaire research data

In another question, asking respondents to declare whether they would buy their favorite product (e.g. food, clothing, cosmetics) knowing that its production or use is associated with:

1. significant damage to the natural environment (water, air, soil),
2. killing / destroying any species of animals or plants,
3. employee abuse,
4. fraud, corruption, breaking the law,
5. uncertainty as to the safety of its use,
6. a threat to the existence of certain social values,
7. doing harm to other people.

Answers to this question were ranked on the five-point Likert scale from: "definitely yes", through "rather yes", "rather not" to "definitely not", with the additional answer "I don't know".

The large percentage of respondents declaring that they would not abandon buying their favorite product, even if its production was associated with significant damage to the environment. This attitude is characterized by the tendency of some Poles to specifically justify unethical activities with a different cause, subjectively more important to them. It is also known that often the greatest enemies of social values are producers of goods and services that replace people's family ties, take time, and degrade traditions.

**Tab. 5** Would you buy your favorite product (e.g. food, clothing, cosmetics) knowing that its production or use is connected with:

No.	Action / effect	Definitely yes	Rather yes	Rather not	Definitely not	I don't know
1.	Significant damage to the natural environment (water, air, soil)	10	7	49	28	6
2.	Killing / destroying any species of animals or plants	5	11	36	40	8
3.	Employee abuse	10	19	40	22	9
4.	Fraud, corruption, breaking the law	8	22	30	31	9
5.	Uncertainty as to the safety of its use	6	19	25	46	4
6.	A threat to the existence of certain social values	5	16	42	22	15
7.	Doing harm to other people	5	2	30	55	8

Source: own elaboration on the basis of the questionnaire research data

Another question from the group of questions diagnosing consumer attitudes towards the concept of corporate social responsibility concerned paying for purchased products and services. Consumers were asked there if they would be willing to pay more and how much more for a product of a socially responsible producer.

The answers to this question are optimistic. About 90% of respondents are willing to accept a higher price of the product to a greater or lesser extent, provided that its producer is a socially responsible business.

**Tab. 6** Would you be willing to pay more for a product knowing that its producer is a socially responsible business?

No.	Consumer decision	%
1.	Yes, definitely, pretty much more	15.7
2.	Reluctantly, but a small amount - yes	52.3
3.	Yes, but not much more	22.6
4.	No	9.4

Source: own elaboration on the basis of the questionnaire research data

## CONCLUSION

In Poland, corporate social responsibility is a relatively new concept, which has been present in public discourse recently in a specific socio-economic situation, unfinished market reforms, openness to the world economy and deepening European integration. Thinking in long-term categories this concept is based on is undoubtedly difficult in Poland, especially when the main problem of many entrepreneurs is the struggle for survival, paying salaries to employees, gaining

capital for development, debt collection from debtors or settling disputes with tax offices. In Poland, according to entrepreneurs, the social and political climate is not conducive to the dissemination and application of the concept of corporate social responsibility.

The research results indicate that consumer attitudes towards corporate social responsibility are definitely positive. The research confirms that consumers have a positive attitude towards the concept of CSR and expect enterprises to implement such activities. They want to be informed about the socially responsible activities of producers of goods and services that they purchase. In addition, they declare their strong reactions to information about negative or positive actions of enterprises.

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## SOCIAL INNOVATION IN CLUSTERS AND SMART CITIES

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### ABSTRACT

Clusters and smart cities are well aligned with the modern approach of “Open innovation” which depends on the strong interaction between RDI entities, the dynamic entrepreneurship, public administration and the civil society. Social innovation is a challenge for clusters and smart cities as well as for Romania. Clustering and smart cities are team activities and need a common approach in the regional innovation system. Clusters are drivers for social innovation in smart cities and offer solutions to main topics such as: governance, society, mobility, safety, sustainability, circular economy, economy & data & technology. Social innovation is a complex process, which results from the interaction of many entities, public and private, over an extended period. The paper intends to focus on the linkages that involve social relationships or networks that produce benefits for the clusters members and cities and on measures focused on the importance of social innovation that could determine the reduction of the gap between Romania and the other EU Member States. From a methodological point of view, the research paper encompasses 4 components: 1) Clusters and smart cities development in Romania and promotion of social innovation 2) New methods to assess the cluster and smart city impact on innovation, economic growth and social integration, including the testing of methods at the level of the pilot cities Cluj, Timisoara, Alba Iulia, Oradea, Brasov, Iasi, Piatra Neamt 3) Expected results using specific tools for the new methods developed and a large scale dissemination activities including: the elaboration of a Guide on social innovation in clusters and smart cities in the near future; the creation of a national platform for collaboration on social innovation and social entrepreneurship in Romania. 4) Conclusions on clusters and smart cities willingness to embrace this concept of social innovation primarily because there is a new sense of urgency in the need to find solutions to many of the societal problems.

**Keywords:** *clusters, smart cities, social innovation*

### INTRODUCTION

The **social innovation** in clusters and smart cities is a novelty for Romania as well as for many other countries. Social innovation is a worldwide phenomenon driven by globalization with its main goal to create social change. The growth of social innovation, both in Romania and internationally, has been significant over the last few years, during which time there has been considerable evolution in the

concept and a widening of its application. The more appropriate definition of social innovation within clusters and smart cities could be that of Stanford University (2008) “A social innovation can be a new product, production process, or technology (much like innovation in general), but it can also be a principle, an idea, a new organization, a social movement, a new method, an intervention, or some combination of them [1].

**Clusters** could promote and support social innovations as products and services. The European Cluster Observatory identified around 3043 clusters with up to 40% of the European workforce employed by companies in such clusters. Employees in strong clusters earn on average 3% higher wages than their colleagues in the same industries but located outside of clusters. This reflects the higher productivity that companies can achieve in clusters [2]. Clusters and smart cities are important components of the European Open Innovation System, where all stakeholders need to be involved and create seamless interaction and mash-up for ideas in innovation eco-systems. Open Innovation 2.0 is a new paradigm based on a Quadruple Helix Model where industry, R&D entities, public administration and civil participants work together to co-create the future and drive structural changes far beyond the scope of what any one organization or person could do alone. There is much that needs to be done to properly establish Open Innovation 2.0 in Europe. There are 5 key elements in the new Open Innovation process: networking; collaboration; dynamic entrepreneurship; research & development; proactive intellectual property management.

**Smart City** is defined by different people in different ways. A “Smart City” is a city seeking to address public issues via ICT-based solutions on the basis of a multi-stakeholder, municipally based partnership” [3]. People make a city smart. The primary goals of the Smart city include offering digital means for supporting social needs in all daily transactions. It is important to understand that the objective of Smart City is to provide basic infrastructure and give a decent quality of life to city residents through clean and sustainable environment and application of “Smart” solutions.

“When we talk about the smart city, we are definitely talking about social innovation, and so the importance of collaborative networks, partnerships, a community development and citizen participation” [4]. According to Deakin and Al Wear (2011) [5], there are four factors that contribute to the definition of a smart city:

1. “The application of a wide range of electronic and digital technologies to communities and cities;
2. The use of ICT to transform life and working environments within the region;
3. The embedding of such Information and Communications Technologies (ICTs) in government systems;
4. The territorialisation of practices that brings ICTs and people together to enhance the innovation and knowledge that they offer.”

At the beginning of 2015, the European Economic and Social Committee (EESC) adopted a document that sets the basis for a new development and support

strategy for Smart City projects, called "Intelligent Cities as the engine of a new industrial policy in Europe" [6].

The study of the World Bank "Magnet cities-Migration and Commuting in Romania" published in 2017 [7] shows that the large, medium and small secondary cities (outside the capital of Bucharest) are like innovation hubs where the local administration's vision emphasized on raising the quality of people's lives, attracting investments and tourists, ICT and mobility oriented as well as on integration the sustainability as main topic.

The paper intends to focus on the **objectives** related on the innovative capacity of these clusters and smart cities of linkages that involve social relationships or networks that produce benefits for the cluster members and local communities, on important tools and measures to increase social innovation in clusters and cities to become models of good practices for other clusters and cities, on social awareness within clusters and cities to reduce the gap between Romania and other countries as well as on fostering the cross-sectoral cooperation.

The main **barriers** that exist now are related to the followings:

- An insufficient expertise regarding support for social innovation within clusters and smart cities;
- An insufficient cooperation and networking between stakeholders of clusters and smart cities on the dimensions of social innovation;
- A fragmented knowledge transfer on best practices in this field from abroad to Romania;
- A clear lack of exploitation of innovative solutions to address the social challenges within clusters and smart cities;
- The traditional concepts and models of innovation are not adequate to understand socially driven innovation;
- A lack of financing and competences on social innovation, clusters and smart cities;
- Miss of the appropriate methodology to evaluate the social innovation performances in clusters and smart cities.

## **CLUSTERS AND SMART CITIES DEVELOPMENT IN ROMANIA AND PROMOTION OF SOCIAL INNOVATION**

**Innovation** is the driver of clusters and cities. **Entrepreneurship** is key to the success of urban economy and a source of local improvement. It is not only about job creation, but also about enhancing upward mobility and increasing citizens' self-confidence so that they become active agents of development. The city leaders can boost entrepreneurship and create innovation ecosystems providing a framework for sustainable growth. Innovation eco-systems are similar to clusters, but do not have the same focus on specific sets of related industries. They tend to encompass all activities in a given location (a city or a region) that are connected to innovation.

In Romania there are 320 cities but the Romanian clusters that are working on a smart city sector are few and located around the larger cities such Cluj Napoca, Bucharest, Brasov, Iasi, Timisoara, Craiova, Constanta, Galati (i.e. Cluj IT Cluster develops the strategy for Oradea-the first smart city in Romania and for Sibiu that is part of the pilot project of research and innovation Smart City; Cluster for Innovation and Technology Brasov develops smart mobility in the city of Brasov etc). In this context for developing a Smart City, the focus has to be on people. However, too often the focus on people is neglected. The engagement of people in a city requires to – a) build an enabling environment for public to voice their views and thoughts; b) develop public awareness through sharing and providing access to information; c) identify talents available within the city to provide and implement solutions; and d) form teams to guide, assist, and monitor implementation.

Awareness about smart solutions plays crucial role in developing true smart citizens. In this regard the city authorities cannot ignore to take efforts to raise citizen awareness on the efficient usage of the smart solutions and services in which substantial investments are made. This requires first, education for mind-set change of the people, good governance, and enforcement of law where there is any infringement. To build and implement smart cities successfully, we need to have in-depth insights on the actual needs of citizens of a city and build solutions that are feasible, workable and sustainable in that city. Traditional Smart city model includes separate subject areas or municipal government spheres: transport, healthcare, education, safety, municipal services, environment, the involvement of citizens [8]. The model is oriented on stakeholders – the great number of government agencies, state and business organizations. The city authority goal is to identify all the stakeholders, determine their roles, responsibilities and possibilities, but many stakeholders remain forgotten.

Small and medium-sized enterprises (SMEs) are the weakest part of the national innovation system as demonstrated by a very small share of innovative SME's. In 2016, 34,26 % of the Romanian SMEs have allocated no resources for innovation activities, while 0,63% of the enterprises have directed more than 76% of the total investments towards innovation [9]. Romania is ranked 62 out of 138 countries for business sophistication in the Global Competitiveness Report 2016 [10]. There is a low level of collaboration between SMEs and research entities demonstrated by only 1928 SMEs that are members in clusters..

Cities can act as platforms to drive innovation, sustainability, mobility, inclusivity. Small and medium sized cities can also contribute to implement new models of business mainly in creative and cultural sectors, tourism and eco-tourism, textiles, wood and furniture etc.

Clusters play an important role as drivers of economic growth and innovation locally, regionally and nationally. Clustering and smart cities are team activities, not a solo effort and the success requires a core of motivated enthusiasts who would also inspire others to join in.

Clusters have emerged naturally and “bottom-up” from the regional level being mainly industry driven ones, out of which the most important are those of the automotive sector, agro-food, energy and eco-constructions, creative and cultural sectors, wood and furniture, ICT, tourism, health and medical sciences.

Furthermore, advanced are also clusters driven by universities and R&D institutes or by the local administration. The capacity of the Romanian cities and regions to innovate depends on many factors such as: the business culture, the skills and competences of the workforce, the existence of effective education and training institutions, innovation support services, technology transfer mechanisms, R&D&I and ICT infrastructure, the mobility of researchers, business incubators, new sources of finance and local creative potential etc. Good governance is also crucial.

Smart specialization strategies help regions to concentrate resources on a few key priorities. Clusters are used by cities and regions as platforms bringing together and mobilizing local actors to design and successfully implement smart specialization strategies, attracting innovative companies and creating more jobs at local level, implement of social innovation and eco-innovation. Clusters facilitate business opportunities and internationalization for SMEs that activate in cities and regions [11].

**CLUSTERO** - the Romanian Cluster Association [www.clustero.eu](http://www.clustero.eu) is created in July 2011 and brings together 45 clusters and individuals with the purpose to coordinate the sustainable development of clusters in the eight Romanian development regions.. The role and activities of CLUSTERO are focused on: information, communication and knowledge transfer and networking; facilitator of the cross-cluster cooperation and internationalization; partner for the national, regional, European and international consortia in various projects; advisory point for new cluster initiatives formation and awareness building, training on cluster management and clusters promotion, helps clusters to develop a visible profile, lobbying etc.

## NEW METHODS IN SMART CITIES AND CLUSTERS ASSESSMENT

There are many different ways of assessing the smartness of cities and clusters. The first way of evaluation of city and cluster smartness is the usage of indicators, elaboration of indexes and city/cluster rankings.

Various evaluation methods, models for understanding and conceptualizing smart cities and clusters have been developed to explain smart city and cluster concepts, which aim to define their scope, objectives and architectures.

A meaningful smart city assessment method should be able to measure individual well-being and satisfaction in the city in a comparable and dynamic way which is a very complex goal. Methodological limits, practical and economical obstacles of data collection at settlement level are also affecting the elaboration of better evaluation system. More specific, focusing on city's vision, strength and weaknesses, using bottom-up approach assessment methods are needed.

Evaluation helps a) to explore the current status and position of settlements as smart cities, b) to present the relative position of cities to each other c) to explore the development or "movement" of cities towards becoming smart cities, d) to provide information and model future actions, e) to prepare, establish decisions and to determine development trends.

In comparative analyses, cities are evaluated and ranked according to their different economic, social and geographical parameters, not least in order to determine “leaders” and those, lagging behind, performing better and least settlements. The city rankings and lists were used by the cities as well, to elaborate development priorities and to improve the prestige and image of the settlements. Romanian cities as members of European urban system are facing global challenges as well: urbanization, ageing population, increasing unemployment, inadequate urban housing stock, climate change, environment pollution, unhealthy environment; traffic jams, inadequate public transport services (long travelling time, parking problems, problems of radial transport system); problems of waste management; inadequate support of regional and governmental authorities on sustainable urban development (need for more autonomy) [12].

Smart city uses technology that city services and systems are connected in a more intelligent and effective way and makes investments into human capital to increase quality of life. City administration puts inhabitants not services in to the center (less bureaucracy, more electronic spread of information and data, better capability to share with other institutions, better transparency) and creates an environment friendly and an intelligent transport system. Technology creates huge possibility to monitor the water and waste management and to assure a better public safety. Cost efficient social and health supply system, quality education and an attractive tourism are also important for cities to become smart. In Romania, the usage of opportunities given by ICT is further disappointingly low.

Indicators and indexes are useful tools of preparation of location choices for enterprises or investments. They are also aiming at positioning cities according to their competitiveness, strength and weaknesses. Indicators are helping to elaborate strategic priorities and development possibilities. There are many advantages of using indicators and indexes for the evaluation of city smartness. City rankings attract lot of attention in both scientific and public life. They generate discussion and debate on smartness, competitiveness, quality of life, helping to rethink formerly elaborated strategies and development priorities. They also allow to position cities, can be marketing tools in city promotion and contribute to the success of city leaders [13]. The usage of indicators is relatively simple, clear, easily interpretable, easy to understand, visualize, compare and reproducible in time and space but there are some limits related to data collection, transparency, comparison of different indicators and methods (the lack of some information on social innovation and quality of services) etc.

As indicators and city rankings have their own limitations and problems, other possible methods were developed. One of them is the analysis followed by clustering. Romanian Clusters Association – CLUSTERO developed this method in relation with the “smartness” of a city (i.e. the relationships between Cluj Innovation City and the seven clusters to develop in top areas of agro-food, ICT-2 clusters, renewable energies, creative and cultural industries, wood and furniture, life style). The analysis follows changes in the dynamic of innovation, entrepreneurial culture, use of funds, number of enterprises and jobs created in clusters with influence on the city, progress of ICT (impact of social media, convergence of products and services, trans-sectoral approach of topics of interest, broad band etc), number of tourists, behavior of the consumer (personalization of

products and services, immediate availability of products and services, shortening the life cycle of products, reduction of carbon footprint) etc. Romania adapted the triple helix paradigm (industry-R&D- public authorities) to a so called „Four Clover Model”, the fourth actor being represented by catalyst institutions such as technology transfer centres, chambers of commerce, consultancy companies, civil community etc. Identifying the relevant stakeholders in a cluster is a challenge in Romania. In cities like Cluj, Oradea, Timisoara, Alba Iulia, Brasov, Iasi, Piatra Neamt, clusters help to develop the smart strategy of the city and to implement projects of interest for the quality of life of citizens and for their “happiness”. But there is an increasing demand for including subjective factors into the evaluation. For this reason citizens are asked to fill questionnaires where they have to evaluate their medical status, well-being, satisfaction and happiness. A key issue that was identified when considering happiness of the cities, is the potential for interdisciplinary research aimed at a better understanding of what makes a ‘happy’ city. For this, it is needed to conduct the analysis on a wide range of disciplines including geography, economics, sociology, urban and regional planning and psychology.

The paper shows that the assessment of smart city and cluster performances is complicated because there are many different factors of influence: culture, infrastructure, location, administration, local facilities, capabilities and limits etc. More specific, focusing on city’s vision, strengths and weaknesses, using bottom-up assessment methods are needed for analysis of social innovation within clusters and smart cities.

## **THE ORIGINAL CONTRIBUTION AND THE EXPECTED RESULTS**

The original contribution of this paper consists in the promotion of first research in Romania of social innovation within clusters and smart cities. The methodology will give the possibility to better analyzing, evaluate and compare the social innovation cluster’s performances. Foresight exercises, projects generation seminars, social innovation audits and business review, cross-cutting collaboration, collaboration platforms will be put in practice as tools for social innovation cluster and smart city development and for increasing their performances on the global market. The project proposes a transfer of know-how and innovation to clusters and smart cities from abroad to Romania within of important annual events like "EU-Asia Gateway 2018 - The 4th Transylvanian International Clusters Conference" that will take place in Cluj.

The research outcomes are the followings:

- A first research on social innovation within clusters and smart cities in Romania, that creates links between research institutions and researchers from abroad and Romania;
- A new guide for social innovation in the Romanian clusters and smart cities;
- A set of recommendations for developing a support infrastructure for clusters and smart cities such as public, private and European funds (programs), training, networking etc.;

- The new topics on social innovation in clusters and smart cities presented at the national/international scientific events (conferences, innovation forums, workshops, seminars) with different target groups: clusters, public authorities, R&D institutions and researchers, SMEs and sectors ;
- A Romanian platform to share opinions on the research project and connected with the official website of the Romanian Cluster Association – CLUSTEREO ([www.clustereo.eu](http://www.clustereo.eu));
- Specific leaflets, articles in different reviews about the research project.

## **CONCLUSION**

Clusters and smart cities do not offer an instant solution that will work in all circumstances for the well-being of their members and communities. In Romania, clusters and smart cities are essential, but to be effective they need the right framework of funding, commitment, and support for smart specialization and creating an open space for cross-fertilization. Building trust is critical for cooperation and involves focusing on strengths, adding value and connecting the right people in certain expertise domains.

Smart specialization needs to be broken down into concrete opportunities, as is reflected in the emphasis on niche and value-chain development. This involves a region identifying its own advantages, and becoming the starting point for internationalization and strategic partnering efforts. Local policy makers have to intercept the evolution of the territory to create and consolidate regional branding strategies connected to the clusters and smart cities. Exchange of best practices and cooperation between clusters and smart cities improve their activities, strategy and services, internationalization and communication, marketing and branding, promotion in EU networks and partnerships for EU projects (Horizon 2020, COSME, INTERREG, Creative Europe etc. This paper demonstrates the importance of clusters and smart cities for implementing the social innovation as well as the need of cooperation within European regional networks.

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## THE PUBLIC-PRIVATE PARTNERSHIP MARKET IN POLAND IN 2009-2017 COMPARED WITH OTHER EUROPEAN PUBLIC-PRIVATE PARTNERSHIP MARKETS

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### ABSTRACT

Public-private partnership (PPP) is an important and attractive way of implementing public services as part of collaboration between the public and private sectors. The attractiveness results from the option of financial engineering of public resources and private capital, with each party fulfilling its own objectives simultaneously and separately. With budget constraints today, co-operation between both sectors increases the effectiveness of public services by risk-sharing and using the private sector's experience in dealing with particular types of tasks, especially in investment. Besides, the private sector provides financing, which allows public sector units to utilize budgetary resources in other areas.

This study aims to analyse the state of affairs and to evaluate the current market of PPP projects in Poland in compared to other European countries. Also, it shows actions undertaken to accelerate growth in this market. The analysis covers the years 2009 to 2017.

The appraisal of PPP in Poland was based on the relevant literature, European PPP Expertise Centre reports, Ministry of Investment and Development reports, Centrum PPP reports and the author's own research. The methods used were descriptive statistics and inferencing. The findings show that the Polish PPP market diverges from other EU markets in the number of projects, their value, structure and character. The prevailing type in Poland are low-value self-government infrastructure projects. In recent years, Polish governments have often taken legislative and promotional action to more engage the private sector in public services. This has resulted in the adoption of a road map for co-operation between the two sectors, in appointing advisory and consulting teams at government level and in numerous training and promotion practices.

***Keywords:*** *public-private partnerships, public sector, investments, infrastructure*

### INTRODUCTION

Public-private partnership (PPP) is an important and attractive way of implementing public services as part of co-operation between the public and private sectors. The attractiveness results from the option of financial engineering of public resources and private capital, with each party fulfilling its own objectives simultaneously and separately. With tight budget constraints today, co-operation between both sectors increases the efficiency of public services by risk-sharing and using the private sector's experience in dealing with particular types of tasks,

especially in investing. Besides, the private sector provides financing, which allows public sector units to utilize budgetary resources in other areas.

There are many various definitions of PPP in the literature. It is generally understood as a long-term agreement between the public sector and the private sector with the intention of running a project or offering a service traditionally provided by the public sector. The main aim of the co-operation is to secure funds for designing, constructing, modernizing, operating and maintaining the infrastructure or for long-term services. In such relations, the private party takes on most of the risks of implementing the project [1], [2].

Being a complex structure, PPP requires a legal and institutional framework which will be clear and simple to implement. In addition, it needs efficient preparation by public authorities, high-quality projects, allocation of appropriate funds and a friendly climate for the formula [3], [4].

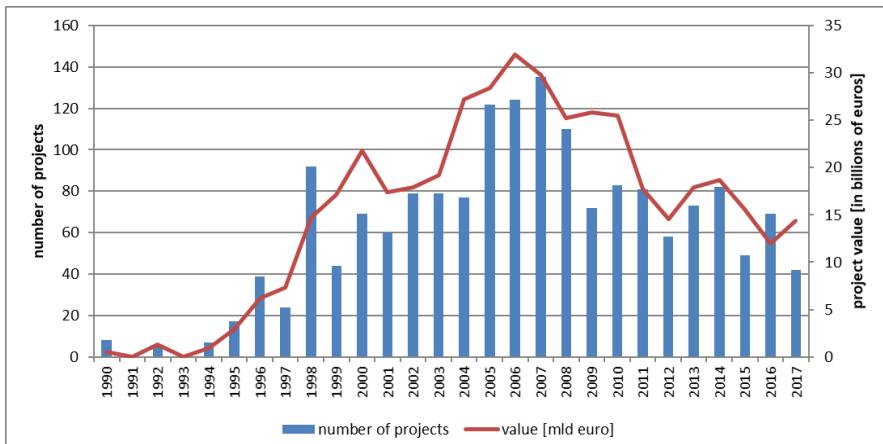
This study aims to analyse the status quo and evaluate the current market of PPP projects in Poland compared with other European countries. Also, it shows measures taken to accelerate growth in this market. The analysis covers the years 2009 to 2017.

The appraisal of PPP in Poland was based on the relevant literature, European PPP Expertise Centre reports, Ministry of Investment and Economic Development reports, Centrum PPP reports and the author's own research.

## **1. THE STRUCTURE AND DYNAMICS OF THE EUROPEAN PUBLIC-PRIVATE PARTNERSHIP MARKET**

Involvement of the private sector in financing and carrying out public services dates back in Europe to the time of the industrial revolution, urbanization and growing transport. The infrastructure in Europe (and later in America, China and Japan) was built with private funds while public funds covered expenses of manor houses and war effort [5].

In Western Europe PPP developed in the second half of the 20<sup>th</sup> century and its dynamics increased rapidly in the late 1990s (diag.1). The growing expectations regarding the scale and quality of public services and the considerable infrastructure gap in Europe prompted public authorities to intensify efforts to use intersectoral cooperation to supply technical and social infrastructure [6].

**Diag.1.** The number and value of PPP projects in Europe in 1990-2017

Source: own elaboration based on data from European PPP Expertise Centre reports for 1990-2017

As shown in Diag.1, the real boom in PPP projects took place in the first decade of the 21<sup>st</sup> century to peak in 2006 for the number of financial closes (144) and in 2007 for project value at over 30 billion euros. In years 1990-2017 more than 1,930 PPP contracts were signed with a total value of over 379.74 billion euros.

Those positive trends were broken by the global financial crisis, evidenced by the slump in numbers and total venture value for 2009-2012. 2012 witnessed merely 68 signed contracts to a total value of 12.8 billion euros, which was the lowest for this market since 1999. In 2014-2017 the interest in PPP projects in Europe declined and their number fell from 82 in 2014 to 42 in 2017.

The PPP leader in Europe is the United Kingdom. Its share in 1990-2009 was 67% in the number and over 50% in the value of all PPP projects. Spain ranked second (10.1% and 11.4%, respectively), followed by France (5.4% and 5.3%), Germany (4.9% and 4.1%), Portugal (3.1% and 7.0%), Italy (2.4% and 3.3%), Ireland (1.3% and 1.6%), and the Netherlands (1.2% and 1.8%). In 2010-2017 Britain's influence on the European PPP market decreased to about 30% of total value, giving way to France (23% of closed projects), Italy (8.8%), Belgium (5.8%) and the Netherlands (5.1%). Also Spain and Germany have a high share here. Altogether, those 7 countries have generated contracts worth of 89% of the total European PPP market. The subsequent countries, including Scandinavia and Central Eastern Europe, also follow the PPP mode in their infrastructure investments.

Notably, Turkey's share in the European market is consistently growing. In 2014-2017 it launched 13 projects to the total value of 17.7 billion euros, which amounts to 45% of the European PPP market [7].

Compared to Western Europe, the number and value of PPP projects operated in Central Eastern Europe looks modest. In 1990-2009 their share was 2% of the total number of contracts and 5.2% of the value. Poland ranked second, after

Hungary, with its share of 1.7% for value and 0.4% for the number of financial closes [8]. This reflects the immaturity of the markets, delays in initiating relevant legislation and shortage of specialized institutions to promote PPP. Other reasons of the slow development might be passivity of authorities, psychological barriers (e.g. mistrust or fears of being suspected of corruption) and, lastly, the global financial crisis.

## 2. THE STRUCTURE OF THE PUBLIC-PRIVATE PARTNERSHIP MARKET IN POLAND IN 2009-2017

Infrastructure development and quality services in line with public expectations are major elements in Poland's economic development. According to the government's estimates, maintaining the infrastructure growth rate at the current level until 2030 requires investing capital of 1.5 billion PLN [9]. Public entities' budgets (including the national budget) do not guarantee sufficient finances to operate projects in economic infrastructure (e.g. transport, natural environment, energy) and social infrastructure (e.g. health care, education, culture, sport and recreation). It is indispensable to engage more private resources in realizing investments and providing public services.

The Polish PPP market, despite the existing legal order in the collaboration of the two sectors, still remains in the initial stage of development, compared to the overall European market. 8 years after new regulations were brought into effect [10], the outcome is 117 PPP contracts signed and 506 private partners selected and announced in the Public Procurement Bulletin. Part of the announcements were about the same projects and they were placed again because the proceedings had been annulled or no bids had been submitted. The index of efficiency (ratio of contracts signed to announcements placed) is low for the Polish PPP market and stands at 23.12%, with peaks of 50% worldwide [11].

**Table 1.** Number of tenders initiated and PPP contracts signed in Poland in 2009-2017

period	tenders initiated	contracts signed
<b>2009</b>	43	2
<b>2010</b>	60	9
<b>2011</b>	43	11
<b>2012</b>	81	16
<b>2013</b>	70	19
<b>2014</b>	52	16
<b>2015</b>	61	24
<b>2016</b>	60	11
<b>2017</b>	36	9
<b>total</b>	<b>506</b>	<b>117</b>

Source: own elaboration based on: Szymański K., Korbus B., Zalewski D., Analiza rynku PPP, Instytut PPP, Warsaw, Poland, 2017.

This low efficiency in Poland seems to result from misunderstanding the very idea of PPP by both the public and the private party, poor contract processing skills, abandoning professional advice and insufficient social capital.

The total value of the Polish PPP market in 2009-2017 calculated on the basis of published announcements is estimated at 16.12 billion PLN. The real value calculated on the basis of contracts signed is over 5.5 billion PLN.

117 PPP contracts were signed in Poland in 2009-2017. In the first year after the introduction of the new Act of 2008 only two contracts were signed. In subsequent years the number grew steadily. The record of 24 contracts was set in 2015. During the last two years of the period under study the trend was reversed – the number of new contracts fell to 11 in 2016 and 9 in 2017.

As regards the private partner selection procedure used in 117 contracts in 2009-2017, 75 (64.1%) were signed under the Concession Act and 42 (35.9%) under the Public Procurement Law.

Polish PPP investments are mostly made by local governments, which have concluded 76 out of all 117 contracts. The most contracts at an advanced stage of development were signed by urban (37), rural (23) and urban-rural communes (16).

Local governments at a higher level have concluded 12 contracts (province marshal's offices – 9; district governor's offices – 3). Only 5 contracts were signed by the central government administration. The rest of the contracts were concluded by entities linked with local governments, by state budget entities or by executive agencies.

The degree of interest in PPP in a particular public service sector depends on the degree of infrastructure underinvestment in that sector and on the relative accessibility of public funds (local, central and EU). Also, what is very important in successful matching public and private interests is the economics of the very enterprise, especially its ability to generate income and thus guarantee self-financing of the project throughout its implementation. During the period studied, most interest focused on the following sectors: energy efficiency (19 contracts), sport and tourism (16), transport infrastructure (16), sewage and water treatment (13), telecommunications (11). In all, in the above-mentioned 5 sectors 75 contracts have been concluded, which amounted to 64.1% of the whole Polish PPP market. The domination of the energy sector results from the economic profits generated by those projects. Their financing is facilitated thanks to significant savings in electricity consumption costs by using state-of-the-art technological solutions.

Due to the self-governmental character of the PPP market, local governments – proportionally to their needs – plan and implement microenterprises worth up to 5 million PLN. In the period under study, a total of 50 investments were made of a total value of less than 5 million PLN (42.73% of all contracts). The remaining contracts concern investments of various values from 5 to 500 million PLN. There is only one large investment in Poland exceeding 500 million PLN – *Waste disposal system for the city of Poznań*.

Implementation of public services in the PPP mode requires guaranteed funding sources. For 34 contracts (75.55%) the financing was exclusively or almost

exclusively the responsibility of the private partner, who took the whole risk of raising the funds and had to rely on both own resources and debt financing (mainly bank credit). In general, private partners in PPP projects obtain finances in practically the same way and on the same terms as with other investments which they routinely undertake.

For 10 PPP contracts, the hybrid approach has been employed in which both private and EU funds are used. The EU subsidy came from the operational programme for the public partner's home province.

For the picture of the Polish PPP market to be complete, it needs to comprise plans for the future. Public entities declare interest in the PPP formula and they are undertaking more and more analytical studies in preparation for the tender procedure. Until the end of 2017, a total of 113 new PPP investment projects have been recorded. They are each at different stages of completion and so some of them can enter the tender process in 2018 while others have to wait [12].

### **3. THE GOVERNMENT'S POLICY ON PROMOTION AND DEVELOPMENT OF PUBLIC-PRIVATE PARTNERSHIP IN POLAND**

Implementation of PPP investment projects requires extensive action linking legal, economic and organizational fields. Past experience shows that the dynamics of PPP market growth largely depend on positive atmosphere around sectoral co-operation and involvement of central government administration in promotional activities.

Since 2009, PPP collaboration of the public and private sectors in Poland has been regulated by two legal acts: the Act of 19 December 2008 on PPP and the Act of 2016 on concession for construction works or services [13].

In July 2017 the Polish government adopted the document *The Government's policy on the development of public-private partnership* whose aim was to indicate concrete actions to enhance the scale and effectiveness of PPP investments. The government has undertaken to: introduce necessary PPP-friendly changes, monitor the list of PPP investment projects and concluded contracts, raise awareness of PPP through educational and information campaigns, prepare guidelines, model contracts and models of good practice for PPP, organize extensive free consultancy for selected PPP projects, voluntarily evaluate PPP projects planned for implementation in order to confirm their validity, implement an obligatory opinion on the formula of the implementation of state-financed projects worth over 300 million PLN (a so-called PPP test), identify the market's needs and possibly implement a system of warranties for both sectors or other financial instruments with which to lower the costs of preparation and implementation of PPP projects.

The government envisages that thanks to the above-mentioned measures the number of PPP contracts signed will grow till 2020 even by 100 and the value of PPP investments will increase to at least 5% of all public sector investments. 10 private partner selection procedures are to be initiated by the central government and 40% of all procedures (governmental and self-governmental) are planned to close successfully i.e. with signing the contract.

It is too early to assess the impact of the actions adopted because particular ministries are still working on detailed guidelines. Yet, the Ministry of Investment and Economic Development has certainly been successful in implementing an extensive system for information, promotion and consultancy. The webpage [www.bazappp.gov.pl](http://www.bazappp.gov.pl) provides important information on legal issues, publications, training and advice regarding PPP, which expands the knowledge of sectoral co-operation. Besides, public entities are showing more and more interest in new investment projects in the PPP mode. Having said that, the first concrete measurable results of the government's action should be visible around 2020 and so the final assessment will have to wait until then.

## CONCLUSION

The experience of Europe shows that for the public-private partnership to be an efficient solution for investment projects there must be political will of those in power, clear legal regulations and social acceptance. Poland has met the condition of implementing relevant legislation conducive to sectoral cooperation. Before 2017 the action of authorities was limited to declarations which were not followed by practical measures to make efficient implementation of PPP possible.

The Polish market is different from other PPP markets. This is due to the domination of local government projects - with practically none at the central government level - and to the low project value [14]. Also, the PPP sectoral structure is different in Poland. Elsewhere in Europe the prevalent sectors are education, transport and health care, whereas in Poland projects predominantly concern energy, sports, recreation, and transport infrastructure (car parks).

The low efficiency of PPP projects in Poland is determined by various factors. The key ones are[15]:

- the high time consumption of the process,
- the over complexity and high cost-intensity of project preparation,
- distrust of or little knowledge about advisory services and methods and principles of selection and collaboration,
- too few successfully concluded projects and flaws in the standard tender documentation and model contracts,
- poor knowledge and little experience of PPP,
- common stereotypes about collaboration between the two sectors,
- belief that for a PPP project to be in the public interest it should generate income and not charge the public entity's budget.

One should appreciate, however, the efforts of the central government authorities to remove or reduce barriers to the growth of the market in Poland. These actions focus, on the one hand, on advisory and information services by the Department of Public-Private Partnership at the Ministry of Investment and Economic Development and, on the other, on changes in legislation thanks to which small and medium-sized enterprises can access PPP projects. *The government's policy on public-private partnership* of July 2017 is a roadmap for the PPP formula. If the principles adopted there prove applicable and if the atmosphere around the partnership changes, one should expect the volume and value of the market to grow

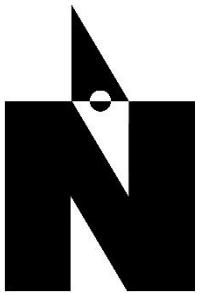
in the coming years and its structure to change. The Polish PPP market will become more similar to other European and global markets.

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Section ECONOMICS AND TOURISM



## ASPECTS CONCERNING PEANUTS CROPS ON SANDY SOILS IN SOUTHERN OLTEНИA

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### ABSTRACT

For the capitalization of the climate and soil conditions for the sandy soil region in Southern Oltenia by cultivating peanuts it is necessary to use varieties with large production abilities and a proper technology for the crops.

In view of its cultivation on south Oltenia sandy soils, there were carried out in the period 2004-2006, at the Plants Crops Research and Development Station on Sandy Soils Dabuleni, experiments have been set regarding aspects such as: the optimal seeding period, the recommendation varieties with high yield potential and balanced composition.

The research was conducted under irrigation conditions, in a three year rotation of wheat, peanut, maize.

Along with erect growth type varieties, known for their short vegetation period, rising and creeping growth type varieties can also be used; these varieties have a great production potential in our country conditions.

Establishing the proper time for seeding is especially since sandy soils are heating quickly but are also cooling quickly, the best seeding time is between the end of April- the beginning of May, depending on the date when the seeding depth has a steady temperature, minimal required for the seed to germinate.

**Keywords:** *genotype, sowing time, climate, productivity*

### INTRODUCTION

Peanuts contribute to the superior valorisation of sandy soils in our country, due to reduced requirements for soil fertility, low fertilizer and water consumption, soil enrichment in symbiotic fixed nitrogen. [9].

Peanut seeds have a high protein and fat content [1], [6], [11] and can be used in food and in the food industry.

The limiting factor of peanut production is heat, which restricts the area of spreading culture in the temperate continental climate in certain areas, where the

temperature conditions are improved either due to the sandy soil or due to local climatic influences of the mediterranean type. [9].

In the area of sandy soils in southern Oltenia, peanuts find favorable ecopedological conditions for growth and fructification, conditions that allow for the good cultivation of this species [7], occupying, within agricultural crops on sandy soils, the place of improving legumes.

In this paper are presented the results obtained at the Plants Crops Research and Development Station on Sandy Soils Dabuleni in experiences regarding: recommendations for soils with high production potential and balanced composition, the optimal sowing age.

## MATERIAL AND METHOD

The experiments were arranged in field by randomized blocks method on a sandy soil with a humus content of between 0.2-0.4%.

The research was conducted under irrigation conditions, in a three year rotation of wheat, peanut, maize.

In the time of the experience was respected the technology of growing peanuts on sandy soils.

The interpretation of research results was performed by variance analysis.

## RESULTS OBTAINED

[8] have highlighted both the role of variety and cultivation technology in peanut production in the US, concluding that for the production of high yields it is necessary to use productive varieties under the conditions of applying an appropriate cultivation technology.

The International Board for Plant Genetic Resources classifies peanut varieties after plant habitus into three main groups: erect, decumbent, procumbent.[3],[4]. Characteristic of these three groups is the correlation between the type of growth and the length of the vegetation period that grows from erect to deciduous and procumbent [1], [2].

That is why the first varieties that have been tested under the conditions of our country belonged to the group with erect port, starting from the reason that they, having a shorter vegetation period, are best able to achieve at the northern limit of the peanut cultivation area, satisfactory yields due to the maturity of a larger number of pods. The results obtained with these varieties were not satisfactory [5], [9] which led to the necessity of the creation of native varieties, materialized by the approval of two varieties: Dăbuleni, Viorica with erect port. Considering the high adaptability of peanuts, including in areas with less favorable climatic conditions, as well as the fact that the varieties in the dwelling and the procumbent groups are more productive, those in the procumbent group, with no positive correlation between the number of mature pastures and production [10], within varieties of varieties studied at the Plants Crops Research and Development Station on Sandy Soils Dabuleni were also included varieties belonging to these two groups (table 1).

**Table 1** The influence of the type of growth on the production of some peanut varieties

Group	Genotype	Average production (kg/ha)	The difference (kg/ha)	Semnification	Average kg/ha
Witness	Dabuleni	2434	Mt.		2434
Erect	Viorica	3220	+786	*	3112
	Sadovo	3005	+571		
Decumbent	Shulamith	3326	+892	*	3363
	Province China I	3400	+966	**	
Procumbent	Province Turcia	4123	+1689	***	3565
	B28	3008	+574	*	
LSD 5% =			545 kg/ha		
LSD 1% =			915 kg/ha		
LSD 0.1% =			1005 kg/ha		

The yields obtained, compared to the Dabuleni witness variety, in two varieties of each group, show that even under the conditions of our country varieties with a type of growth and a procumbent growth show a higher production potential than those with erect growth type. The production increase was significant in the Shulamith variety and distinctly significant in the Province China I variety of the dominant group and very significant, respectively significant in the Province Turcia and B28 varieties from the procumbent group.

Analyzing the main elements of productivity (table 2) it is observed that the number of mature plants on the plant decreases to the dominant and procumbent types of the erect type, the production increase in the varieties of these groups based on the size of the pods, the weight of 1000 pods growing distinctly significantly to the witness. For varieties with a procumbent growth type, the number of grains in the pod was distinctly significantly smaller than the witness, but the much larger beans, the weight of 1000 grains growing significantly distinct from the control. For varieties in the erect group and in the procumbent group, the yield on peeling was significantly lower than the witness, in the first group due to smaller grains, to the other due to the achievement of a smaller number of grains in the pod.

**Table 2** The influence of the type of growth on the productivity elements of some peanut varieties

Group	Number of mature pods on the plan	Weight a 1000 pods(g)	Number of grains in the pod	Weight a 1000 grains(g)	Yield on peeling (%)
Witness	26	1658	2.3	552	75
Erect	31.5***	1871	2.5	513	67 o
Decumbent	29.3*	2044**	2.3	660	70
Procumbent	28.5*	2111**	1.8 oo	761 **	65 o
LSD 5% =	2.5	251	0.38	121	6.8
LSD 1% =	3.4	352	0.5	168	11.6
LSD 0.1% =	5.2	497	0.72	241	18.2

The chemical composition of peanut beans is characterized by various authors [1], [6], [11] with a content of 20-30% protein and 45-60% fat. Among the analyzed varieties (table 3), those in the procumbent group are characterized by a high protein content (26.2%), and those in the decumbent group with a higher fat content (47.9%).

**Table 3** The influence of the type of growth on the chemical composition of the grain in some peanut varieties

Group	Protein (%)	Fats (%)	Cellulose (%)	Ash (%)
Witness	23.6	45.1	2.8	3.5
Erect	22.5	46.0	2.71	3.32
Decumbent	22.9	47.9	2.85	3.45
Procumbent	26.2	45.9	2.75	3.3

Under our country's conditions, the optimum sowing time is determined by achieving a minimum seed germination temperature of 12°C [9] in the soil at the sowing depth. Setting the sowing moment is important because the sandy soils heat up and cool down quickly, with the risk of going through periods when soil temperature falls below the minimum germination, affecting plant emergence and growth. The yields obtained at different epoch of sowing (table 4) highlight that sowing should be placed about 3 weeks after the soil temperature at 12°C is recorded in the soil, production increase in this case being very significant . The sowing time for peanuts must be set according to the climatic conditions of each year, beginning with the date when the minimum germination temperature of seeds is stabilized in the soil at the seed depth and the growing tendency to grow it (the end of April - beginning of May).

**Table 4** The influence of sowing epoch on the production of peanuts

The sowing epoch	Production (kg/ha)	Difference (kg/ha)	Semnification
12°C	1320	Mt.	
12°C + 7 days	1280	-40	
12°C + 14 days	1575	+255	*
12°C + 21 days	2237	+917	***
12°C + days	1645	+325	**
LSD 5% =		185	
LSD 1% =		273	
LSD 0.1% =		405	

## CONCLUSIONS

1. Climate and soil conditions in the sandy soils area of southern Oltenia are favourable to peanut culture.
2. The peanuts varieties with a type of decumbent and a procumbent growth show also in our country a higher production potential than those with erect growth, those in the decumbent group also being noted for higher fat content, and those in the procumbent group with a higher protein content.
3. The sowing epoch is determined by achieving a stable temperature of 12°C in the soil at the sowing depth, with a certain growth trend (end of April - beginning of May).

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# DIGITALIZATION AS A COMPONENT OF THE WORLD ECONOMY

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## ABSTRACT

Nowadays developed and developing countries start and continue to develop theoretical and legislative base of economy digitalization, increasing practical experience of introducing new technologies in the economical processes of at the same time. The article investigates the emerging technologies value in the economy and the economic growth of some selected countries. Authors summarise reports and researches of international organizations and scientific schools that explore such issues as smart technologies, informatization, digitalization, and so on. Taking into account the new technologies implementation features in the production processes of the selected countries provides scientific novelty of the paper. Authors describe the features of digitalization in different countries and group them according to the trends of the phenomenon. Economic, statistical and mathematical methods are used in the paper. In conclusion, the authors combine solutions from different countries to make recommendations for the exchange of experience.

***Keywords:*** *digital economy, digitalization, information society, emerging technologies, international comparisons.*

## INTRODUCTION

In recent years digital technologies became the effective tool in the economic relationship arising in the course of production, distribution, exchange and consumption of the benefits between economic subjects. In July, 2017 in Russia the state program "Digital economy of the Russian Federation" in which the complex of tasks which solution has to promote realization of strategic national priorities of the Russian Federation is established has been adopted. [1], [7]

Widespread introduction of these technologies in economic activity of society stimulates profound infrastructure changes in scales of all global economic space. By data for 2016 the specific weight of the sector of information and communication technologies (further – ICT) in Russia was 2,8%. In 2017 specific weight occupied in the sector of ICT in the total number of the busy population was 1,7%. [2]

The sector of ICT not only stimulates process of informatization of society in many developed countries, but also is the most dynamic segment of national economy and has significant effect on rates of economic growth. Now the majority of the countries seeks for formation of information society, and the most priority

directions of development are creation of the electronic government, introduction of information technologies in education, culture and health care.

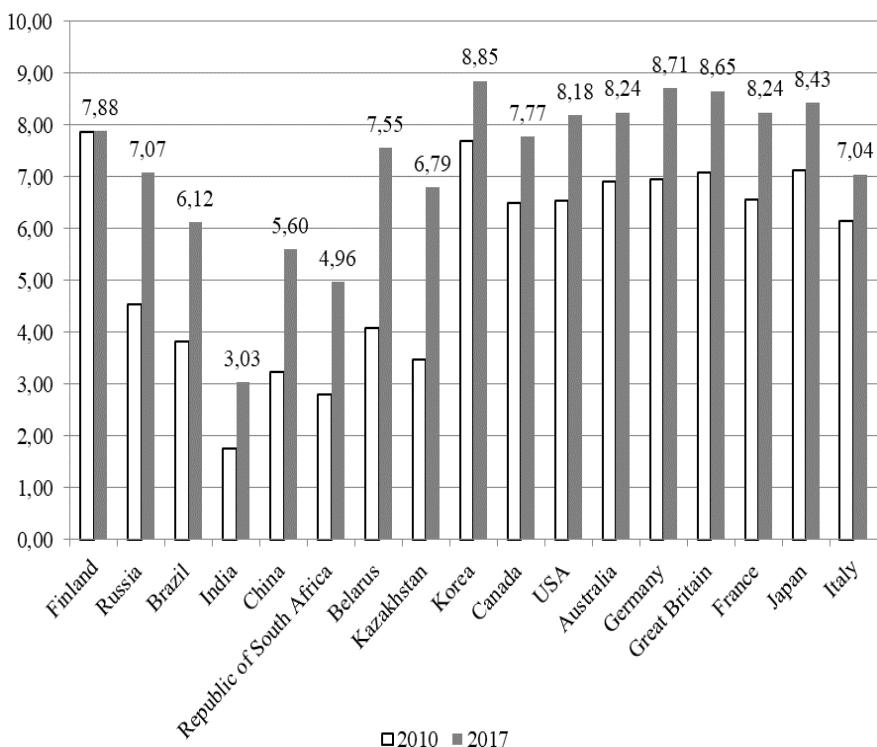
## **WORLD TRENDS OF DEVELOPMENT OF DIGITAL TECHNOLOGIES**

Tendencies of global world development of digital technologies are crucial for increase in competitiveness of economy, expansion of opportunities of her integration into the world system of economy, safety in society, stimulations of innovations and creation of new jobs. The level of development of the sphere of information and communication defines her place in world economic, political and social spaces. Due to the above, one of important questions creation of rating of the countries on the level of development of ICT in world information community and in a way of his measurement as which the index of development of ICT (IDI) acts is.

The index of development (IDI) allows to carry out classification of the countries with use of the indicators relating to infrastructure, use of ICT and skills of work with ICT. The purpose of carrying out the real research is objective international assessment of efficiency of branch of ICT on the basis of quantitative and control indices which will serve as the major contribution to discussion of policy in the field of ICT in Member states of the International Telecommunication Union (further – MSE). [3]

According to data of the International Telecommunication Union for the last year IDI values have grown in all countries of the considered selection, but differences in prevalence and use of ICT remain. Growth of values of the ICT index demonstrates the continuing expansion of access to ICT and their increasing use, these results also pay attention that the present levels of development of ICT in the world very strongly differ, and IDI values vary from 0,96 (Central African Republic) to 8,98 (Iceland). Following the results of 2017 Iceland is in the lead in ICT rating with the highest value of the integrated index (8,96 points), having pressed long time winning first place Republic of Korea (8,85 points) (fig. 1).

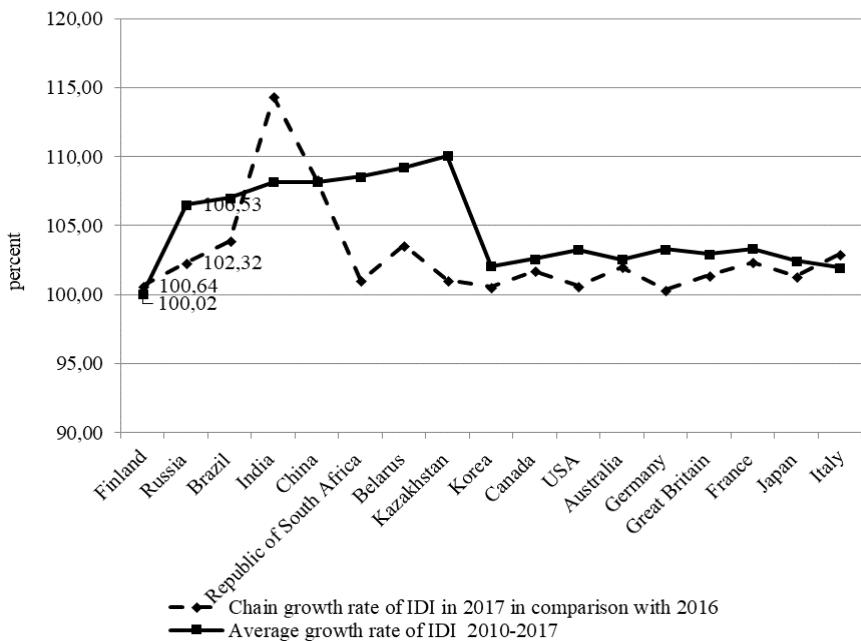
Other countries entering the top ten on IDI are mainly in Europe (Switzerland, Denmark, the United Kingdom, Norway, the Netherlands, Finland and Luxembourg) and also in the Pacific Rim (Hong Kong - China). So, Great Britain, takes the fifth position with value of rating 8,65 (a gain for 8,1% on comparison with the level of 2013), Japan, is in the 10th place - 8,43 points (an index gain in a year for 1,3%), Australia (8,24 points) and the USA (8,18 points) share the 14th and 15th place according to a gain for 4,3% and 8,6% of level of 2013 Finland takes the 22nd place in rating with the index 7,88 points. It should be noted that in dynamics of the developed countries saturation process is observed by information technologies owing to what the rate of a gain of the integrated index has the fading character. The smallest gain of the ICT integrated index among the considered set of the countries characterizes Germany and Korea – less than 1%. [4], [5], [6] Distinctive features of the countries - leaders in IDI are high levels of income, the competitive markets and the qualified population.



**Figure 1** Dynamics of the index of development of ICT (IDI) in 2010 and 2017 in some countries of the world

In the countries with the highest achievements according to the index of development of ICT the governments recognize ICT as the serious engine of growth, innovations and economic development. For stimulation of information economy they have planned a number of the large purposes in the ICT area, including ensuring superfast Internet access for the most part (and sometimes and for everything) the population, assistance to development of wireless broadband access (including LTE) and introduction of ICT in houses. For example, in the Digital agenda accepted by the Evraziiskiy economic union (further – EAEU), providing general broadband access can provide a gain of gross domestic product (further – GDP) to EAEU till 2025 for 1,7%, and economy level due to elimination of legal barriers can potentially reach 2,6% of GDP. It is expected that introduction of Digital agenda of EAEU will accelerate penetration mobile communications closer to saturation levels due to regional harmonization of regulation, falling of the prices and growth of the competition. Influence of these processes on GDP of EAEU can provide a gain to 0,76% till 2025. According to European Parliament, such innovations as cloud services and analytics of data, will be able to add 200 billion euros to GDP of Europe by 2030 due to increase in efficiency of branch processes. [8]

The return tendency is observed in economy of developing countries. From the considered set of the states India – 14,3% of a gain in 2017 in comparison with 2016 (IDI has made 3,03), the Republic of South Africa – several more than 1% of a gain differs in the highest rates of development (IDI has made 4,96). Russia in 2017 has fallen by the 45th place from 176 considered countries with value of the index 7,07 (in 2016 Russia took the 43rd place with value of the index 6,91 at value of the leading country 8,80 points). Average annual rate of a gain of the integrated index in Russia from 2010 for 2017 was 6,5% (fig. 2). It should be noted that the value of the integrated index of development of ICT for Russia in 2017 is 6% lower, than for the developed countries (7,52 points) and 60% above, than for developing (4,26 points). The Russian dynamics of development of ICT has allowed to reduce a rupture of values of the IDI index across Russia and the leading country of (Iceland) (fig. 2). [4], [5]



**Figure 2** Dynamics of chain and average growth rates of the index of development of ICT (IDI) in 2010-2017 in some countries of the world

The analysis of average rate of a gain of the integrated index of development of ICT from 2010 for 2017 shows rather high rates of development of Russia. At the same time such developing countries of the studied selection as Kazakhstan, Belarus and the Republic of South Africa are characterized by the highest annual average rates of a gain which are 10,1%, 9,2% and 8,57% respectively. Comparison of IDI values for the period between 2016-2017 shows that the largest rates of a gain of IDI value are characteristic of such countries from the studied selection as India (14,3%), Belarus (3,57%), China (8,3%) and Brazil (3,9%) significantly exceeding chain rate of a gain of Russia which is 2,3%. At the same time, chain gains of other countries in this sample it is less, than across Russia. For example, in

Finland, the USA, the Republic of Korea, Germany the IDI index for the last year has increased less, than by 1%. While Russia begins to reach saturation level, in particular as for contracts for mobile cellular communication and access of the Internet, households of India, Belarus, China and Brazil where levels of penetration remain much lower, still have the huge potential for growth. Drawing a parallel at rates of development of ICT in developed both the developing countries and the place of Russia we will note that the rate of a gain of development of IDI in Russia in 2017 in comparison with 2016 was slightly higher than the level of the developed countries (2,0%), but there was lower than the level of developing countries (4,9%) and in general on the world rate of a gain of IDI value – 4,9%. [4], [5]

In spite of the fact that in one year the majority of the countries don't move sharply up in the rating of IDI (and some countries fall in rating, for example, Russia), there were some considerable and remarkable changes. Developing countries on the level of development of ICT are given in table 1 most dynamically, that is those which have moved up to the greatest number of steps in the general IDI index. [3]

**Table 1** Most dynamically developing countries in IDI rankings, 2016-2017

Country	IDI rank 2017	IDI rank change
Uzbekistan	118	8
Afghanistan	81	6
Croatia	114	6
Suriname	139	6
Uganda	28	6
Uruguay	111	6
Lao P.D.R.	112	5
Latvia	122	5
Myanmar	67	5
Namibia	80	5
Timor-Leste	135	5
Turkey	95	5

Apparently from table 1, the most dynamic jump shows Uzbekistan, having risen to 8 places up and having taken the 118th place in rating. Follows him, Afghanistan, Croatia, Suriname, Uganda and Uruguay, having improved the positions on 6 places. Thus, the carried-out analysis has shown that among 176 countries entering in members of the International Telecommunication Union are strongly differentiated on the level of development of digital technologies.

## CONCLUSION

Direct impact of the digital capital on growth rates of gross domestic product significantly differs in developed and developing countries. However optimistic forecasts of the World Bank confirm growth of this indicator in developing countries owing to decrease in a digital divide in world economy. At the same time, it is specified in the Report of the World Bank that the qualitative characteristic of increase in welfare of people due to introduction of digital technologies isn't supported with quantitative measurement of the received economic benefits. Thus, the relevance and prospects of development of the statistical approaches, techniques and indicators characterizing welfare of the person in information society and the benefits acquired by him as a result of digital transformation is quite obvious. [9]

In recent years in Russia in the field of development of digital technologies a number of the reforms directed to decrease in administrative barriers and creating favorable conditions for development of information society, improvement of quality of services in the sphere of information and telecommunication technologies is realized. At the same time in the conditions of the fierce international competition in the sphere of ICT realization of further measures for improvement of regulation in the considered sphere is important that it will demand essential investments (both state, and private) in infrastructure, development of personnel potential and also in creation of favorable investment climate for development of the information and communication sphere. The major market factors which will provide growth of number of subscribers is the extensive growth of coverage of small settlements communication networks of average and large the Internet – providers. In this regard, revival of providers of satellite broadband access is possible. Growth of a share of package offers among new connections of telecom operators will become the main trend of the market of broadband access in Russia in the medium term.

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# ECONOMIC FACTORS OF PROSPECTING AND EXPLORATION DEVELOPMENT ON THE RUSSIAN ARCTIC SHELF

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## ABSTRACT

The oil and gas of the Russian Arctic shelf is one of the most important sources of the country's hydrocarbon raw materials. However, despite the sharp activation of geological exploration in Russia in 2012 - 2014, the geological study of the Arctic shelf remains extremely low. At present, the absolute majority of license areas of the shelf are distributed between PJSC Gazprom and PJSC Rosneft. The article notes that the lack of access to the shelf for other Russian and foreign companies can significantly slow down the process of its geological study. Also, as a shortcoming of the offshore licensing strategy adopted in Russia, the focus is on local licensing areas and the absence of the possibility of studying regional patterns. In the context of economic sanctions, an important problem is the almost absolute dependence of the geological exploration process on the shelf on imported equipment and technologies. It was noted that the existing fleet of domestic offshore drilling rigs is not able to fulfill the license obligations of Gazprom and Rosneft. In this regard, it was noted that the most important condition for successful offshore exploration is the availability of a production base and domestic technologies for offshore exploratory drilling. It is established that with the current trends in hydrocarbon sales markets, the cost-effective development of shelf deposits is problematic. It is concluded that the program for studying and developing the shelf should be adjusted in favor of financing the most promising projects in coastal and transit areas near production areas with developed infrastructure. The main points of the strategy for the development of the Arctic shelf zone in addition to the development of hydrocarbon reserves are highlighted: the development of alternative energy, the revival of the reliable hydrometeorological services, the increase in cargo transportation along the Northern Sea Route, and the exploration and development of ore deposits in the region.

**Keywords:** *Arctic shelf, geological exploration, seismic exploration, licensing, profitability.*

## INTRODUCTION

Currently, one of the most important factors that may lead to a reduction in oil and gas production in Russia is the depletion of well-established deposits. Newly developed fields are usually located in hard-to-reach areas with a harsh climate, characterized by complex mining and geological output conditions. Continuing advancement of world innovative technologies today allows for the cost-effective developing hard-to-recover oil and gas reserves, but Russia faces a serious lag in the technical and technological support for the exploration and extraction of these resources.

We believe that in the current environment of low prices and excess supply of hydrocarbons, high-cost Russian oil and gas will be uncompetitive in the world market, which is one of the major reasons for the reduction in hydrocarbon production.

## PROBLEM STATEMENT

All sources of hydrocarbon raw materials available in Russia can be divided into three groups [1]:

1. Oil and gas from traditional deposits in long-established fields.
2. Hard-to-recover reserves, including shale oil and gas.
3. Hydrocarbons of the Arctic shelf.

The reserves of the first group are concentrated in the old fields with developed infrastructure and therefore these are the most attractive ones. The development of these reserves is likely to provide a significant part of the capital cost savings. However, the evidence from practice suggests that geological exploration in these areas is ineffective, since they lead to the discovery of relatively small deposits with reserves not exceeding 1 million tons, while costs for their implementation are high. For example, small deposits discovered in Western Siberia were not profitable even at oil prices over \$ 100 per barrel. Nevertheless, the development of small deposits in the old oil and gas bearing areas has been implementing through the introduction of new methods to increase the production capacity of reservoirs, as well as due to the devaluation of the ruble in 2014-2015. However, it is no longer possible to maintain production at the same high level.

Reserves of oil fields that are relatively unfavorable for extraction in terms of geological conditions of occurrence and (or) physical properties of oil are considered hard-to-recover. Extraction of such reserves requires considerable expenditures of material, labor and financial resources, employment of non-traditional technologies, special equipment, reagents and materials. According to experts, more than 60% of the explored oil reserves are hard-to-recover [3], most of them currently being of insufficient investment attractiveness for oil companies.

The largest source of alternative oil reserves in the country is the Bazhenov Formation – the rock horizon in the central part of the Western Siberia at a depth of 2 to 3 thous. m. The deposits of the Bazhenov Formation spread over an area of about 1 million square km, contain shale oil with a bed formation thickness of 10 to 100 m. The resources of the formation are estimated at 100-170 billion tons. [5]. It should be emphasized that the production of Bazhenov oil today is no more than 0.7 to 1 million tons per year. This is mainly due to the fact that thin and almost impenetrable shale rock beds do not allow oil to be pumped out using traditional methods, and there are practically no new economically viable technologies for developing such reserves in Russia. In order to solve this problem in 2017, the Ministry of Energy of Russia initiated a special national project. The goal of this project is to create technologies for precise localization of reserves, optimize drilling, and study the effectiveness of thermochemical methods of impact on the reservoir by integrating the technological and scientific potential of PAO Gazprom Neft, leading research centers, oilfield services companies, and manufacturers of

the equipment. The project implementation should render the reserves of the Bazhenov Formation ready for industrial development; and reduce the cost of oil production from the Bazhenov reservoirs as low as possible. However, it must be emphasized that it is scientific organizations that were almost only ones to confirm their participation in the project. Oil companies currently prefer to develop the Bazhenov Formation independently, without placing this task in the priority category. The lack of interest of Russian vertically integrated oil companies in pooling efforts for the most effective implementation of the national project to develop the Bazhenov Formation can be attributed to uncertainty of the legal status of these works.

Based on the foregoing, it can be concluded that the first and second group of hydrocarbon sources will not be able to maintain the output at the achieved level, i.e. 500 million tons of oil and 600 billion cubic meter of gas per annum [4].

## **RESEARCH QUESTIONS**

Let us describe the situation that has developed to date in the field of geological exploration on the Arctic shelf.

It should be noted that despite the surge in geological exploration in Russia in 2012-2014, the Arctic shelf has been studied insufficiently as compared, e.g. with the shelf of Norway or with the shelf of the American part of the Chukchi Sea.

Exploration volumes increased significantly due to the assignment of 93 license areas to the largest oil and gas producing companies, PAO Gazprom Neft (38 sites) and PAO Rosneft (55 sites). The companies carry out the drilling of additional exploration wells, as well as geophysical activities (in particular, 2D and 3D seismic surveys).

The distribution of the most attractive offshore areas between the two largest players in the oil and gas market has entailed a controversial situation. On the one hand, the lack of access to the shelf for other Russian and foreign companies can dramatically slow down the process of geological survey. On the other hand, the need to fulfill license commitment compels Gazprom and Rosneft to carry out geological exploration following the established schedule of work.

Note also that the current scheme for the distribution of licenses for the development of offshore fields does not allow the use of multiclient surveying or some other tools in geophysical operations. This tool is widely used in world practice and implies that service companies independently select shelf areas, conduct geological exploration at their own peril and risk, and then repeatedly sell the information developed to all those concerned. Implementation of this scheme by the Ministry of Natural Resources of Russia would allow receiving information on earth depth at minimal costs for the state budget and the companies. A common world practice involves the development of complex fields using efforts of several companies to reduce risks. When entering the project, the partners are required to purchase the survey findings to estimate the amount of reserves and their own risks. At the same time, the key resource user will compensate for a part of the expenses incurred, while the service company will make a profit.

Furthermore, the concentration of activities on local licensed areas and the lack of the possibility of studying regional trends are on the downside of the current Russian system of licensing on the shelf. To address this issue, public funding or joint research by Russian and foreign companies is necessary.

The foregoing allows for the conclusion that it is necessary to revise the existing shelf licensing procedure.

A particularly pressing issue in studying the depths of the Arctic shelf is the almost absolute dependence of the geological prospecting process (mainly, of geophysical research) on imported equipment and technologies.

One of the principal methods of geophysical activities on the shelf is seismic exploration, which makes it possible to evaluate the structure of the earth depth and locate probable places of occurrence of hydrocarbons on the basis of dynamic interpretation based on the anomalies of the reflected signal. Alongside the widely used 2D and 3D seismic survey techniques, broadband seismic methods are rapidly developing today, which are significantly more informative, with comparable operational costs.

The broadband seismic techniques have been developed exclusively by foreign companies: CGS (Broadseis technology), PGS (GeoStreamer technology), Sercel (Sentiels technology), Western Geco (Izometrix technology), etc. Among these technologies, GeoStreamer is the undisputed leader in broadband marine seismic surveys both in productivity of offshore operations, and in geological performance. Because of the economic sanctions, these companies actually left the Russian market.

Today, the Russian service companies can employ none of the said technologies. In addition, it should be emphasized that Russian marine geophysical companies such as OAO MAGE (Marine Arctic Geosurvey Expedition), OAO DMNG (Sakhalin Geophysical Company, Dalmorneftegeophysica), OAO SMNG (Sevmorneftegeophysica) are not equipped with modern specialized vessels for 3D seismic exploration. As a result, current 3D seismic operations on the Russian shelf are lagging behind the world level by more than 15 years [4]. This means that only foreign contractors can perform high-tech 3D work. Due to the imposed sanctions, most foreign contractors cannot operate as before.

Another complicating factor is the inability to conduct 3D seismic survey by specialized vessels in ice, as there is a risk of cutting the outboard equipment by ice. As the case stands, in the Eastern Arctic, only 2D seismic survey is possible during the ice-free period, which lasts only 1.5-2 months in these arctic surroundings.

Availability of a reliable production base and advanced technologies for exploratory and, subsequently, operational offshore drilling is key to successful exploration on the shelf. However, it should be noted that the Russian-owned fleet of domestic drilling rigs is not in a position to fulfill the license commitments undertaken by PAO Gazprom or PAO Rosneft in the offshore areas [1].

An important factor limiting intensive shelf development is the issue of environmental protection. The spills of oil have a negative impact on all participants of the Arctic food chains. Some Arctic faunal forms are particularly sensitive to oil

spills, since pollution with oil and oil products will degrade fur and feathers heat-insulating properties. Today, there are no reliable technologies for eliminating such accidents in the world in the presence of ice cover. This problem is extremely urgent for polar water areas, where mitigation of accidents is complicated not only by the presence of a thick ice cover, but also by the polar night, low temperatures, strong winds, and lack of infrastructure.

In the event that all license commitments have been delivered on the offshore fields, significant volumes of oil and gas will enter the market. Let us consider the possibilities of effective sales of this hydrocarbon raw material.

In recent years, the competition for oil and gas markets has seriously worsened. According to initial forecasts, a portion of the gas from offshore fields, in particular Shtokman field, liquefied on the shore of the Kola Bay was to enter the US market. However, the development of shale gas reserves, as well as the discovery of new deposits in favorable economic and geographical conditions, let the US abandon imports.

The aggravation of the geopolitical situation and the deterioration of diplomatic relations with Europe compel Russia to turn to the market of the Asia-Pacific region, which is located in close proximity to the Russian offshore projects Sakhalin-1 and Sakhalin-2.

Today, the Sakhalin shelf projects based on the production sharing agreement (PSA) are rather effective. Implementation of the projects has become quite profitable for the state budget due to the main investments within the PSA made by foreign participants. Thanks to the implementation of these projects, high-technology industrial and social infrastructure facilities have been created in the Sakhalin Region. The products of the gas liquefaction plant located in the region are sold to Japan, Korea and China.

In contrast, offshore projects in the Barents Sea, where the PSA scheme is not applied, have not become effective even given the substantial government investments for their implementation.

Increased oil production in the US is certain to have global consequences, since it is the United States and China that are the main consumers of hydrocarbons in the world. There is a high probability that the surplus of hydrocarbons produced in other countries and not in demand by America will enter the world market to lower the price of oil. In addition, it should be borne in mind that significant volumes of oil and gas are concentrated in Iran, Iraq, and Libya, which for political reasons are currently unable to supply in full. Consequently, a shortage of hydrocarbons in the world market is very unlikely. In periods of surplus, producers with a lower production cost are found in a more favorable situation, meanwhile, the production costs of Russian hydrocarbon raw materials rather high. Moreover, the cost of delivery of the hydrocarbons produced to the consumer in Russia is a multiple of what is recorded in the Middle East. In this situation, with a decrease in world prices for hydrocarbons, the companies operating on the shelf face extremely high risk of losses.

Consequently, we may conclude that implementation of costly offshore projects can be frozen before the market conditions are optimized. Therefore, it is advisable

to adjust the program of study and development of the shelf in favor of funding the most promising projects in coastal and transit areas near production areas with highly-developed infrastructure.

It should be emphasized that the Arctic zone is a very important region for Russia not only in economic terms, but also geopolitically, therefore the need for its development cannot be attributed to high hydrocarbon potential only. The main directions of the development strategy of the Arctic zone in addition to the development of offshore projects can be stated as follows.

1. In the Arctic zone, the use of alternative energy, especially for energy supply to small settlements located at considerable distances from infrastructure facilities, can become extremely popular. Laying pipelines or power lines in these territories is economically inexpedient. In our opinion, the use of the following energy sources is possible:

- wind energy, due to an exceptional potential the Arctic region holds. To successfully unlock the potential, it would be required to adapt the wind generators designed for Europe to the harsh climatic conditions of the North;

- solar energy, which can be successfully used in the conditions of the polar day, also provided that the existing equipment is adapted to the local climate;

- gas hydrates, often located in the Arctic near the surface.

2. Reliable hydrometeorological support. Currently, the equipment used for meteorological observations is obsolete, the number of observation points reduced significantly. It is against this background that the meteorologists' performance and the accuracy of forecasts lag behind current requirements.

3. Increased cargo transportation along the Northern Sea Route, which is the shortest sea route between Europe and Asia. It passes through the seas of the Arctic Ocean (Kara, Laptev, East-Siberian and Chukchi) and has a length of about 2,500 nautical miles. The average duration of passage of the Northern Sea Route is 10.6 days [2]. Transportation of equipment for the development of Arctic deposits and the need for subsequent export of extracted raw materials will require a complex infrastructure for the delivery and storage of oil fuels. An alternative is the integration of Arctic LNG projects into transport and energy schemes of existing projects.

The role of the Arctic region as a transport corridor is currently increasing due to the reduced ice cover in some areas of the Arctic Ocean. In this regard, it becomes possible to consider the Arctic zone of Russia as an important transport route that can connect Europe and Asia. The main advantages of the Northern Sea Route are no piracy in the region and cutting time of transportation. For example, it is possible to carry cargo from Norway to Japan up to 21 days faster than through the Suez Canal [2].

An additional advantage of the Northern Sea Route is a possibility to bunker vessels with natural gas from onshore or offshore fields almost throughout its entire length. This circumstance can also contribute to improving the competitiveness of the NSR.

4. Exploration and development of ore deposits in the Arctic zone. First of all, these are potential ore deposits in the north of the Eastern Siberia, which reserves can be used for the subsequent manufacture of solar batteries, as well as for the long-term storage of the accumulated energy.

## CONCLUSION

In view of the foregoing, the following conclusions can be made.

1. Additional exploration of hydrocarbon reserves in well-established fields discover small deposits, which development is not cost-effective, even with oil prices exceeding \$100 per barrel, because of high production costs. More than 60% of the explored oil reserves in Russia are hard-to-recover, thus having no investment appeal for domestic oil companies. To develop the deposits of the Bazhenov Formation, the largest source of shale oil in Russia, a national project of the Ministry of Energy has been initiated. However, today the large Russian vertically integrated oil companies show no interest in joining efforts to implement the project. Thus, hydrocarbons from traditional deposits, as well as hard-to-recover reserves, cannot serve as a reliable base for maintaining oil and gas production at the existing level.

2. The Russian Arctic shelf accommodates significant reserves of oil and gas; however, the shelf deposits are extremely understudied in geological terms. The pace of study and development of the Russian Arctic shelf has seriously slowed down due to the imposing of economic sanctions. At present, geological survey of the shelf almost absolutely depends on foreign technology and technology. There is a significant lag in the technical and technological security of seismic and drilling operations on the shelf as compared with the world practice.

3. The shelf development is limited by the environmental issue, as currently there are no reliable technologies for liquidating oil spills in ice conditions in the world.

4. Compliance with the license commitment of PAO Gazprom and PAO Rosneft in all offshore licensed areas under the current licensing system, given low oil prices, may lead to excessive exploration of potentially unclaimed hydrocarbon reserves.

Large-scale development of offshore fields in the Arctic region can be suspended for economic, technological and environmental reasons.

6. The Arctic zone can be developed in alternative directions not related to the extraction of hydrocarbon raw materials.

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# PRODUCTIVITY IMPROVEMENT IN A MANUFACTURING COMPANY – CONCEPTS, METHODS AND TECHNIQUES

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## ABSTRACT

The article presents a new approach to productivity improvement in a manufacturing company, based on a rich collection of concepts, methods and techniques in the scope of production management. Productivity improvement is a complex technical-organizational-social undertaking, implemented in order to improve performance of the entire enterprise. This approach assumes continuous productivity improvement in all phases of design and operation of the production system. The strategic, comprehensive approach towards productivity improvement is currently becoming more and more important; it is expressed in striving for the implementation of contemporary, complex management concepts. The result of the analysis is a prepared productivity improvement methodology taking account of new production paradigms, among others: Lean Manufacturing, Lean Logistics, Agile Manufacturing, Total Productivity Maintenance, Theory of Constraints as well as Dynamic Process Management. The summary emphasizes the importance of preparing a new productivity improvement methodology for improving production management practices focused on productivity growth.

**Keywords:** *productivity, productivity improvement, manufacturing company*

## INTRODUCTION

Productivity is an extremely complex and interdisciplinary problem. It refers to macroeconomic systems, such as the world economy and economies of particular countries and to microeconomic systems, especially production systems, which, depending on the degree of aggregation, can be the entire enterprises, divisions, branches, work cells, as well as individual work posts. Productivity is one of performance measures, which characterizes well the company's operations; especially the degree of using all the resources being at its disposal.

With regard to manufacturing companies, productivity is understood in the economic-social (qualitative) and technical (quantitative) perspective. In the qualitative perspective, the productivity concept is presented as progress mentality expressed in the organization and support for different types of projects that are intended to continuously raise the effectiveness of business operations, improve the company's market position as well as increase employee satisfaction from work conditions and the quality of life. In this perspective such matters are stressed as [1]:

1. state of awareness, way of thinking focused on progress, continuous improvement of what already exists (faith in the progress of the mankind),

2. the will to improve the condition of the present, regardless of how good impression it makes or how good it really is,
3. continuous adjustment to changing conditions in the economic and social sphere,
4. organization and support for all types of projects, designed to continuously raise the effectiveness of operation of the organization, improve its market position and increase employee satisfaction from work conditions and the quality of life,
5. pursuit of using new techniques and new methods.

On the other hand, the quantitative productivity concept is the ratio of the amount of output manufactured and sold over the given period to the amount of input resources used or wasted. Productivity is therefore interpreted as the effective use of system's input resources – human work, capital, materials, energy – in the production of goods and services, being the company's output.

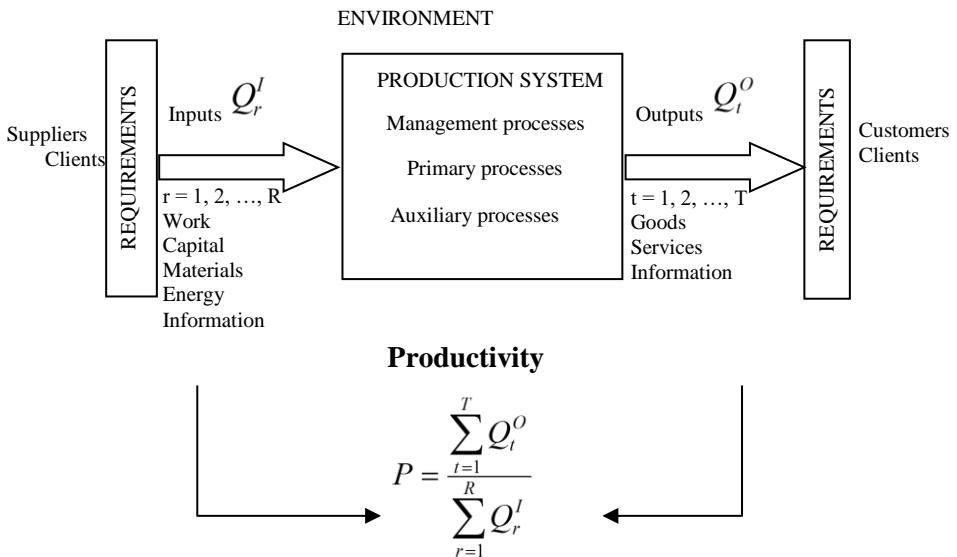
An important problem which a lot of attention has been devoted to are various approaches to productivity improvement. Productivity improvement on the grounds of KAIZEN continuous improvement philosophy is the subject matter of studies by such authors as: M. Imai [2], W. Lareau [3], while the problems of radical productivity improvement on the grounds of process reengineering – of the works by: M. Hammer and J. Champy [4], H.J. Harrington [5], L. Pacholski, W. Cempel and P. Pawlewski [6]. Production process improvement methods and techniques towards productivity improvement are discussed by: R. Harris, Ch. Harris, E. Wilson [7], D. Jones and J. Womack [8]. Productivity improvement by the application of production engineering tools has been examined by H.A. Salaam, S.B. How, M.F. Faisae [9]. Achievement of productivity growth using Lean Manufacturing to reduce cycle time for production processes by Value Stream Mapping (VSM) has been presented by B. Vijaya Ramnath, Vishal Chandrasekhar, C. Elanchezhian, Vinoth Selva Bruce. L, K. Venkataraman [10]. The implementation of lean tools along with the work research methods was the subject of research of P.P. Kulkarni, S.S. Kshire, K.V. Chandratre [11]. On the other hand, I. Dincută-Tănasea, C. Bordea, E. Câmpeana, D. Pop proposed a method to determine the level of productivity for qualitative and quantitative factors [12].

Currently, the most practical approach seems to be an analysis of work processes, namely overview and redesign of activities and the application of modern production management concepts, methods and techniques. At present, only companies using modern productivity improvement programs are successful, as they can rapidly and dynamically adjust to the changing conditions of the environment. Consequently, productivity assessment is also important in this perspective as vital for both managers and employees. It makes it possible for managers to understand business processes, formulate objectives and strategies, assess the degree of achievement, resource allocation, better plan, control and inspect operations, assess the company's competitive position in the market environment, assess time trends in utilization of the resources, identify problems in the organization, assess any introduced improvements and introduce the so-called management by results, i.e. motivate subordinates subject to tangible results they obtain. For employees important are clearly set goals and scope of responsibility,

determined using well selected productivity indicators as well as objective assessment of their achievements, contributing to higher motivation.

## PRODUCTIVITY MODEL AND ITS ASSESSMENT IN A BUSINESS

For practical effectiveness analysis of a production system, a simplified productivity model can be used, as presented in Fig. 1.



Symbols:

$Q_r^I$  – input resource quantity ( $I$  = input) of type  $r$ ,

$r = 1, 2, \dots, R$  – number of types of resources used by the production system,

$Q_t^O$  – quantity of products ( $O$  = output) of type  $t$  produced and delivered to the buyers,

$t = 1, 2, \dots, T$  – number of types of products manufactured by the production system.

### *Fig. 1 Productivity model*

As presented in Fig. 1, each production system may be characterized by its set of input resources, the processes inside, the set of products (goods and/or services), and its productivity can be determined [13]. At the same time, it should be borne in mind that any product must have its client, as productivity exists only when there is demand for particular goods or services as well as when the manufactured goods are provided to the client.

Currently, most Polish enterprises assess their operations through the prism of indicators of sales profitability and profitability of total capital involved in the operations. This is an insufficient measure sometimes not reflecting the results being actually obtained by the company, because profit can result from the

company's non-operational activities, such as, e.g. investment in shares, resale of some assets, etc. A measure that characterizes well the company's operations, especially effectiveness in using all the resources being at its disposal (capital, human or financial) is productivity [14].

The company, in order to be able to control its position on the market and adapt to the changing conditions of the environment by continuously improving the existing condition, should dispose of a productivity measurement system. The indicators selected to be used in the productivity measurement system depend on many factors, comprising the specific nature of the company. It is most important to ensure that the productivity measurement system is coupled with the company's economic and financial system and the production planning and recording system as well as with the production costs registering system.

Productivity is therefore a very "spacious" measure expressing how efficiently and effectively the organization executes its tasks, how efficient and effective it is in pursuing its goals and standing a comparison with the competitors.

The observation of productivity indicators makes it possible first of all to:

- assess the results achieved by the company as compared to other businesses, especially in the same industry,
- identify any "weak spots", i.e. areas of operations which are characterized by low productivity and require improvement,
- formulate productivity improvement programs and company's strategic plans,
- observe trends in productivity indicator changes, making it possible to introduce early warning mechanisms about possible threats and opportunities for the company,
- deliver feedback information about the consequences of any earlier introduced productivity improvement programs,
- link the company's remuneration policy with productivity of its organizational units.

In order for the company to effectively control its productivity and consciously stimulate its improvement, it must dispose of an effective and fast tool for its assessment. These requirements are fulfilled by the indicator method, consisting in analysis of a well selected set of productivity indicators. Productivity measures can therefore be classified in terms of:

- productivity definition: 1. direct – indicators expressed by the quotient of the production effects to the outlays incurred (technical perspective of productivity); 2. indirect – exceeding the technical perspective e.g. measures related work quality referring to the level of shortages, costs of shortages as part of production costs, etc.,
- complexity: 1. complex – general for the whole company; 2. partial – productivity indicators of capital, materials, energy and labour,

– method of expressing the parameters: 1. physical – are based on expressing products and resources only in physical units (e.g. pieces, kilograms, minutes, kilowatt hours, etc.); 2. economic – use, apart from the "physical" parameters, also amounts expressed by value (product prices, costs of resources, foreign exchange rates etc.),

– hierarchy: 1. measures for the company – assessment of effectiveness of the organization as a whole; 2. measures for the processes – assessment of effectiveness of the processes implemented in the organization; 3. measures for posts – assessment of effectiveness of the work posts.

## **CONCEPTS, METHODS AND TECHNIQUES USED IN THE COMPLEX PRODUCTIVITY IMPROVEMENT METHODOLOGY**

Productivity improvement consists in introducing changes of different nature at all levels in the company in the field of basic, auxiliary production, administrative and management operations.

For this purpose, every company introduces development programs based, above all, on implementing contemporary management concepts, the functioning of which should result in productivity growth (Table 1).

**Table 1 Management concepts/methods used in the complex productivity improvement methodology**

Concepts/ methods	Characteristics of the approach and expected benefits	Technologies/tools			
		5S	Process maps	PDCA/SDC A cycle	FMEA
Kaizen	Constant process improvement by small improvements, conducted in a continuous manner by all the employees. Benefits: shortened production cycles, assembly time reduction, increased productivity, reduction in waste, capital expenses and complaints,	●	○	●	○
Total Quality Management (TQM)	Complex business management by quality improvement. Benefits: "no quality" related costs and losses reduced to a minimum, growing customer satisfaction, quick and timely deliveries, higher production efficiency, improved business profitability,	●	●	●	●
Total Productivity Maintenance (TPM)	Quick refitting of technical resources (production line machines). Benefits: labour productivity growth, reduction in breakdowns, reduced quantity of internal waste, reduced number of complaints and production	●	○	●	●

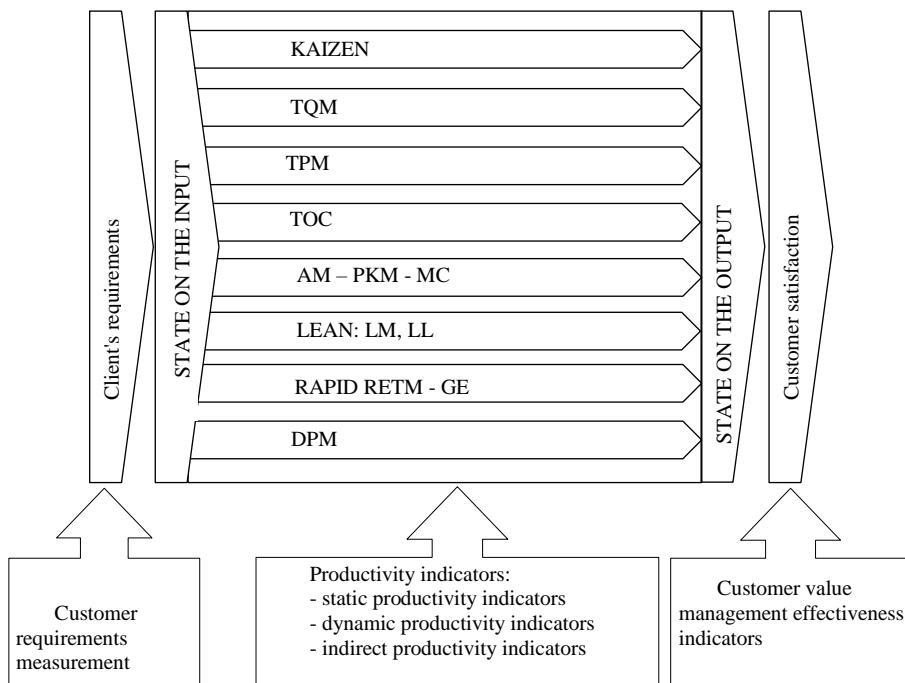
Concepts/ methods	Characteristics of the approach and expected benefits	Technologies/tools			
		5S	Process maps	PDCA/SDC A cycle	FMEA
	costs, reduced stocks and work-in-progress,				
Theory of Constraints (TOC)	Improved results by the identification of and focus on "bottlenecks". Benefits: shorter order lead time, improved resource management, shorter material passage time, reduced costs,	●	●	○	○
Agile Manufacturing (AM)	Fast response to opportunities and threats in the environment, creates and integrates processes, technologies and knowledge-equipped employees, so as to ensure fast response to the client's needs. Benefits: for all participants (manufacturers, suppliers, clients), integration (of resources, methods, technologies, organizational departments),	●	○	●	●
Lean Manufacturing (LM)	Reduced costs and maximized profits by eliminating all losses in the manufacturing process. Benefits: reduced shortages, refitting times, stocks and work-in-progress, productivity growth,	●	●	●	●
Lean Logistics (LL)	Optimization of intra-plant logistics, lean, complex material flow. Benefits: decreased product design costs, stocks and work in progress and personnel costs, shortened production cycle, higher efficiency, improved production quality,	●	●	●	●
Rapid Re <sup>TM</sup> method	Redesign of the operations process in a short time. Benefits: shortened production cycle and reduced costs, improvement in product quality and customer satisfaction, increased profitability and market share,	●	●	●	○
General Electric method (GE)	Revolutionary introduction of changes to the company in a continuous manner. Benefits: higher revenue and net income, significant productivity growth,	●	●	●	●
Dynamic Process Management	Fast response to changing significant conditions of operation. Benefits: focus of the company on customer	●	●	●	●

Concepts/ methods	Characteristics of the approach and expected benefits	Technologies/tools			
		5S	Process maps	PDCA/SDC A cycle	FMEA
(DPM)	satisfaction, identification and arrangement of the areas that require improvement.				

Techniques/tools used in the concepts/methods to a degree:

● - comprehensive, ▨- partial, ○- not used.

The productivity improvement concept assumes continuous observation, analysis and rationalization of systems. The so adopted course of conduct should be repeated in each of the system's organizational units with regard to every productivity improvement project. Fig. 2. presents a complex productivity improvement methodology.



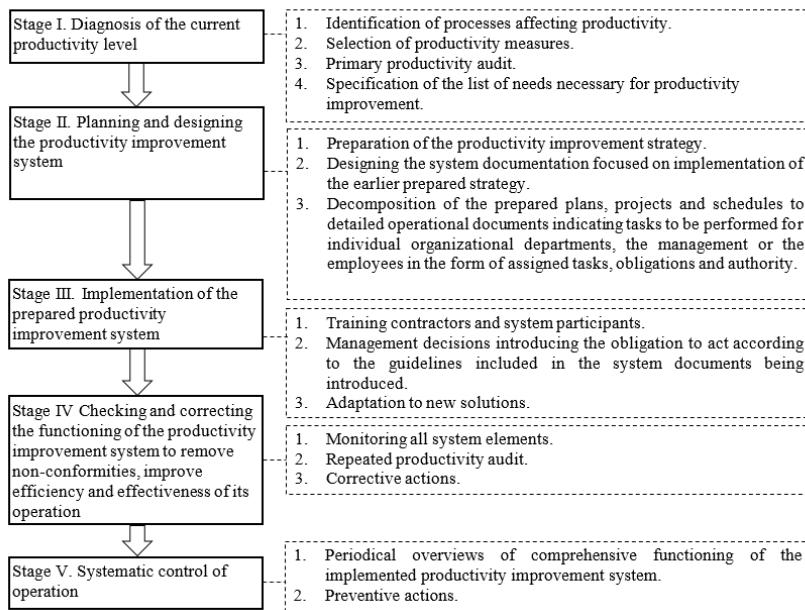
**Fig. 2. Complex productivity improvement methodology**

A significant problem in the functioning of the productivity improvement process is selection of the management concept (one or several), after the implementation of which the desirable changes will occur. The subject literature indicates that selection of the methods and their effectiveness is largely dependent on the specific nature of the business. Factors such: as business focus and organizational culture, depending on people, their preparation, experience, readiness for change and team problem solving skills, play a role here.

The productivity improvement process, as the unique type of activities designed to solve problems, should be a sequence of actions with the following course:

1. identification of the goal to be reached in the given organizational unit,
2. existing condition diagnosis using a well selected system of measures,
3. search for solutions and choosing the solution for implementation,
4. planning and implementing the improvements program,
5. controlling the obtained results.

In order to analyse and design the productivity improvement methodology in a manufacturing company and ensure its proper and effective functioning, stage-based implementation of a number of tasks of organizational, technical and social nature is necessary (Fig. 3).



**Fig.3. Stages in the implementation of the complex productivity improvement methodology**

These stages are binding both in the situation of local changes, coming down to productivity improvement on the level of a manufacturing work cell or a group of positions and those which encompass the entire company. These changes may involve a series of small modifications, but also projects being innovative in nature.

## CONCLUSIONS

The prepared complex productivity improvement methodology arranges the implementation process of contemporary concepts, methods and techniques focused on productivity growth, taking advantage of their complementary nature

and synergy resulting from using common specific tools. The methodology may be helpful for manufacturing companies in programming productivity improvement in the field of production management. Its advantage is that it puts emphasis on sustainable and harmonious implementation of modern management concepts.

To sum up, it may be said that the effectiveness of implementing particular concepts and the related methods is largely determined by the specific nature of the business. A great effect on the implementation process of contemporary management concepts is exerted by the organizational culture, dependent on people, their experience, preparation, commitment, readiness for changes and team problem solving skills.

The solutions presented in the study are practical. Their readiness for application consists in: making entrepreneurs aware that productivity of their organization depends on the degree of implementing the contemporary concepts, methods and techniques used in production management and proposing organizational solutions which will make it easy to implement an employee motivation system based on the Kaizen concept in the company, to ensure active and creative participation in productivity improvement projects. The answers to the following matters should be treated as challenges: considering new management concepts in the proposed methodology, starting research determining the factors that have particularly strong effect on the degree of its implementation as well as identification and elimination of barriers to introducing new management concepts.

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# INTERREGIONAL LOGISTIC CENTERS IN THE MODERN REGIONAL DEVELOPMENT: AN ESTIMATION OF NEEDS AND PROSPECTS (ON THE EXAMPLE OF THE SVIYAZHSK INTERREGIONAL MULTIMODAL LOGISTICS CENTER)

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## ABSTRACT

In this research we investigate the location rationality and the need of further investment in the Sviyazhsk interregional multimodal logistics center development which is situated on the Republic of Tatarstan territory. The aim of the study is an estimation of this logistic center possible load degree (as the capacities storage factor, etc.) from the perspective freight turnover due to its physical location in the region and its impact to the regional development. Basing on this analysis is determined the degree of conformity of the proposed picture to the real regional development. For the forecasting were used the formalized methods the advantages of which are the accuracy of results in the short term and the reproducibility ease. Also there were some disadvantages as within the study was revealed some data collection complexities hereat the forecast is based fully on the open statistical data of regional and national economic indicators. For the more detailed results was made an attempt of data collection (using the created questionnaire) an analysis of which would show the most adequate picture of the real needs of companies coordinating the storage facilities, transport services, information support, and the degree of their interconnections on the territory of the republic. With the forecasting using the random-walk method and the moving average the received results of the real and the future picture comparison looks satisfactory proved. The results of our estimation confirm the necessity of this center and demonstrate its full load based on the dynamics of studied freight turnover indicators.

**Keywords:** *logistics center, international transport corridors, freight turnover, Sviyazhsk interregional multimodal logistics center, random-walk method.*

## INTRODUCTION

Adopting the world experience of foreign countries in the management of freight flows Russia seeks to ensure the integration of national and regional logistics centers, similar to the TEN strategy, which implies the creation of a unified transport system. In the field of cargo management Lean production (JIT, KANBAN), DDT (Demand-driven techniques) and their conceptually improved versions were used as one of the first methods. One of the current and demanded

trends in the development of the logistics services market is the development, implementation and operation of smart machines for transportation tasks and rationalization of storage. Today the world's largest providers of logistics services use in the work drones and UAVs, robotic systems-loaders, automated storage and search systems in warehouses, IOT, smart sensors, RFID tags, etc. Now the technological development as an effective solution in the field of transport distribution is realized mostly in regional logistics distribution centers which unite and realize the possibilities of integrated supply chain management.

## LITERATURE REVIEW

The modern economic development of all Russian regions and its innovation reciprocity are impossible without realising the regional logistics potential. The logistics potential of the region is a combination of logistics infrastructure factors and objects that used in the decisions of regional and national strategic optimization tasks for material flows. One of the key links in the Russian economic growth is the development of the country's transport system and the realization its transit potential for securing the Euro-Asian links, therefore it is necessary to develop an effective logistics network. Modern methods allow estimating the logistics potential, and especially the possibilities of such logistic vehicles like logistic centers, which also allow transforming the foreign material flows to the interregional and intraregional [15].

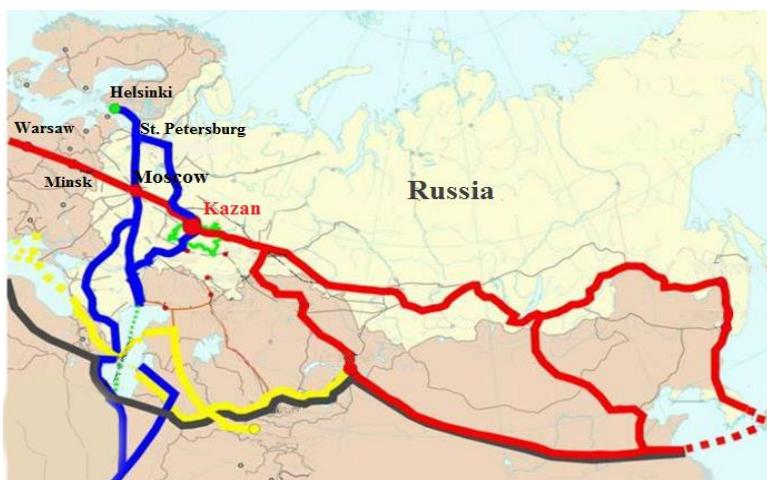
The current problems in development of logistic infrastructure and methods of its decision were studied by R. Alarcona, etc. [2], J. Blyde [3], H. Lean and others [4]. Issues of territorial development and impact assessment of logistical infrastructure on the competitiveness and efficiency of the regional economy were studied by O. Velychko [5], and in other researches [6]. While the number of researches of the logistics infrastructure development impact for the regional economies growth is serious, there isn't complex and easy in use (which is more necessary) methodological approach for evaluating this impact for the whole economy and separate territories. From the recognized point of view it is necessary to use the potential of the international transport corridors for the regional infrastructure development. Such position could be noted for example in such paper like [1] in which V. Khomenko and co-authors concentrate on the role of integration of Russia and in particular the Republic of Tatarstan in the network of international and domestic regional transport corridors, etc. This aspect has a central place in our study basing for the estimation of the regional logistic development prospects on the possibilities of regional multimodal terminal complexes network and in particular for the Republic of Tatarstan on the Sviyazhsky interregional multimodal logistics center (SMLC) data. For this aim the estimation of the prospects for the possible SMLC load degree basing on its (physical) location is achieved with the forecasting methods using.

## THE REGIONAL DEVELOPMENT OF THE REPUBLIC OF TATARSTAN IN THE GLOBAL LOGISTICS SYSTEM

Foreign and domestic experience shows that integrated logistics services which based on a stable demand growth promote the greatest economic efficiency. This point of view is confirmed with such evidences like the world GDP from the

beginning of the second half of the 20th century, exports and imports and positive income dynamics from the taken measures for the logistics centers creation. For example, in the Netherlands the transit logistics centers brings about 40% of the whole transport complex income, about 31% in the France and 25% in Germany. In the Central and Eastern Europe countries this share is about 30% in average. The total turnover of the European logistics services market is more than €600 billion. In these countries about 30% of logistics functions in all sectors of the economy are annually transferred to logistics companies [7] outsource.

The logistics centers (parks) are the market enterprises which provide information and physical support for the goods delivery. The concentration of complementary companies on a single platform makes possible to reduce the warehouses renting and the logistics services costs. For the main part of the Republic of Tatarstan firms concerned with the tasks of storage, acquisition, packaging and distribution to the next level by various ways of transporting with the channels like railroad, on water, automobile, aviation or with pipeline transport the cooperation will be the profitable decision (see for example Shikhalev, Vorontsov, etc., 2015). Analyzing the data available on the state statistic Rosstat website for the Republic of Tatarstan [8] for the period of 2011-2016 it is possible to note that about 80% of the region's total freight turnover was delivered with the railway transport. The majority of region's cargo turnover is concerned with the oil products, construction aggregates and cargos, chemicals and metals. Due to its geographical location the region has the strategically important position for the whole state in the cargo transportation system. The Republic of Tatarstan is the cross-over point for two important international transport corridors, "North-South" and "West-East" (Picture 1), so basing on these factors it is possible to predict an increase or decrease in freight flows through the region. Basing on these factors and due to the serious increase in the needs for large logistics center on the regional territory as a result of research and comparative estimation was chosen the location for such center in the Kazan transport hub, Zelenodolsky district near the Sviyazhsk railway station and at the mouth of the Sviyaga river.



**Picture 1** The international transport corridors passing through the Republic of Tatarstan territory

The purpose of the work is to study the prospects of the possible load degree (the capacities storage factor) of the SIMLC basing on the possibilities of its physical location and its possible impact for the regional economic development. The project of the SMILC was firstly included in federal programs and different strategies in 2006[9]. Nowadays has been completed the construction of such objects like a moorage wall for receiving river and sea vessels, railway access roads, an anti-radiation shelter for 600 people, roads and a traffic intersection built on the connection with the federal M-7 highway, and an upgrade of the all Sviyazhsk railway station's equipment[9]. According to the announced in 2012 data the estimated volume of SLC processing cargoes was 14.6 million tons a year; this is 25% of the total regional cargo traffic volume which is 45 million tons per year[8]. So, for the proposed aim of study it is necessary to clarify the actual volumes of cargo flows on the international transport corridors passing through the territory of Tatarstan for the period from 2017 to 2018 on the ITC №2 "West-East" and ITC №9 "North-South".

For such case it's better to analyze the part of "West-East" ITC as a Russian cargo transportation way to the Primorsky region ports and back. This includes Russian export-import and transit cargo traffic between the Asia and Europe. The aggregate freight turnover between China and Europe in 2015 reached more than 100 mln tons/km and has a growth potential up to 120-160 mln tons/km to 2020. In fact this value remained at 100 mln tons/km [9] in 2017 and the cargo turnover of the such Caspian ports like the Astrakhan, Olya and Makhachkala decreased from 10.9 million tons to 6 million tons in 6 years from 2010 to 2016 [8]. The project of the ITC "North-South" already could be estimated as profitable. Only from the beginning of the 2017 the volume of freight traffic on this direction has increased up to 20% and reached the value of 5 million tons [10]. However, according to the Russian Federation Federal Customs Service data in the last 6 years there was an opposite situation i.e. the volume of freight turnover with the major partners decreased[11], and the main type of goods were the food products, agricultural raw materials and timber, which are not fitted with the Tatarstan cargo turnover structure. An analysis for the Tatarstan of the typical trade turnover structure [8] with these corridors players and the same for the Russia i.e. their trade linkages with the ITC "North-South" and "East-West" projects countries participating shows the total trade turnover in 2017 11.8 million tons and 41.2 million tons. However, could we propose for the crowd a depot to SMILC capacities? For this purpose i.e. for the estimation of the level of current needs it is necessary to make a forecast basing on the open data and to concern it with the today's realities.

## METHODOLOGY

The intensive development of prognostication as a science in the recent decades led to the creation of multitude methods and procedures, and the value of these forecasting methods are not equal. There are a hundreds methods of forecasting [13] according to various estimates of foreign and domestic forecast systematics, with each author specifying his own classification of these methods. In our study the chosen prediction methods are based on the approaches described below. For example, in the research of E. Tikhonov [12] in the part concerned with the methods classification, the methods of forecasting firstly could be represented in classes like the intuitive and formalized. To the intuitive methods the author refers the

questioning method, brainstorming, the "commissions" method, etc. Intuitive methods are usually used in the auxiliary procedures for generating the predictive information. For the purposes of the research and its specific (logistics) for the information collection was chosen the questionnaire method. The organizations engaged in the cargo deliveries field were asked to complete a questionnaire to concretize their needs from the services of the regional logistics center. For the questionnaire results assessment was created the estimation method on the basis of generalized data of freight volumes. The advantages of this method are the cheapness and wide territorial coverage with the relatively short time costs but the lack of questioning is the reluctance of respondents to provide information, referring to the commercial secrets. In such case it's necessary to use the formalized methods consider forecasting models which are divided into the statistical and structural models. In the statistical models the functional relationship between the future and actual values of the time series as well as with the external factors establish analytically. For the forecasting was chosen the method described below due to its accuracy in the short-term forecast. As the forecasting process itself could be presented in two periods, the retrospection period  $T_r$  in the form of the available dynamic series and the prediction period  $T_f$  than we could note that for the larger ratio ( $T_r / T_f$ ) it will be more reliable forecast value, in ceteris paribus. It is important that the period of retrospection  $T_r$  has the same causal (factorial) character in general because after all we determine the character of the random increment "e" as a continuation of the same conditions with which were formed the levels of dynamic series levels in the retrospective period of  $T_r$ , before the main forecasting. Therefore, in a broad sense this type of forecast is concerned with the extrapolation. One of the most famous prediction models is the autoregression of the integrated moving average with the external factor [14]. The moving average method is one of the widely known methods for the time series smoothing. With this method applying this it's possible to eliminate the random oscillations and obtain the values corresponding to the influence of the main factors. The smoothing with the moving averages is based on the fact that the random deviations cancel out in the average values. This is realized as because the original levels of the time series replaced with the average arithmetic value within the selected time interval. Then the period shifts to one observation and the average calculation is repeated. For such cases the periods of average determining are taken the same at all times. Thus, in each analyzed case the average is centered, i.e. is referred to the midpoint of the smoothing interval and represents the level for this point. The choice of the smoothing interval depends on the study objectives. At the same time it's necessary to base on in which time period is the action and consequently, the elimination of the random factors influence. This method is used for the short-term forecasting [14]. After the Rosstat data [8] analyzing and making the calculations of the growth and increase in freight turnover for the last 5 years we observe a consistently low average annual growth rate (Picture 2), related to the economic situation in Russia. A sharp jump up to 2017 corresponds with the terms of trade softening. Based on the obtained results after the Rosstat data[8] analyzis we could forecast the cargo turnover volume with the multiplicative time series model constructing [14] to the fourth quarter of 2018. The general form of the multiplicative model (Y is the model value) will be the next:

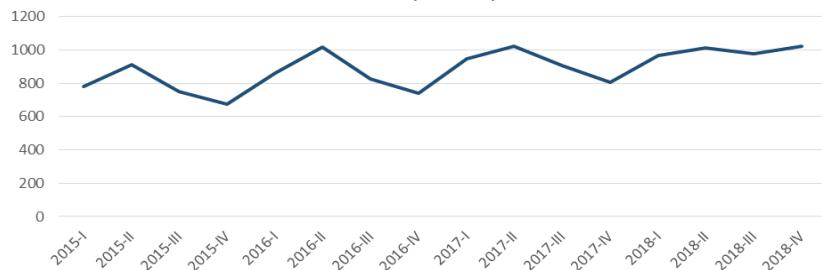
$$Y = T \times S \times R \quad (1)$$



**Picture 2.** An average annual road transport growth rate for 2012-2017

This model assumes that each level of the time series could be represented as a product of trend (T), seasonal (S), and the random (R) components. The predicted  $F_t$  value of the time series level in the multiplicative model is the result of the trend and seasonal components. To determine the trend (T) component let's use the trend equation (2). It is a table below with the predicted values quarterly, mln tons/km (Table 1).

$$T = 754.685 + 20.825t \quad (2), \text{ where } t - \text{the calculated period.}$$



**Picture 3.** The current and predicted volumes of cargo turnover

**Table 1.** The predicted cargo turnover values for 2018 in million tons/km.

Period	2017-3	2017-4	2018-1	2018-2	2018-3	2018-4
Forecast, mln t/km	905,21	807,10	969,71	1010,81	977,07	1022,25

Here is quarterly observed the seasonality (Picture 3). From the first to the third quarters there is growth, then a decline in the fourth quarter. The derived by years forecast shows a decrease in the cargo flows. For the reliability of the results we will construct the forecast using the random walk method and compare the results with the Table 1. Below are the forecasts for the 2018 quarters on quarterly 2015 - 2017 data with the random walk method (Table 2). The most of the Table 1 predicted values are within the forecast interval of Table 2. This means that the verification of results obtained by the random walk method with the dynamic series apparatus method should be considered as successful. So, the results of the quarterly

forecasts given in Table 2 for all 2018 quarters should be considered as the fairly reliable.

**Table 2.** The forecast for 2018 with the random walk method.

Quarter	2018 – 1	2018 – 2	2018 – 3	2018 - 4
Forecast, mln t/km	933,8 ± 42,6	955,2 ± 48,5	974,1 ± 63,3	1082,6 ± 63,4
Interval	[891,2-976,4]	[906,7-1003,7]	[910,8-1037,4]	[1019,2-1146,0]

With the moving average method based on data for the period 2011-2016[8] made a forecast for the cargo transportation volumes of the Republic of Tatarstan in million tons (Table 3).

**Table 3.** The forecast for 2018 with the moving average method.

Period	2011	2012	2013	2014	2015	2016	2017	2018
Mln.t.	171	165,4	160,5	140,3	142	145,7	265	243,7

## DISCUSSIONS

From the analysis of the obtained data we could come to the conclusion that the freight turnover through the Republic of Tatarstan is going to increase, which is also observed in the forecasts based on Rosstat data. In our study with the formalized forecasting techniques we tried to find the most adequate current picture of the real needs of regional companies. However, the study revealed difficulties in collecting data (especially with created questionnaire) and it is difficult to predict the full picture without supplier response. Due to this the realised forecast is based on the open regional and national data. The issue above remains necessary for the next part of the research i.e. to use the specific indicators for the excluding the transport costs of large players of regional logistics market. So, for the more precise estimation of the Sviyazhsky logistics center possible load it will be necessary to use the main regional players of the logistics market more detailed data (also on economically advantageous types of cargo, etc.).

## CONCLUSION

The territory of the Republic of Tatarstan is located very successfully in the logistics system of Russia which gives to the region some advantages, but the development of the Sviyazhsk logistics center still concerned with the number of controversial issues related to both the location of the facility and the prospects of its loading from all planned types of vehicles. The creation of regional logistics centers is always accompanied by risks related to their capacities storage factor (load degree) as it is necessary to crowd a depot to capacity. But as we could see the forecasts give an optimistic assessment which could be based on the total

turnover of the corresponding weight of the Republic of Tatarstan in the ITC "North-South" and "West-East". About a third of cargo deliveries volume passing through international transport corridors could ensure the full loading of the Sviyazhsky logistics center, and therefore we could conclude that the need for the development of the SMLC is confirmed. It could be reasonably argued that further development of the Sviyazhsky interregional multimodal logistics center allow to obtain a synergistic and multiplicative effect, which will increase the interest of local commodity producers and the regional economic positions.

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# MILLENNIUM TRAVELERS TOURISM CHOICES IN AN ERA OF GLOBAL THREATS OF TERRORIST ATTACKS – A CASE STUDY OF POLAND AND LITHUANIA

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## ABSTRACT

In tourism sector, young tourists are considered to play an important part in its future development. The literature shows that Millennial travelers, representing the so-called Generation Y, will create about 50% of the total tourist sector in 2020. Millennials are more diverse as a group than non-Millennials and are more interested in international travel and having global cultural experiences. That Millennial travelers are more carefree, and, perhaps therefore, more susceptible to various risks and threats, including terrorist attacks. The subject of the paper is young tourists from Poland and Lithuania and their choices regarding the tendency to travel and the choice a tourist destination. The aim is to assess the importance of travel costs and safety levels during the tourist decision-making process by the Millennium travelers from Poland and Lithuania in the context of terrorist threats existing in the world. This objective will be achieved through critical analysis of literature and empirical analysis of young tourists on the basis of a questionnaire survey carried out in Poland and Lithuania.

**Keywords:** *Millennium travelers, travel cost, safety level, terrorism threat*

## INTRODUCTION

The tourism sector has been seeing the influx of a new generation tourists in the market [1],[2],[13]. Relevance of this phenomenon is supported by the increasing scientific research on this topic. The Millennial Travelers or Generation Y are people born between 1982 and 2002 [2]. In scientific literature they are referred to as the future market [2].

Millennial Travelers area group of people who in the year 2020 will constitute about 50% of the tourism market [1]. Researchers raised the question, what distinctive characteristics they exhibit and what measures should therefore be used to target them and offer such tourism products which would meet their expectations (such factors, as ratio of price to safety). The challenge has become greater since the number of emergencies and crisis situations has grown worldwide in recent years. We also have had a growing number of tourist deaths caused by terrorist attacks in popular tourist destinations. For this reason, this challenge becomes even more important and requires multifaceted research. The subject of the research paper is young tourists from Poland and Lithuania, and their choices regarding their tendency to travel and their choice of a tourist destination. The aim of the study is to assess the significance of travel costs and safety levels during the tourist decision-

making process by the Millennium travelers from Poland and Lithuania in the context of the terrorist threats existing in the world. This objective will be achieved through critical analysis of literature. Empirical data analysis and its verification were carried out. Empirical analysis is based on the results of the survey research carried out in Poland and Lithuania among young tourists who belong to generation Y. To conduct the analysis, Statistical Program Statistica version 13 was used. To add, a statistical analysis was carried out using descriptive statistics (percentages, mode, median, mean, sum of ranks) and inferential statistics (Mann-Whitney U test and Chi-square independence test).

## MILLENNIAL TRAVELERS – WHO ARE THEY?

Pursuant to Strauss and Howe's theory [11], a new unique generation of human nation emerges about every 20 years (Table 1).

**Table 1** Brief Overview of Current Generations in Tourism [11]

Generation label	Approximate birth dates	Decision making	Earning and spending
Silent Generation	1925–1942	Barely active in the tourism market	Barely active in the tourism
Baby Boomers	1943–1960	Authority, brand, loyalty	Conservative, pay upfront
Generation X	1961–1981	Experts, information, brand switchers	Credit savvy, confident investors
Generation Y	1982–2002	Friends, little brand loyalty	Uncertain spenders, short-term wants, credit-dependent
Generation Z	2003 – 2012	Do not travel on their own and their travels depend on parents' decisions	Depend on parents' decisions
Generation Alfa	2013 –	Do not travel independently and their travels depend on their parents' decisions	Depend on parents' decisions

Each of the above listed generations is typical of a certain specific behavior pattern or model which affects not only their professional and personal life but also travelling. Table 2 lists characteristics of which travelers of Generation Y (the object of this article) are typical as well as their traveling peculiarities.

**Table 2** Y-Generation Travelers Mapped against Generational Traits [11]

Features	Explanation of feature
Travelling more often	Average number of trips taken has increased in the last 5 years
Exploring more destinations	Take more trips outside the local region and explore new areas of the world

Spending more many on travel	As a proportion of their income, spend more than any other
Booking more over the Internet	Early adopters of new travel technology
Experience hungry	Want a range of different experiences often involving everyday life and culture of places visited, including contact with local people
Information hungry	Consult a greater number of information sources to plan trips
Intrepid travelers	Are not deterred by problems such as terrorism, natural disasters and epidemics – mitigate these risks through information
Getting a lot out of their travel	Travel makes them want to travel more, serving as a stimulus to learn and develop, including developing greater cultural understanding

The Millennial generation is one of the largest generations in history – even larger than Baby Boomers [8]. Researchers are unanimous in stating that they are a group of tourists who willingly invest their time and money in travelling [8]. As stated, they see travelling not as an object luxury but as the natural law – their birthright [5].

Millennials are more diverse as a group than non-Millennials (Generations Baby Boomers and X), they are interested in international travel and global cultural experiences [1]. Research shows that most often they try to avoid traditional, mass and popular tourist routes, they do not stay at luxurious hotels, they can afford spending up to two months travelling [5]. These tourists are more open to novelties and are more interested in the environment which surrounds them while travelling as well as in people they meet while visiting foreign countries [2],[9]. Besides they are not familiar with pre-internet life or ruck-sacs!, smartphone ‘addicts’-free and fast WiFi-suffer from the Fear Of Being Offline (FOBO), likely to return later in life and word-of-mouth advertisers –opportunity and threat [7], they are looking for authentic word-of-mouth information, but not only from family and friends and mainly from anonymous people [3]. The main differences between the generations of Baby Boomers and X are the following: travel motivations, planning sources, preferred destinations and vacation activities [12]. As Morrison et al. [9] observe, they focus more on search of information on social networks and care about the opinion of a certain field of experts. They review about 10 sources on average until they decide to buy a travel, book a hotel, etc. [9],[14].

Some other differences can also be noticed in terms of comparison of this group of tourists and the previous generations. One of them is travel price. As Barton et al. [1]. put it, these tourists care about the price point as Millennials are less willing to pay more for travel. It is said that “they’ve discovered that travel doesn’t need to be complicated or expensive” [5].

As can be seen, the Millennial travelers have set new requirements for the tourism industry. Since it is one of the biggest generations coming to the tourism market, we must respond to their needs and meet their expectations.

## MILLENNIAL TRAVELERS AND TRAVEL RISK

The chosen tourist group travels more often and their travel geography expands (thus increasing the risk of facing crisis situations and emergencies during the travel). This leads to new challenges to persons who are responsible for the enlargement of the tourism sector. The Millennial travelers are more aware of travel risks' associations with digital and technology tools [12]. However, as noted by Woods and Davis [13] "millennials are also more willing to trade personal information in return for discounts, better products or more targeted offers".

Barton et al. [1] hold the view that the Millennial travelers are not so cautious since they tend to share personal information online, such as brand preferences, where they live, household composition, loyalty status and numbers, age and general personal information, frequent destinations, preferred airports, personal hobbies. As a result, they might become the target of terrorist groups since it is very simple to collect sufficient amount of information about them and to use it for planning attacks.

This group of tourists is more likely to behave in a different way when a potential danger arises. Whereas older generations tend to refrain from certain travels, young tourists travel according to the plan prepared in advance [4]. For this reason, they are often defined as brave tourists who regardless of anything travel abroad to gain some experience [6]. However, as research by Mura [10] demonstrates, young tourists "play with fear...but not too much". Additional risks and participation in emergencies give their travels the taste of venture and savor, however, to a certain limit.

## METHODOLOGY

The aim of the paper was to assess the significance of travel costs and safety levels during the tourist decision-making process by the Millennium travelers from Poland and Lithuania in the context of the terrorist threats existing in the world. As indicated in the literature review, both travel costs and safety level during a tourist trip are one of the most important factors determining the tendency of tourists to travel, and what is important in the context of our study, which tourist destination to choose. To determine the significance of these factors, a survey research was conducted among respondents from Poland and Lithuania aged 18-36. The survey questionnaire was conducted among students at the Faculty of the Economics and Management University of Szczecin in Poland ( $N=849$ ) and at the Faculty of Public Governance Mykolas Romeris University in Lithuania ( $N=652$ ), who accounted for 63.2% and 50.2% of the total number of people studying there, respectively. Only respondents who are tourists have been subject to the analysis, which was checked by asking respondents whether they travelled and how many times a year. Demographic and travelling characteristics of the respondents are provided in Table 3.

**Table 3** Profiles of the samples

Demographic and travelling characteristics		Country	
		Poland	Lithuania
Average Age	years	22.6	28.1
Gender (in %)	women	72.9	76.5
	men	27.1	23.5
Frequency of travelling (in %)	Less than once a year	7.5	11.8
	Once a year	16.8	29.1
	2- 3 times a year	42.8	39.4
	4 -7 times a year	20.6	14.0
	More than 8 times a year	12.2	5.7

The statistical package Statistica 13 was used for statistical analysis of the data. Descriptive statistics which is suitable for the Likert Scale was employed, namely, frequency expressed by means of percentage was used (ranging from 1=of no importance to 5=very important). Hypotheses for two independent samples were verified by applying nonparametric criteria of Mann-Whitney U test and Wilcoxon rank sum test. To compare the details of a few independent samples, Kruskal-Wallis test was applied. The statistical level of significance  $\alpha = 0.05$ , p value (Asymp. Sig.)  $\leq 0.05$  was chosen. The hypotheses were checked against the aim to find out whether the evaluation of significance of travel costs and safety level during the tourist decision-making process by the Millennium travelers depend on the country of studies (Poland and Lithuania), age, gender and frequency of travelling.

## RESULTS

First, it assessed how respondents evaluate the importance of factors determining their travel decision. As can be seen from the details of descriptive statistics (Table 4), both the level of security and travel cost are perceived as important or very important in Poland and Lithuania (over 70% of respondents).

Descriptive statistics (Table 4) indicate that in Poland the assessment of the importance of both factors determining the choice of tourist destination is on a similar level with a slight accent towards the level of security, while in Lithuania travel costs are assessed as a more important factor than the level of security. It is confirmed by such descriptive statistics as mode, number of modes, mean rank and sum of ranks. Statistical verification by Mann-Whitney U test indicated (Table 5),

when grouping variable is country, that in assessing the level of security by Millennium travelers there is no statistically significant differences between respondents from Poland and Lithuania. However, there are statistically significant differences between the respondents from Poland and Lithuania in the assessment of the importance of travel cost as a factor determining the tourist trip.

**Table 4** Assessment of the Importance of Tourist Factors According to Countries

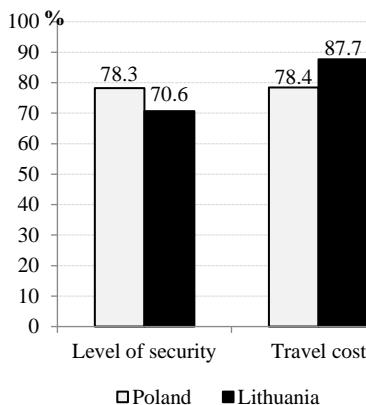
\* Scale for evaluation of the importance of tourist factors ranging from 1=of no

Country	Factor	N	Median	Mode	Number of Modes	Mean Rank	Sum of Ranks
PL	Level of Security	849	4	5	379	4.11	653841.0
	Travel Cost	849	4	4	335	4.11	611705.5
LT	Level of Security	652	4	5	261	4.03	473410.0
	Travel Cost	652	4	5	295	4.27	515545.5

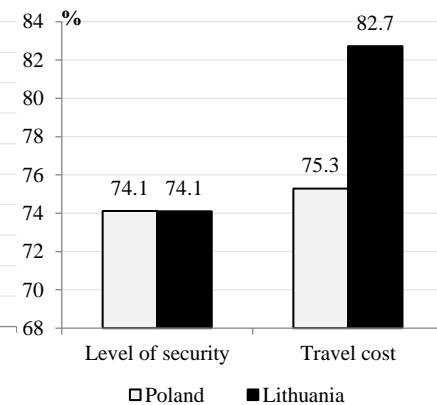
importance to 5=very important.

It is worth noting that differences between countries in the assessment of these factors (level of security and travel cost) are greater among the younger part of Millennium travelers. Figure 1 shows a positive assessment of the level of security and travel cost in Poland and Lithuania according to age, ie. among respondents aged up to 24 and respondents over 24 (this is due to the fact that the majority of people aged 24 ends academic education). The difference in the assessment of the importance of the level of security, depending on the age, is 0.0-7.7 percentage points, while in the assessment the travel cost is 7.4-9.3 percentage points. However, the influence of age on the assessment of factors by respondents was not confirmed by the Mann-Whitney U test ( $p>0.05$ ).

up to 24 years old

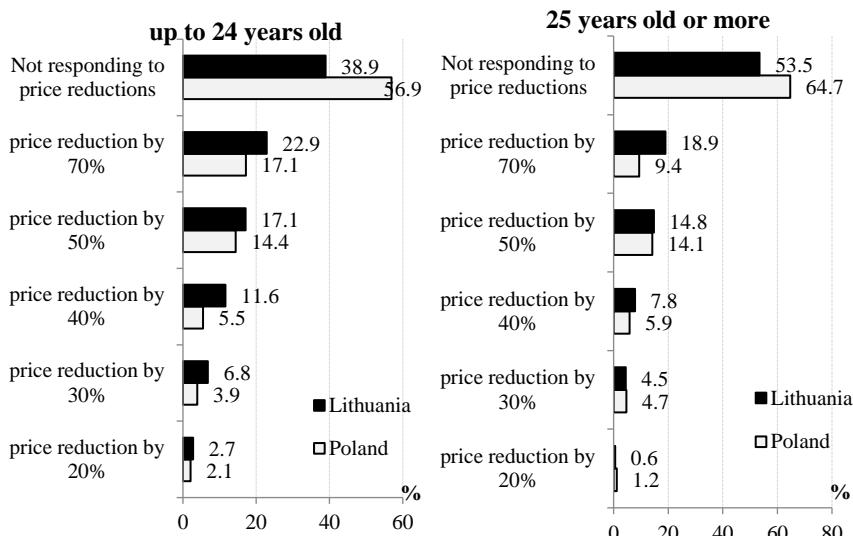


25 years old or more

**Figure 1.** Share of respondents in Poland and Lithuania who claim that level of security or travel cost are important or very important factors determining their trip

Conclusion of decisive importance travel cost for Lithuanian respondents is confirmed by data on the inclination of Millennium travelers to choose a trip with

a lower level of security when there is an economic incentive in the form of price reduction of the total cost of tourist trip (Figure 2). In Poland, 57.7% of respondents (and depending on the age 56.9-64.7%) do not react to price reductions, while in Lithuania 53.1% (depending on the age 46.5-61.1%) react to price reductions. Millennium travelers from Lithuania are more willing than Polish travelers to go to a less secure country when they receive an appropriate price incentive.



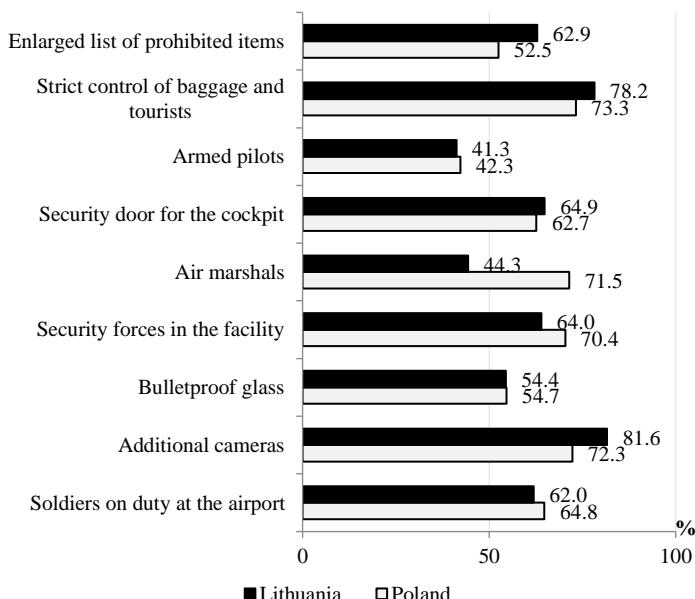
**Figure 2.** Price reduction of the total cost of tourist trip that would have persuaded of respondents in Poland and Lithuania to choose a trip to a country with a lower level of security

Statistical analysis by Mann-Whitney U test (Table 5) indicated that there are statistically significant differences between the respondents from Poland and Lithuania in answering the question whether they would be willing to choose the travel to a country that has lower level of security (a tourist destination with a higher risk rating) when a price reduction occurs. It is worth adding that there are differences in the assessment of this factor among respondents from Lithuania depending on their age. The result of Mann-Whitney U test according to age is  $p=0.000$  ( $Z=-3.67$ ). Younger Millennium travelers from Lithuania are more likely to go to a country with a low level of security when the price for the trip will be reduced.

**Table 5. Evaluation of the importance of factors determining respondents' decisions about their trip - Mann-Whitney U test statistics**

Grouping variable	Country			Gender					
Country	Poland/Lithuania			Poland			Lithuania		
Test statistics	U	Z	p value	U	Z	p value	U	Z	p value
Level of security	260532.0	1.95	0.051	49043.5	6.97	0.000	36080.0	1.03	0.304
Travel cost	250880.5	-3.11	0.002	62206.0	2.83	0.003	32490.0	2.79	0.005
Price reduction	246211.5	3.67	0.000	55228.5	5.02	0.000	33451.0	2.32	0.021

Due to the fact that the level of security in both Poland and Lithuania is important, but for Lithuanians, travel cost is a more important factor than the level of safety, so it was investigated how Millennium travelers assess the occurrence of various security measures during a tourist trip (Figure 3). The results of research in assessing the importance of security measures at the airport by the respondents indicate that Millennium travelers from Lithuania prefer hard security measures, ie. additional camera, enlarged list of prohibited items, strict control of baggage and tourists. On the other hand, Polish people prefer to see security measures, but they do not necessarily consent to limit their privacy. These tendencies of respondents and differences between countries in the perception of security measures may explain why tourists from Poland pay more attention to safety than tourists from Lithuania.



**Figure 3.** Security measures at the airport which are important or very important to respondents in Poland and Lithuania

Analyzing the survey data, it was found that the assessment of factors affecting the tourist preferences of Millennium travelers may depend on gender. Research results indicate that the importance of the given factors (level of safety, travel cost, price reduction) when making a choice about travel to a given tourist destination, depends on the gender of the respondents (in Poland, for the studied factors the average rank is respectively for women: 4.29; 4.18; 5.26, for men: 3.63; 3.95; 4.74, and in Lithuania for women, respectively: 4.06; 4.32; 4.97, and for men: 3.94; 4.08; 4.64). Women in both countries pay more attention to safety and security than men, and when it comes to prices, they are more likely to give up security (mode in Poland and Lithuania) for any price, or require very large, 70% price reductions. Data analysis by Mann-Whitney U test (Table 5) indicates that there are statistically significant differences in the assessment by respondents in Poland depending on the gender for all of studied factors, and in Lithuania when assessing the importance of travel cost and price reduction. The analysis shows that differences in assessment between women and men are greater in Poland than in Lithuania.

## DISCUSSION AND CONCLUSION

Research results indicate that Millennium travelers are a group of tourists who willingly invest their time and money in travelling and are more diverse as a group than non-Millennials, they are interested in international travel and global cultural experiences, and are more open to novelties. These tourists care about the cost of the package/holiday and are less willing to pay more for travel. Besides this group of tourists are more brave, ie. compared to older generations and travel according to the plan prepared in advance to gain some experience regardless of anything.

Discussing the postulates raised by literature, it should be stated that the results of the research have confirmed that Millennials pay considerable attention to the issue of travel costs. In addition, it can be seen that they are willing to take greater risks in tourism and travel to destinations with lower levels of security, but not at any price. This may be confirmed by the fact that the majority of respondents in both countries consider the price to be a very important factor determining their tourist trip. In Lithuania, price is even a more important factor than security level), but at the same time, about half of the respondents (to a greater extent in Poland) would be willing to pay extra if the travel destination was characterized by too low level of security.

Research results by the authors indicate that most of Millennium travelers in Poland and Lithuania greatly appreciate the importance of safety and security and travel cost levels (around  $\frac{3}{4}$  of respondents). However, there are statistically significant differences between respondents from Poland and Lithuania in assessing the importance of travel cost as a factor determining a tourist trip. Respondents in Poland perceive travel cost as an important factor affecting their tourist choice, while in Lithuania travel cost is assessed as a very important factor, and even more important than the level of security. Differences in assessment between respondents in both countries occur regardless of age (although this difference is slightly higher among younger tourists).

Research results indicate that Millennium travelers from Lithuania are more willing than Polish travelers to go to a less secure country when they receive some incentive in the form of a price reduction. In Poland, over half of respondents do not react to price reductions when it concerns a low level of security, while in Lithuania just over half of respondents would be willing to react to the price factor in such a situation. Studies indicate that in Lithuania this is influenced by age (younger tourists show a greater lack of reaction to a low level of safety).

It was also stated that Millennium travelers from Lithuania prefer hard security measures, while Polish travelers like to see security measures, but do not necessarily consent to limit their privacy.

Research results also indicate one important conclusion: gender influences the assessment of the importance of factors determining the choice of a tourist destination. In Poland, women value safety more than men, and for any reduction in price they are not willing to give up security, while in Lithuania gender differences occur when assessing the importance of the travel cost.

The analysis carried out in the paper indicates that there is a need for further research in this area.

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## MODELING AND FORECASTING OF INDICATORS OF THE HIDDEN BANKRUPTCY OF THE ENTERPRISES

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### ABSTRACT

This article contains statistical analysis of the hidden bankruptcy of the organizations, the existing principles and approaches to the identification of a hidden bankruptcy in the early stages for the purpose of commercial credit. A new approach in the analysis of concealed bankruptcy, using the three-dimensional model that combines the most adaptive forecasting models for the global and Russian terms of trade. The stages of development of models of forecasting of bankruptcy in different countries, as well as Russian experience in research of this issue. The author offers the classification of existing models identified their advantages and disadvantages. Systematization of the models are based on statistical methods used in solving the problem of bankruptcy forecasting organizations in the selected models. The definition of hidden bankruptcy should be, the state of the enterprise, in which there are predictive trends in the deterioration of financial performance, shortcomings in the management of the company are qualified as errors and failures, and lead to financial insolvency. However, that hidden bankruptcy is not legally defined and regulated, there are many methods for evaluating the effectiveness of the company's financial activity, which has as its basis a model for assessing hidden (unrecorded) bankruptcy. Also in the predictive models are calculated indicators of cash flow, cash from operations, costs for servicing loans (sales financing from funds raised - the price of borrowed capital), tangible assets or tangible total assets, salaries - the ratio of labor costs to the added value (cost price - the cost of raw materials, energy, services of third-party organizations) or remunerated staff ratio, profit before interest and taxes or gross operating profit, revenues - gross income from sales of products, works and services, extraordinary items - extraordinary consumption and financial expenses - financial costs, as well as GNP price-level index.

**Keywords:** *commercial loans, bankruptcy risk assessment, credit policy, bankruptcy, forecasting models.*

### INTRODUCTION

The need to develop methodological approaches to identifying bankruptcy in the early stages is due to some trends occurring with the Russian economy at the present stage. The strong growth in the share of loss-making enterprises in Russia comes with the aggravation of crisis situations in the world markets, during the world economic crisis, as well as in connection with the current currency crisis in Russia, when there is a sharp jump in the share of loss-making organizations.

The impact of operational and financial difficulties in the company is based on the traditional analysis of financial indicators (quantitative factors).

The first studies in the search for quantitative analytical coefficients to predict possible complications in the financial activities of companies were carried out in the United States in the early 30-IES.XX century. So in 1932, when Fitzpatrick published a study of 20 pairs of firms, among which were bankrupt firms and firms that were able to survive, were commensurate with the age of the company, size and industry, in Certified Public Accountant. At that time, he was unable to carry out a complete statistical analysis, as it is now possible, but intuitively interpret the values of indicators and their trends. His interpretation was effectively a complex multivariate analysis.

One of the first financial analysts, who used statistical techniques in combination with financial ratios to predict the likely bankruptcy of the enterprise, was W. H. beaver( W. N. Beaver) 1966. U. beaver on the basis of comparison of the influence of 30 financial indicators proposed five factors to assess the financial condition of the enterprise in order to diagnose bankruptcy. [2]

The most accurate in the conditions of modern market economy specificity are multi-factor models of bankruptcy prediction, which usually consist of five to seven financial indicators. In the practice of foreign financial institutions for assessing the probability of bankruptcy is often used "Z-account" E. Altman (creditworthiness index), which is a five-factor model, based on the data of successfully operating and bankrupt US industrial enterprises. [1]

As well as Altman (1968), discriminant analysis is used by many researchers by making changes in the choice of financial indicators, the study of different enterprises of different industries and different business cultures. Some of the known studies are dickin (1972), bloom (1974), Springate (1978) and Fulmer (1984).

The advantage of methods similar to the Altman model is the high probability with which bankruptcy is predicted approximately two years before the actual announcement of the competition, the disadvantage is the decrease in the statistical reliability of results in the preparation of strategic forecasts.

Limitations of discriminant analysis created a space for the development of the logit model. Olson (1980) presented logit model in bankruptcy prediction. Assumptions of the logit models differed from the models Z-score. Olson identified nine independent variables (financial and non-financial) based on their frequent use in bankruptcy forecasting. This model was developed on the analysis of 2,163 companies (105 bankrupt and 2,058 non-bankrupt) for the period 1970-1976. According to the model of Olson, Abdullah et al. (2008), applied logistic model foreshadows the corporate bankruptcy of Malaysian firms.

Despite the positive factors in the use of logistic regression and its logic models to assess the likelihood of bankruptcy of organizations, this model can be criticized. For example, a detailed analysis of the risk assessment of bankruptcy of domestic companies, obtained on the basis of this model, does not allow to draw a clear conclusion regarding the probability of bankruptcy of organizations included in the analyzed sample, the calculations give the opposite results.

Zmievskiy (1984) used a probit model using data from 40 8000 bankrupt and not bankrupt firms for the period 1970-1978. He conducted a comparative analysis of 13 models of the definition of bankruptcy and on their basis built his model. One of the criticisms of Zmievskiy's model is that other bankruptcy models for identifying problem firms were more accurate due to the completeness of financial data. [6]

Nonparametric models are highly computer-dependent and are mostly multidimensional (Andan and Dar, 2006). Some of the well-known nonparametric models are artificial neural network (Ann) models, hazard models, fuzzy models, genetic algorithms (GA) and hybrid models, or models in which some of the former models are combined.

The model of the artificial neural network can examine a particular dataset, and to adapt to it, they also have the ability to grasp the nonlinear relationship between the variables, what is the advantage of these models. The main disadvantage, however, is that they are unable to explain the cause-effect relationships between their variables, which limits their application to practical management problems (Lee and Choi, 2013). Kirkos (2015), in a credit risk review article that focuses mainly on artificial models of research published between 2009 and 2011, that is, during the information technology revolution, suggests that in the 1990s through the creation of artificial intelligence and management systems, these models were able to grow and develop. This led to the development of a new set of bankruptcy prediction models known as neural networks. Messier and Hansen's (1988) studies related to the use of neural networks in predicting bankruptcy are emerging. Followed by a large number of studies, such as Ragupathi (Raghupathi et al (1991), Fant (1993), Guan (1993), Tsukuda and Baba (1994), Altman, Marco and Barreto (1994). [4]

Artificial neural networks are a method that has been used in predicting bankruptcy, mostly over the past two decades. Neural network models include quality criteria and are in essence computer systems that make decisions based on established facts as well as the human brain operates, in addition, they aim to solve a specific problem, or used to create new models of governance.

Neophytou (2001) identified some of the benefits of neural networks as their ability to induce algorithms in pattern recognition. Unlike traditional models, the approach of neural networks is considered to be more reliable due to the fact that it is not subject to statistical postulates, for example, linear coupling and multi-variability of the random variable. As such, it is adaptive and has the ability to Express non-linear relationships. Holi, Johnson, and Raina (1990) noted that the approach taken in neural networks could be most effectively used to solve problems such as classifications and clustering where environments are unstructured or with incomplete data. The disadvantages of the neural network can be attributed to the

fact that they do not evaluate the contribution of each variable to the final classification, i.e. do not determine the value of this variable for the whole variation. Therefore, it is impossible for the researcher to select the most significant predictive variables to develop a model with a neural network approach.

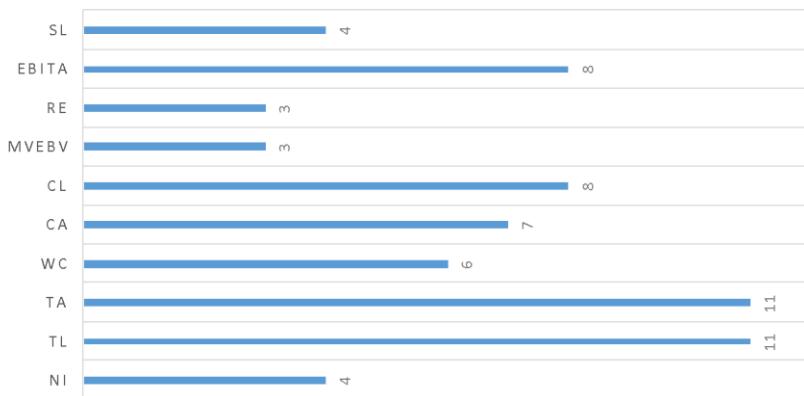
In addition to the artificial neural network model, there are other nonparametric models, namely hybrid models. Hybrid models are a combination of two models, either parametric or nonparametric (Lee et al., 1996).

Genetic algorithm is also one of the most striking in the list of nonparametric models, which work as a method of stochastic search to find out will be the company bankrupt or not (Varreto, 1998). Other widely used non-parametric models: Etemadi (2009) genetic programming, the models based on the theory of "rough test" Dimitrios (1999), Bayesian, Fuzzy, models of hazards and analysis of data Data Envelopment Envelopment Analysis (DEA). [3]

In the case of nonparametric models, we are talking about modeling a huge amount of data that are not used in the realities of commercial lending, but are more often used in complex tasks of investment decision-making, ratings of companies, the value of shares and their profitability.

In the case of using some mathematical models, the influence of qualitative factors in identifying hidden bankruptcy is not taken into account. The next important stage in the development of hidden bankruptcy forecasting models is the creation of high-quality forecasting models. With them, it became possible to identify potential bankrupt even before financial performance began to deteriorate. Qualitative analysis is based on the use of information that cannot be expressed in quantitative terms. To carry out such an analysis, questionnaires and information about the borrower from various databases are used.

One of the most relevant models is the model j. Argenti (1976). Parametric models include discriminant models and conditional probability models (logit and probit), while nonparametric models include iterative sections, such as Argenti's hidden bankruptcy model. The model is based on the calculation of the company's assessment, which is based on three stages: the company's shortcomings, management errors and symptoms of bankruptcy. There are two important limitations of the model, first, there are no specific financial indicators used to describe the financial health of the company. As a result, the concept of financial health of the company is unclear and does not give the slightest idea of the importance of financial indicators, such as profit, profitability, turnover and liquidity at various stages of bankruptcy, secondly, although Argenti emphasizes the importance of management shortcomings, the existence and importance of specific errors, as a consequence of the symptoms of hidden bankruptcy, without specifying the distinctive features, the definition of the stages of bankruptcy is not quite clear. As a result, the details of the definition of hidden bankruptcy are not obvious and there are too few differences between them. Moreover, they may not occur for a long time, and appear at the same time.



**Figure 1** Study of indicators in forecasting models (compiled by the author based on the analysis of 11 forecasting models)

To implement commercial lending companies, it is advisable to include in the set of indicators characterizing the results, namely, sales Revenue (without VAT) – sales (SL) in accordance with IFRS or GAAP revenues (SL), Net profit, net income (NI) or in GAAP net profit in IFRS, the indicators characterizing the effectiveness of commercial lending is accounts receivable (AR – accounts receivable) and payables (AP – accounts payable), they are components of the CA and CL indices, which are often used by foreign authors in their bankruptcy forecasting models. And indicator stocks (Inventories) as characteristic of the influence of external factors on the operation of enterprises, namely the glut of products in the warehouse, because of the impossibility of its implementation (the complexity of the sale, nonpayment of contractors and improper strategic planning of production volume). Also in the set of features added quality measure, allocated A-score for the estimated model latent bankruptcy "of the company less than five years? the answer to which can be obtained by an indicator of the age of the enterprise.

According to the factor analysis of the indicators, based on a set of 629 agricultural enterprises, the importance of the selected factors SL (sales revenue), NI (net income) and AR (accounts receivable) is confirmed that they have the greatest impact on the model and are important for the community of the set.

From the matrix of the main components of table 1 it follows that, for example, the indicator age has a negative value, this suggests that in the model it is necessary to take the opposite indicator, too, with stocks, the first component is influenced by indicators such as revenue (SL), accounts payable and receivables (AP, AR), on the second component they have no impact, but has an impact on profit (NI).

Based on the results of the consolidated analysis of the selected models of bankruptcy prediction, it can be concluded that one of the priorities of statistical studies of hidden bankruptcy is the analysis of differentiation and identification of traits that distinguish enterprises prone to bankruptcy.

The combination of economic and statistical and qualitative analysis of the organization makes it possible to determine in advance the harbingers of hidden

bankruptcy. The determination of the most significant influence factors based on the coefficients of Altman's multivariate analysis models, Olson's logit model and Zmievskiy's probit model (X&Y&Z) and Argenti's qualitative model is likely to yield more accurate results in predicting the bankruptcy of organizations.

## **CONCLUSION**

A new approach in the analysis of concealed bankruptcy, using the three-dimensional model that combines the most adaptive forecasting models for the global and Russian terms of trade. The stages of development of models of forecasting of bankruptcy in different countries, as well as Russian experience in research of this issue. The author offers the classification of existing models identified their advantages and disadvantages. Systematization of the models are based on statistical methods used in solving the problem of bankruptcy forecasting organizations in the selected models. The definition of hidden bankruptcy should be, the state of the enterprise, in which there are predictive trends in the deterioration of financial performance, shortcomings in the management of the company are qualified as errors and failures, and lead to financial insolvency. However, that hidden bankruptcy is not legally defined and regulated, there are many methods for evaluating the effectiveness of the company's financial activity, which has as its basis a model for assessing hidden (unrecorded) bankruptcy. Also in the predictive models are calculated indicators of cash flow, cash from operations, costs for servicing loans (sales financing from funds raised - the price of borrowed capital), tangible assets or tangible total assets, salaries - the ratio of labor costs to the added value (cost price - the cost of raw materials, energy, services of third-party organizations) or remunerated staff ratio, profit before interest and taxes or gross operating profit, revenues - gross income from sales of products, works and services, extraordinary items - extraordinary consumption and financial expenses - financial costs, as well as GNP price-level index.

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The combination of economic and statistical and qualitative analysis of the organization makes it possible to determine in advance the harbingers of hidden bankruptcy. The determination of the most significant influence factors based on the coefficients of Altman's multivariate analysis models, Olson's logit model and Zmievskiy's probit model (X&Y&Z) and Argenti's qualitative model is likely to yield more accurate results in predicting the bankruptcy of organizations.

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# OPTIMAL STRUCTURE OF PENSION SYSTEM - PENSION ENTITLEMENTS WITH FOCUS ON REPLACEMENT RACE

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## ABSTRACT

The aim of this paper is to find possible solution that would be applicable in the current economic conditions of the Slovak Republic to increase the sustainability of the first tier with the focus on replacement rate. If we would like to find the optimal solution for pension system we should consider that replacement rate is one most crucial part. Current structure of pension system of Slovak Republic is not optimal and significantly caused the annual increase of public debt. On the other hand, people in retirement age are still not satisfied with their incomes. Part of the work is analysis of current approaches to the pension system in different countries. We compare main indicators such gross pension replacement rate, replacement rates for mandatory and voluntary pension schemes. Based on this analysis we will propose our recommendations structural changes in the Slovak pension system. Obviously, we consider long term conditions of public pension expenditure.

**Keywords:** *Pension system, Replacement rate, Mandatory scheme, Voluntary scheme*

## INTRODUCTION

Quality of Life in retirement age is a question that has become more resonant in society in recent years. The long-term trend of demographic change, the prolongation of life and low birth rates or replacement rate, pose huge challenges to the sustainability of pension systems. The article discusses how the different countries of the European Union are accustomed to the replacement rate in pension systems as well as the structure of pension systems.

## METHODS OF RESEARCH

The work will rely on both empirical and theoretical research methods. Basic analytical methods will be used prepare a comparison of the retirement age and replacement rate in European Union and Slovak republic. We will also use analysis of the European Union countries pension systems and Slovak pension system as well as analysis of the partial problem of the Slovak pension system with focus on sustainability.

## PENSION SYSTEMS IN EUROPEAN UNION

Population ageing is one of the greatest social and economic challenges facing the EU. Projections foresee a growing number and share of elderly persons (aged 65 years and over), with a particularly rapid increase in the number of very old persons (aged 85 years and over). These demographic developments are likely to have a considerable impact on a wide range of policy areas: most directly with respect to the different health and care requirements of the elderly, but also with

respect to labour markets, social security and pension systems, economic fortunes, as well as government finances [1].

Although European Union countries have the primary responsibility for designing their pension systems, we can see different approach to the public pension schemes. Adjustment of the pension schemes across European Union countries are so different that's make cross-country comparisons much more challenging. Indeed, system differences are not only various provide retirement income or different phases of the pension systems' reform process neither different approach to pension expenditures. However, a huge part of the systems represents by involvement of public sector in the pension system that is common for all European Union countries. However, we can divide systems with focus on publicly provided earnings to the following schemes: defined-benefit (DB), notional defined contribution (NDC), and point systems (PS).

Country	Public pension scheme
Belgium, Bulgaria, Czech Republic, Denmark, Estonia, Spain, Luxembourg, Hungary, Austria, Slovenia, Portugal, Finland	Defined-benefit (DB)
Ireland, Malta, Netherlands, United Kingdom	Flat rate + Defined-benefit (DB)
Greece	Flat rate + Defined-benefit (DB) + Notional defined contribution (NDC)
Italy, Latvia, Poland, Sweden, Norway	Notional defined contribution (NDC)
Germany, Croatia, Lithuania, Romania, Slovak Republic, Cyprus	Point systems (PS)
France	Defined-benefit (DB)+ Point systems (PS)

*Tab.1 Main public schemes type in the European Union source: The 2018 Ageing Report Economic & Budgetary Projections for the 28 EU Member States (2016-2070)*

## PENSION SYSTEM IN SLOVAK REPUBLIC

After 2003, the Slovak Republic enacted extensive pension scheme reform. As a result, the one-pillar scheme with established PAYG (pay as you go) benefits was transformed into a scheme built on three separate pillars.

1st pillar – mandatory pension insurance defined by benefits and funded on an ongoing basis and administered by the Social Insurance Agency. The 1st pillar of the pension insurance scheme is defined by benefits and funded on an ongoing (PAYGO) basis. It is closely connected to the economic activity and income of the citizens.

2nd pillar – old age pension saving defined by contributions and capital funded insurance administered by pension fund management companies. Pension savings system with defined contributions is financed by capitalization and managed by

single-purpose private pension management companies (PFMC). It is based on savings invested in an individual account intended, together with the old-age insurance provided by the Social Insurance Act (1st pillar), to guarantee an income to the beneficiary in retirement or to his or her descendants in case of death.

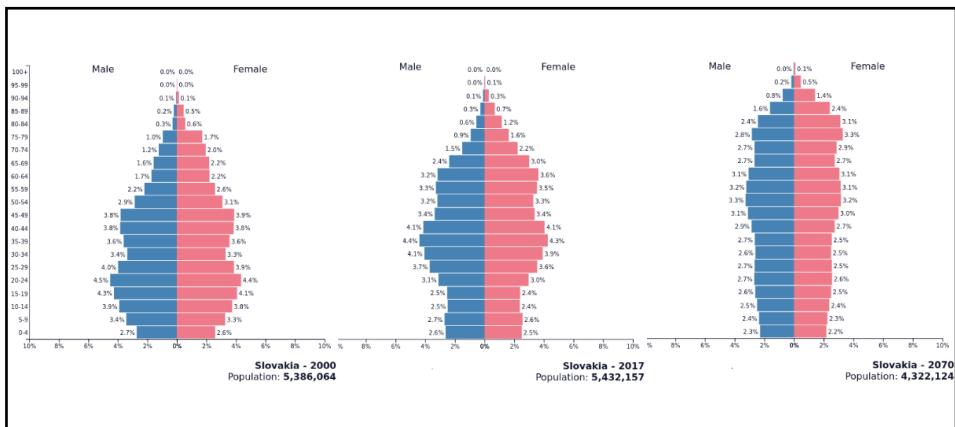
3rd pillar - voluntary supplementary pension saving defined by contributions and capital funded insurance administered by supplementary pension companies. Supplementary pension insurance is voluntary and represents the third pillar of the pension scheme in which the funds of the participants are administered by supplementary pension companies [2].

According to the European Commission's report, Slovakia will be the third fastest aging country in the European Union. One of the youngest economies in the EU will change to the earliest eight. Aging-sensitive spending will grow by almost 16% (3% of GDP) by 2070. Against the previous three years' report, the increase in spending is due to more favorable demographic assumptions and an improving labor market. However, their level is now higher than predicted in the previous report. The introduction of the retirement age ceiling must be conditional on structural reforms. Also necessary is the connection with the provisions of the Constitutional Bill on Budgetary Accountability [3].

## AGEING PRESSURE

Demographic projections predict the rapid aging of the population, but the rate of aging will be slower than predicted by the previous report. Low birth rates and a rise in life expectancy will result in a change in the age structure of the population. One person over 65 years worked 3.2 in 2016, but in 2070 it will be only 1.5 workers [4].

Life expectancy at older ages is especially important for wellbeing. However, it also influences the finances of retirement-income systems. In 2015-20, on average in OECD countries, women aged 65 could expect to live an additional 21.3 years, which is forecast to increase to 25.5 years by 2065-65. Men of same age could expect to live 18.2 more years in 2015-20, with a project increase of 4.5 years by 2060-65 to reach 22.8 years. Gender gaps in longevity of older people are expected to decrease slightly over next 45 years (from 3.1 to 2.7 years on average in OECD countries) [5].



**Figure. 1** Population pyramid graphs evolution of Slovak republic, years 2000, 2017, 2070.

Source: <https://www.populationpyramid.net/slovakia/>

## REPLACEMENT RATE

Replacement rates are measured as the very first pension benefit relative to the last wage before retirement. As such, a downward trend of the replacement rate for new pensions might cause the benefit ratio to decrease. Older generations generally experienced a situation of full employment and complete careers and thus made higher contributions than younger generations [6].

Country	2016	2070
BG	35,8	39,2
Denmark	27,2	27,1
ES	78,7	45,0
IT	60,4	49,8
LV	51,7	21,7
Slovak Republic	49,0	50,2
EU 27	46,3	38,1

**Tab.2** Replacement rates in selected countries of European Union in 2016 and 2070 (%) Source: *The 2018 Ageing Report Economic & Budgetary Projections for the 28 EU Member States (2016-2070)*

In the Tab.2 we can see comparison of different approaches to the replacement rate in European Union countries. In generally we could see decreasing trend of the replacement rate in European Union countries. Average value of replacement rate in 27 countries of European Union drop down from 46,3 % to 38,1%. On the other side there are still some countries that's ignore the trend, for example Bulgaria and Slovak Republic.

Year	Average retirement income (€)	Average monthly wage in economy SR (€)	Average replacement rate in % (brutto)
2009	339,73	744,50	45,63
2010	352,54	769,00	45,84
2011	362,08	786,00	46,07
2012	375,89	805,00	46,69
2013	390,51	824,00	47,39

2014	400,18	858,00	46,64
2015	411,06	883,00	46,55
2016	417,46	912,00	45,77
2017	428,31	954,00	44,90

*Tab. 3 Average replacement rate in % in Slovak Republic in 2009 – 2017.*  
*Source: Social Insurance Agency in Slovakia <https://www.socpoist.sk/vztah-priemernej-vysky-vyplacaneho-starobneho-solo-dochodku--k-3112--a-priemernej-mesacnej-mzdy-v-hospodarstve-sr/3166s>*

Increasing the replacement rate is not the solution for any PAYGO system. With focus on replacement rate as solution, we could not compare average wage in Germany (3771€ in 2017) to the average wage in Slovak Republic (945€ in 2017 see Tab.3).

## CONCLUSION

Public finance deficit has only three possible solutions that are cutting costs, increasing revenue, or combination of both. Immediate cuts in pension expenditure are the last in the list or we can say to cut costs is politically impassable.

PAYGO pension systems are generally very sensitive to political interference. Especially in terms of sustainability of the system, retirement income, or retirement age. Unsystematic interventions such as supplemental benefit payment (13th pension payment) or the retention of retirement age in the long run seriously undermine the sustainability of the pension system.

The rate of compensation as a key indicator of the sustainability of the pension system has shown that, despite its increase, it is not possible to achieve a significant increase in pensions and a disproportionately high burden on the working population.

Solution for PAYGO system are gradual increase of the retirement age with focus on demography, slow reducing the replacement rate and sensitive approach to pension indexation.

If we do not start to tackle our pensions responsibly and the sooner our descendants will have to deal with the ever-increasing debt of the on-going pension system. Without effort and enormous engagement, every attempt to change the establishment is condemned to failure and raising replacement rates is not the right solution to the current situation.

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## PRELIMINARY RESULTS ON THE INFLUENCE OF THE F414 BIOLOGICAL PRODUCT ON SOME PHYSIOLOGICAL INDEXES FOR PEACHES GROWN UNDER THERMO-HYDRIC STRESS

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### ABSTRACT

On the peach species, *Springold* variety, research was conducted on the influence of the F414 biological product on some physiological indexes and processes carried out on the foliar level, the area of culture being characterized by an accentuated thermo-hydric stress during the summer. Photosynthetic gas exchange, foliar transpiration and stomatal conductance were determined with the portable LC PRO + apparatus, and the leaf water forms were determined gravimetrically, the results obtained being correlated with the meteorological data from the vegetation period. Applying the F414 to the *Springold* variety resulted in the formation of a pellicle on the surface of the leaves, which, together with the action of the thermo-hydric stress specific to the area, caused stomate closure, reduction of CO<sub>2</sub> supply, photosynthesis values being considerably lower compared to the control variant. As for foliar transpiration, the F414 product had a positive effect, the pellicle formed on the surface of the leaves, reducing the amount of water lost to the foliage. The application of this product has positively influenced drought resistance of the *Springold* variety, the percentages of the bound water being higher (5.1%) compared to the control variant (3.96%).

**Keywords:** peach, thermo-hydric stress, physiological indexes

### INTRODUCTION

The current climatic changes, which, according to experts, will be more and more pronounced in the coming decades, obviously affect the biology of horticultural species, especially perennial wood species, such as, for example, fruit trees. The risk of desertification is a real phenomenon in Romania and is closely related to the evolution of the climate [8]. The values of the Thornthwaite aridity index define an arid area, increasing from north to south and south-west of Oltenia, from 45% to 50%. The highest values expressing pronounced aridity (about 65%) also cover the area of sandy soils in southern Oltenia [4]. This area therefore has a natural background favoring a significant drought impact on plants. The plants bear a temperature rise of 5-10 °C above the optimal temperature, and temperatures higher than 12-15 °C show the effects of thermal stress [7]. During the vegetation

period plants are exposed not only to the effects of high temperatures but also to longer or shorter drought periods. Water is a particularly important abiotic factor that influences plant metabolism. Water stress is widespread and is the most important factor limiting production in most crop plants [1]. The response of fruit trees to water stress is lower than that of annual plants, and varies with the species, organ and production phenophase [6]. The action of the thermo-hydric stress, as well as the action of different chemical and biological substances used in phytosanitary treatments in fruit trees can be appreciated by the level with which the values of the main physiological and biochemical indicators of the plants exposed to these factors change. Bioproducts are biological means made on the basis of natural compounds (plant extracts) with complex action on crop plants, bioproducts that have been shown to be stimulants for vegetative growth [9], [10]. Taking into account these considerations, the present research has proposed to know the mode of action of the F414 biological product on peach, the Springold variety, regarding the influence of this product on some physiological indexes and processes developed at the foliar level, the area of culture (the sandy soils in southern Oltenia) being characterized by an accentuated thermo-hydric stress during the summer.

## MATERIALS AND METHODS

The studies were conducted during the peach vegetation period (year 2017) at Research – Development Station for Plant Culture on Sands, Dabuleni, Romania, within the plant physiology laboratory. *Springold* peach variety was used as study material in two experimental variants. In the first variant (control) phytosanitary treatments were applied according to the peach culture technology on sandy soils, and in the second experimental variant was additionally added treatment with the F414 biological product. Photosynthetic gas exchange, foliar sweat and stomatal conductance were determined directly in the experimental field with the LC PRO + portable device, both on the sunny side of the trees and on the shaded side. The water forms in the leaves (total water, free, bound) were determined gravimetrically in the laboratory. The results obtained were correlated with the meteorological data recorded at the weather station of Dabuleni RDSPCS, during the period April–October 2017. To determine the intensity of the thermo-hydric stress on the peach trees, the experimental determinations were made in two critical moments for the area of sandy soils in southern Oltenia, the first decade of August and September.

## RESULTS AND DISCUSSIONS

Experimental determinations made on peach (*Springold* variety) have highlighted a diurnal variation in photosynthesis and foliar transpiration processes, these processes being influenced by the temperature and amount of active radiation in photosynthesis, the relative air humidity at the time of the determinations, the amount of rainfall, of treatments applied in vegetation. From the climatic point of view, the April–October 2017 period is presented in table 1.

**Table 1.** Climate conditions between April and October 2017 recorded at the RDSPCS Dabuleni weather station.

Month	IV	V	VI	VII	VIII	IX	X
Medium temperature (°C)	12	17.8	24	24.8	24.8	20.2	13.4
Maximum temperature (°C)	29.8	29	41. 2	40.8	40.4	36.9	29.4
Minimum temperature (°C)	0.4	4.7	12. 9	13.3	11	6.7	2.7
Precipitations (mm)	62.8	78.6	17. 4	120.8	28.8	18.2	120.4
Atmospheric relative humidity (%)	72	77	67	65	63	66	80
Sum of temperature degrees (°C)	360	551.8	720	768.8	768.8	606	415.4
Multianual medium temperature (1956-2016)	11.8	16.8	21. 6	23.1	22.4	17.8	11.4
Sum of monthly multianual precipitations (1956-2016)	47.5 2	62.12	69. 3	53.15	37.28	41.81	41.81

From the data presented, it can be observed that during the analyzed period, the air temperature is constantly increasing, the monthly average values exceeding the multianual average of the temperature. Very warm were the summer months, June, July and August, with average temperatures between 24 – 24.8 °C and maximum air temperature between 40.4 – 41.2 °C. Due to the atmospheric drought, these high temperatures led to thermo-hydric stress conditions, which influenced the fruit trees metabolism, the drought period extending until September. Although the sum of the annual rainfall was higher than the multianual sum, they were unevenly distributed, from very small amounts of about 10 mm to 100 mm in just 2-3 days. An example of this is June, when 98.8 mm precipitations were recorded in the first three days of the month, followed by very long periods (28 days) with very high temperatures and no precipitation. Globally, one of the challenges faced by fruit production is the fact that the regional climate is increasingly unpredictable from year to year. Therefore understanding the effects of drought, extreme temperatures, light, etc. on metabolic processes in plants is very important. In correlation with the studied factors, the climatic conditions of 2017 directly influenced the development of physiological processes at the *Springold* peach variety cultivated on sandy soils. In the same area of culture, it was demonstrated that as the average temperature of this area increased, the late Jerseyland and Redhaven peach-trees began to mature their fruit about 12 days earlier, and the tendency to reduce the vegetation period is significant [2]. From a physiological point of view, the application of the F414 biological product was aimed at protecting the leaf surface from intense solar radiation by means of the hydro-active pellicle, the pellicle deposited on the leaves having a high reflectance when is dry and increased absorbance when is wet.

However, in the climatic conditions characteristic of the sandy soils in southern Oltenia, the application of the F414 product led to the formation of the pellicle on the surface of the leaves which, together with the action of the thermo-hydric stress specific to the area, caused stomata closure, reduction of the supply of CO<sub>2</sub>, and obtaining leaves with a reduced assimilation surface with repercussions on the photosynthetic yield (tables 2 and 3).

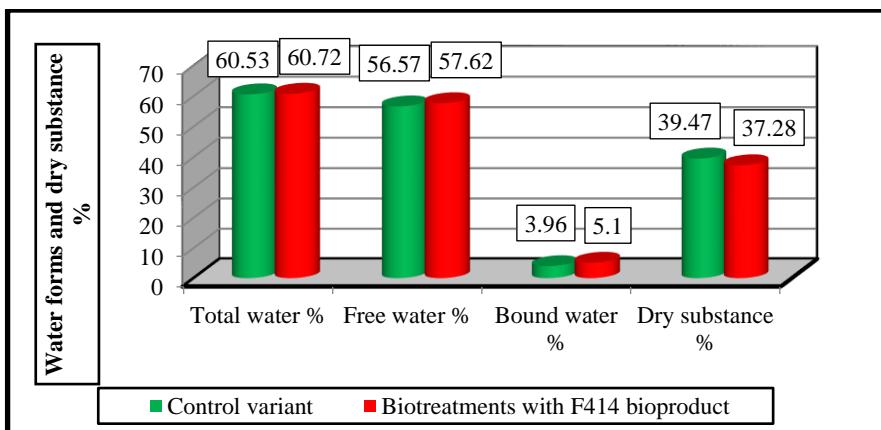
**Table 2.** Diurnal variation of physiological processes at Sprindold variety cultivated under thermo-hydric stress conditions (August 2, 2017).

Hour	Experimental variant	Prunus persica, Springold variety				
		Photosynthetic active radiation $\mu\text{mol/m}^2/\text{s}$	Air temperature $^{\circ}\text{C}$	Photosynthesis $\mu\text{mol CO}_2/\text{m}^2/\text{s}$	Foliar transpiration $\text{mmol H}_2\text{O}/\text{m}^2/\text{s}$	Stomatal conductance of $\text{H}_2\text{O}$ $\text{mol/m}^2/\text{s}$
9 o'clock	Control variant	762	30.1	12.05	2.26	0.28
	Biotreatments with F414 bioproduct	667	30.1	4.02	1.98	0.18
12 o'clock	Control variant	942	30.1	11.23	1.62	0.16
	Biotreatments with F414 bioproduct	849	31.8	5.00	1.10	0.07
15 o'clock	Control variant	877	38.7	5.16	2.48	0.05
	Biotreatments with F414 bioproduct	885	38.9	1.19	1.61	0.03

From the data presented in table 2 and table 3, it results that in both analyzed phenophases the photosynthesis process was influenced both by the climatic factors in the area and by the substances used for the treatment of fruit trees. The photosynthesis values were considerably lower at the F414-treated variant in almost all times of the determinations, as compared to the control variant. The interaction between the thermo-hydric stress and the F414 product, applied on the leaves has led to a reduction in the carbon dioxide assimilation rate as a result of the drop in conductivity of the stomata. In the area of sandy soils, temperatures above 35 °C and relative humidity below 30% act as desiccant forces on plants, increasing foliar transpiration rate [3]. In the case of leaves treated with product F414, reducing the conductivity of stomata had a positive effect on foliar transpiration, closing of stomata, reducing the loss of plant water.

**Table 3.** Diurnal variation of physiological processes at Sprindold variety cultivated under thermo-hydric stress conditions (September 7, 2017).

Hour	Experimental variant	Prunus persica, Springold variety				
		Photosynthetic active radiation $\mu\text{mol/m}^2/\text{s}$	Air temperature $^{\circ}\text{C}$	Photosynthesis $\text{CO}_2/\text{m}^2/\text{s}$	Foliar transpiration $\text{mmol H}_2\text{O}/\text{m}^2/\text{s}$	Stomatal conductance of $\text{H}_2\text{O}$ $\text{mol/m}^2/\text{s}$
9 o'clock	Control variant	807	25,7	6,97	2,91	0,31
	Biotreatments with F414 bioprod	746	26,4	3,66	1,87	0,14
12 o'clock	Control variant	814	24,8	4,73	0,93	0,09
	Biotreatments with F414 bioprod	791	26,4	3,44	1,8	0,17
15 o'clock	Control variant	689	35,1	3,56	1,95	0,05
	Biotreatments with F414 bioprod	651	35,6	7,5	2,79	0,08



**Figure 1.** Water forms and dry substance from peach leaves grown under thermo-hydric stress

Analyzing figure 1, it is noticeable that leaves of the *Springold* peach variety have been subjected to severe water stress. The percentage values of total water, free water and leaf-bound water were higher at the variant treated with F414. Of

note is the percentage of bound water, which was 1.14% higher, indicating that application of F414 to peach has impressed increased resistance of plants to thermo-hydric stress. Similar research by Escobar-Gutierrez (1998) pointed out that the moderate water stress caused the relative water content of the peach leaves to drop from 74% to 70% and under severe water stress, the relative water content decreased to 67% [5]. Regarding the dry substance, its highest values (39.47%) were shown by the control variant, which is explained by the higher values of photosynthesis recorded in the untreated *Springold* variety with product F414.

## CONCLUSION

The intensity of the physiological processes recorded at the *Springold* peach variety was influenced both by the climatic factors specific to the southern area of Oltenia and by the phytosanitary treatments applied during the vegetation period.

Under conditions of thermo-hydric stress, with temperatures above 38 °C and insufficient rainfall, the application of the F414 biological product led to the formation of a hydroactive pellicle on the surface of the leaves, reducing the stomatal conductance of H<sub>2</sub>O.

Stomata closure reduced the carbon dioxide assimilation rate, and photosynthesis values were considerably lower in the variant where F414 biotreatments were applied. On the other hand, the percentages of the dry substance increased directly in proportion to the photosynthesis values, being higher by 2.19% for the control variant.

As for foliar transpiration, the F414 product had a positive effect, the pellicle formed on the surface of the leaves, reducing the amount of water lost at the foliage level. The application of this product has positively influenced drought resistance of the *Springold* variety, the percentages of the bound water being higher (5.1%) compared to the control variant (3.96%).

## ACKNOWLEDGEMENTS

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## SIGNIFICANT PROGRESS ACHIEVED IN COWPEA BREEDING IN ROMANIA

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### ABSTRACT

Climate change has led to the drought, the expansion of desertification, loss of wetlands, loss of biodiversity, declining agricultural output and productivity. In the area of sandy soils in the southwest of Romania, where, compared to the multiannual average, the average air temperature in the May-August period increased by 1.01°C and the precipitations recorded insignificant increases (5.97 mm), being very low (227. 82 mm) and unevenly distributed in relation to plant requirements. In these conditions it is necessary to cultivate some species of plants resistant to drought and to preserve and improve some genetic genetic resources adapted to the arid climate. For the efficient use of the microclimate in the sandy soils areas at the Dabuleni Research & Development Station for Plant Culture on Sands, three genotypes of Aura 26, Ofelia, Doljana were developed, which were studied in a comparison comparative culture with Jiana variety. The production potential of the new varieties (2120-2706 kg / ha) was clearly superior to the control variety, the production differences being significant and very significant.

**Keywords:** *Vigna unguiculata L. Walp, sandy soil, biology, productivity, quality*

### INTRODUCTION

In Romania the phenomenon of drought is a specific characteristic, due to the fact that our country is located in a temperate climate zone with very high deviations from the normal values of the climatic, agroclimatic, hydrological and pedological parameters. The accentuation of this phenomenon from the last period and the specific microclimate, which is created especially in the southern part of Romania, required extensive studies at the Dabuleni Research & Development Station for Plant Culture on Sands (R & DSPCS Dabuleni), which led to the promotion of some plant species, including cowpea (*Vigna unguiculata L. Walp*), a plant that capitalizes with good results the ecopedological potential of sandy soils. Originally from Central Africa, the cowpea is considered to be one of the oldest legume crops for beans on the three continents of the "Old World" [5], [14], being an important vegetable for East, South, Central and Western African agriculture [6]. Through plant physiology, cowpea is a drought-resistant plant with a wide ecological plasticity that can be cultivated widely in both high and low rainfall areas in South

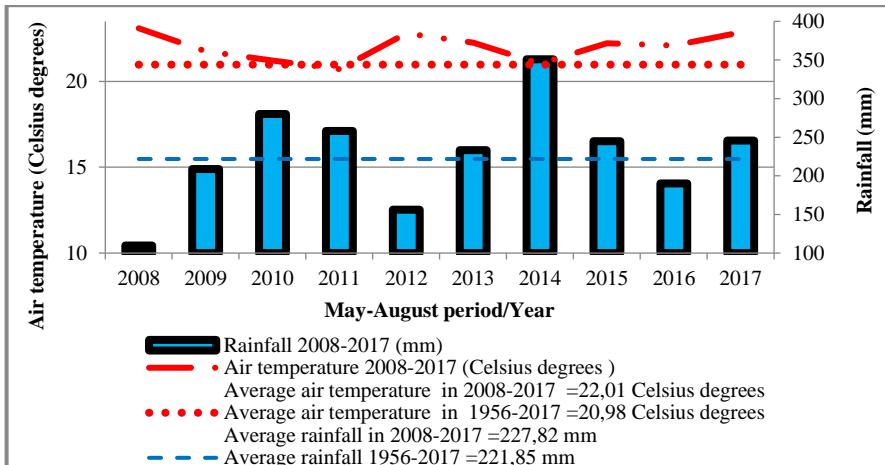
Africa. Considering that ensuring genetic progression in agriculture starts from the evaluation of existing germplasm resources and their specificity for a particular area [1], [2], [3], many studies have been made on the improvement of cowpea plant in various parts of the world. The research conducted by the Institute for Agricultural Research, Ahmadu Bello University Zaria, Nigeria, highlights drought-resistant cowpea genotypes and resistant to *Striga gesnerioides* (Willd.) [9]. The results obtained in Romania regarding the behavior of 144 genotypes of cowpea revealed the variability of the species in terms of plant biology, morphology and productivity [11]. Of the 144 studied cowpea genotypes, 38% allowed selection for the production of grain varieties for beans, 26% allowed selection of fetal genotypes for fodder, and 36% allowed the selection of genotypes for green fertilizer.

## MATERIAL AND METHOD

In order to promote a sustainable agriculture system in areas with sandy soils subject to aridisation, the choice of species and variety with high adaptability to the climatic and soil conditions is a necessity in obtaining high and safe production. In this regard, 3 cowpea genotypes created at R & DSPCS Dabuleni (Aura 26, Ofelia, Doljana) were studied in a comparative competition culture, compared to the control variety, Jiana (the first Romanian variety of cowpea). The study was conducted on a low fertility psamisol, poorly supplied in nitrogen (0.039%), medium supplied in phosphorus of 30.5 parts per million ("ppm") and low in potassium (129 ppm). Experience has been placed under irrigation conditions in a 3 year crop: cowpea - rye - sorghum. The cowpea genotypes were sown in the period of May 1-10, when in the soil the average temperature was 10-12°C, being fertilized with 60 kg / ha of nitrogen, 60 kg / ha of phosphorus and 60 kg / ha of potassium. During vegetation, soil moisture was maintained above the minimum 30% of the active humidity range, on a depth of 50 cm, in the phase of floral organs formation, flowering and the formation of pods, by application of 2 - 3 watering with a norm of 150-200 m<sup>3</sup> water per hectare. They were carried out observations and observations of biology, morphology, productivity and quality of the cowpea genotypes, and the results obtained were interpreted by variance analysis and mathematical functions.

## RESULTS AND DISCUSSIONS

From the analysis of climatic conditions recorded during the vegetation period of the cowpea (May to August) (Figure 1) show an increased temperature in the last decade, compared to the annual average, which combined with rainfall records, they have resulted in increased droughts. Thus, compared to the multiannual average, the average air temperature rose by 1.01°C and rainfall increased insignificantly (5.97 mm). The 227.82 mm rainfall, registered in the period 2008-2017, was unevenly distributed in relation to the requirements of most plants. The meteorological conditions recorded during the study period of the cowpea genotypes (2015-2017) highlight the increase of the drought phenomenon in the vegetation period, by increasing the air temperature by 1.41 °C, compared to the multiannual average. Through the plant's biological attributes, regarding increased drought resistance and reduced requirements for soil fertility, the cowpea may be a good alternative for bean culture and for soybean culture, plants very sensitive to stress factors in areas with excessive drought [4], [13].



**Figure 1.** Climatic conditions recorded at the meteorological station of R&DSPCS Dabuleni during the cowpea vegetation period (Mai-August)

Compared to beans, the cowpea has a very strong root system with a high absorption power, a waxy layer on the leaves, which gives it a greater resistance to the climatic conditions that occur in the sandy soil area. Often, elevated soil temperatures (+ 60 °C), accompanied by low atmospheric humidity, lead to bean flower abortions, partially or totally compromising culture [3], [10]. From germination to the end of the vegetation period, all the vital processes of the cowpea plant were carried out under high temperature conditions above 10°C. Under the study conditions, the vegetation period of cowpea genotypes ranged over 91-103 days, with a thermal demand of 2096 - 2353.9 °C (Table 1). Compared to the Jiana variety, which is very late, the Aura 26 and Doljana genotypes have been highlighted through an early 11-12 days, when maturing the pods. Early plant life is an objective of creating varieties in areas subject to aridisation, in order to avoid drought periods from the moment the plants flourish. Being a leguminous plant, the fascia forms on its roots numerous nodosites in which the bacterium develops and fixes atmospheric nitrogen. Nitrogen, biologically fixed by the leguminous plants, compared to mineral nitrogen, has advantages, because it does not consume fossil energy and is environmentally non-polluting. The results obtained in Nigeria, by K.O.Awonaike, on treatment the seeds of three cowpea varieties (Ife Brown, Ife BPC and AFB 1757) with Bradyrhizobium cowpea, revealed the biological fixation of about 74-116.87 kg / ha of atmospheric nitrogen [8]. The determinations carried out on the four cowpea genotypes, emphasizes intense symbiotic activity in the blooming phase of the plant (111.6-129.5 nodules / root), which confirms the plant's role in fixing the biological atmospheric nitrogen (Table 1). Statistical analysis of the functional connections of the leaf area index (L.A.I.) and the vegetative growth of the plant, reveals positive correlations with the height of the plant and significantly positive with the weight of the plant biomass. Type of plant growth allows selection and use biotypes of cowpea in the plant breeding process, according to the desired variety (grains, feed or green fertilizer).

**Table 1.** Biological characteristics of some cowpea varieties studied under the conditions of sandy soils in Romania

Genotype s	Vegetation period of the cowpea plant		The height of the plant (cm)	Plant weight (g)	L.A. I.	Plant growth type	No. nodules / root at flowering
	No. days	Amount degrees of temperature in air (°C)					
Jiana	103	2353.9	111.33	173.75	7.26 5	erect, undetermined	129.5
Aura 26	91	2096	82.33	147	5.13	erect, determined	114.8
Ofelia	95	2187.8	91.87	136.55	5.49 5	erect, undetermined	136.2
Doljana	92	2115.4	81.4	151.65	6.58	erect, undetermined	111.6
Correlation between L.A.I. and plant weight	$Y = 15.728x^2 - 181.04x + 659.75; R^2 = 0.972; r = 0.985^*$						
Correlation between L.A.I. and plant height	$Y = 14.646x^2 - 171.95x + 584.93; R^2 = 0.7027; r = 0.838$						
Correlation between the height and weight of the plant	$Y = 0.1093x^2 - 20.288x + 1077.7; R^2 = 0.996 ; r= 0.998^{**}$						

The plant productivity determines a number of pods in the range of 8.4-20.6 pods / plant, with a podshell length of 12.73-14.22 cm and a number of grains in the pod with values between 10.12-10.45 grains, depending on the genotype (Table 2). The genotypes Aura 26 and Ofelia were highlighted by higher percentages of grains/pods and grain weights. Similar results have been obtained in Brazil by Salvador B. Torres, which shows that the number of grains / pods per 10 cowpea genotypes ranged from 12 to 16 and the best results were obtained in the Amapá variety, which is the earliest [12]. An important role in the production of grain is represented by the percentage of grains / pods and the thousand weight grains (TWG). In this respect all three varieties created in Dabuleni registered a percentage of grains in the pod net superior to the witness variety, Jiana. In terms of grain weights (TWG), this indicator is a varietal character and has a range of 182.2 g (Aura 26) and 130.5 g (Doljana).

**Table 2.** Productivity characteristics of some cowpea genotypes studied under the conditions of sandy soils in Romania

Genotypes	No. pods/plant	No. grains/pods	Length pods cm	% of grains in the pod	TWG g
Jiana	8.4	10.12	14.22	76.3	174.7
Aura 26	14.23	10.6	14.0	82.6	182.2

Ofelia	17.27	10.37	12.73	82	175.5
Doljana	20.6	10.45	13.77	81	130.5

Under the conditions of 2015-2017, cowpea recorded between 1522-2706 kg / ha of grain, depending on the variety (Table 3). High yields revealed the Aura 26 and Ofelia varieties, which recorded very significant production differences from the control variant (Jiana). The color of the grain is an aspect of the cowpea breeding process, depending on the requirements of the consumers, and in this respect the researches carried out at Dabuleni aimed at obtaining the cowpea genotypes with white color of the grains. Thus, the Doljana variety, although having a lower production, due to its pleasant commercial appearance (the white color of the grain) is increasingly used in human nutrition. As a result of high protein content in both plant and bean, cowpea is considered to be the queen of psamisol areas, having multiple uses: in man's diet as pods or grains, in improving soil fertility, by cultivating the plant in crops from the sands or by incorporation into the soil as a green fertilizer [7], in animal nutrition, by participating with sorghum or rye in the formation of dried and silage feed. Analyzing the quality of grain production in fascia genotypes, is highlighted a crude protein content of 21.8-22.9%, a fat content between 2.2-2.7% and a boiling shell content ranging from 7.23-11.36%. The three genotypes created in Dabuleni showed superior nutritional values to the control Jiana variety, both chemically and physically.

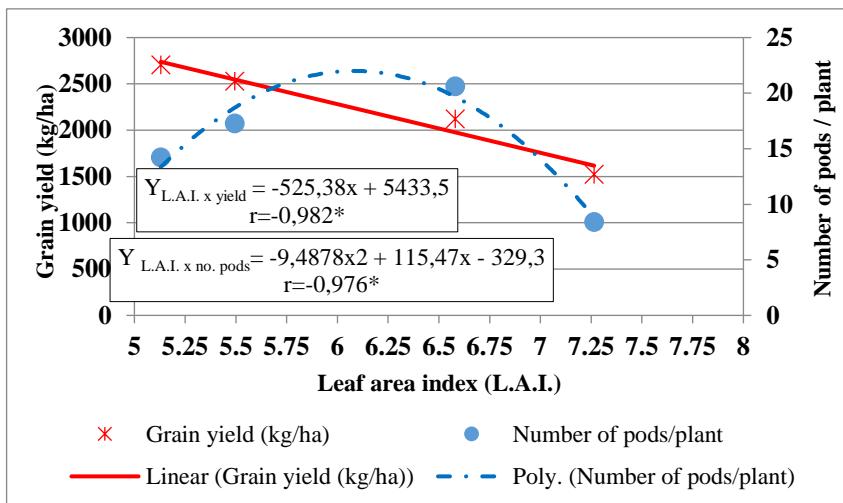
**Table 3.** Level and quality of production obtained from some cowpea genotypes studied under the conditions of sandy soils in Romania

Genotypes	Grai yield			Quality of grain				
	Kg/ha	The difference compared to the control Kg/ha	Significance	Color of the grain	Crude protein %	Fats %	Shell %	
Jiana	1522	control	control	reddish brown	21.8	2.2	11.3 6	
Aura 26	2706	1184	***	white with reddish brown hill	22.9	2.6	7.23	
Ofelia	2530	1008	***	white with black hill	22.5	2.3	8.12	
Doljana	2120	598	*	white	22.2	2.7	7.52	

$$\text{LSD } 5\% = 546.66$$

$$\text{LSD } 1\% = 978.665$$

$$\text{LSD } 0.1\% = 735.99$$



**Figure 2.** Correlations between Leaf area index and cowpea plant productivity

The intraspecific competition between plants is carried out during the development of the foliar system and the root system, and the results show that higher increases of energy biomass are achieved as the plant is cultivated in an area more similar to that of origin [10]. The results obtained in cowpea varieties show that they developed a rich vegetative mass, with an index of foliar surface in the blooming phase ranging from 5.13-7.265, which correlates negatively with the number of pods / plant and the grains yield obtained (Figure 2). From this point of view, the genotypes of cowpea with high value foliar surface index can be an important source of bioenergy for sandy soils.

## CONCLUSIONS

Due to the plant's biological features, increased drought resistance and reduced soil fertility requirements, the cowpea may be a good alternative for bean culture and soybean culture, plants that are very sensitive to stress factors in areas with excessive drought.

The vegetation period of the cowpea genotypes experimented to R&DSPCS Dabuleni was carried out during 91-103 days with a thermal demand of 2096 - 2353.9 ° C.

The results obtained in the four genotypes of cowpea show that they developed a rich vegetative mass with an leaf aria index, in the blooming phase, between 5.13-7.265, which correlates positively with the height and weight of the plant and negative with the number of pods / plant and grain yields.

They were revealed by high yields (2530-2706 kg / ha) Aura 26 and Ofelia varieties, which have been very significant differences compared to the Jiana control production.

The cowpea genotypes created at Dabuleni (Aura 26, Ofelia and Doljana) showed superior nutritional values to the control Jiana, both chemically (crude protein = 22.2-22.9%, fats = 2.3-2.7%) as well as physically (percentage of boiling shells = 7.23-8.12%).

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# THE ATTRACTIVENESS OF ECONOMIC SYSTEMS AS THE ASSESSMENT BASIS OF THEIR COMPETITIVENESS

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## ABSTRACT

Modern conditions are characterized by a sharp acceleration of all processes taking place in society. At the same time, competition in all studied social processes has intensified. The main factors that conditioned this situation are the extremely high rate of development of communications, transportation and the associated with this global digitalization and the integration of the world space. The external environment becomes the main source of uncertainty and the opportunities for development of each economic system. Increasing the competitiveness of economic systems at various levels should be the answer to these challenges. In this work, an economic system can be understood as any economic agent - a country, a region, an industry, an enterprise, a household, etc. The article deals with topical issues related to the development of an approach to the notion of competitiveness, based on the attractiveness of economic systems for stakeholders. Analyzing the works devoted to the competitiveness of systems, it can be noted that the main discussion goes on the competitiveness assessing indicators. The methods of evaluation offered by various scientists are more or less traditional indicators of the effectiveness or efficiency of the system. However, according to authors, the evaluations obtained are of unequal importance for various stakeholders, and, therefore, affect the competitiveness of the analyzed systems in different ways. The authors suggested using the concept of attractiveness as a basis for determining the competitiveness of systems. Within the framework of the proposed approach, "attractiveness" is the degree of importance of one or another characteristic for a particular person evaluating the given object. Therefore, one and the same object, characterized by certain indicators of its status and development, can be attractive to one type of interested parties and unattractive for another.

**Keywords:** *competitiveness, attractiveness, evaluation, assessment*

At the initial stage of the development of the evaluation methodology, a comparative analysis of the theory and practice of evaluating the attractiveness of systems was carried out. As a result of the analysis, the need to clarify the nature of the attractiveness and the factors affecting it, as well as the uncertainty factors and specificity of the analyzed systems, was revealed. The authors grouped the main tools for assessing the attractiveness of economic systems (regional and sectoral levels), highlighted their strengths and weaknesses, identified the main tasks, and built a logical framework for evaluation. The result of the analysis is the

systematization of knowledge in the evaluation of attractiveness, identification of the applicability limits and the possibilities for developing the existing theory and practice of assessing the attractiveness of economic systems.

## INTRODUCTION

As part of a research project of RFBR № 15-32-01058 «The development of a methodology for evaluating of the attractiveness of industries using techniques of key performance indicators and clustering in order to manage economic systems," the authors developed industries operating concept. This concept should become the basis of industrial policy pursued by the state and regional authorities. In this paper, industrial policy refers to the purposeful activity of the state in maintaining priority economic activities from the point of view of the state by applying administrative, organizational, financial and other instruments. Due to the uncertainty of the concept of "industrial policy," it can also be considered a synonym of the often used in our country concept of "structural or sectoral policies." Despite the large number of definitions, all authors agree on two distinctive features. The first is the unconditional need for state active participation in shaping the structure and organization of the sphere of material production. The second - the impact of the state is carried out in order to achieve national, system goals and objectives with long-term effect on the entire economy [1],[2],[3],[4].

## METHODS OF RESEARCH

The authors have proposed industries operating concept, implemented in the following stages:

- 1) Study of the region's economy to determine the goals and objectives of regional development;
- 2) Formation of relevant evaluation criteria, assessment of attractiveness and selection of industries;
- 3) Formation of a set of incentive measures;
- 4) Implementation of a set of incentive measures;
- 5) Monitoring the implementation and effectiveness of measures taken.

Considering the issues of industrial policy, the authors usually stop at the application of various instruments of influence on the development of various objects (national economy branches) [5],[6]. From the point of view of the authors, the measures and means of supporting the industries, studied in the literature are tools, the application of which must be methodologically grounded and, most importantly, goal-oriented. Thus, in our opinion, the stages of goal setting, task definition and selection of objects (industries) are fundamental and determine the further effectiveness of industrial (sectoral) policy for government intervention measures. It should be emphasized once again that the evaluation can not be performed using "normatively", "from above" laid down criteria. The choice of criteria should be clearly linked to the objectives and priorities of development priorities based on studies of the state of each particular region. Another characteristic feature of the evaluation is that as a result there is no need for "culling". Another characteristic feature of the evaluation is that as a result there is no need to cull or drop out certain objects that do not meet the specified criteria. So, for example, when considering alternative investment projects, the investor

conducts an assessment precisely to weed out the worst and choose one (or several) of the best. In the case of assessing the industries of the region, this task is obviously not being put. All evaluated objects are included in the overall structure of the region's economy and, in general, can not be excluded, eliminated from it. Thus, the set of analyzed objects (industries) in this case more suits the definition of «portfolio». In general, a portfolio is a set of objects that are designed to reduce risks and increase the profitability of the entity managing these objects. It is well known that even with a simple increase in the number of objects in a portfolio, non-systemic (specific) risks are significantly reduced, which is the reason for diversification and use of the portfolio for this purpose.

The above considerations lead to the following conclusions.

First. The goals of industrial (sectoral) policy are strategic at the level of the state and the region. The main task is the assessment, ie positioning of industrial branches on the economic map of the region for efficient distribution of state support funds.

The second. Complex of industries of the region (territory) can be considered as a kind of portfolio of objects, each of which should take its place in the structure of the economy of the region, increasing the overall stability of the territory.

Thus, the authors substantiate the idea of the possibility of using the tools of strategic enterprise management, expanding the scope and methods of its use in the sphere of industrial policy. Just as at the enterprise level strategic matrices are used to determine the means of influencing managed objects, in the field of industrial policy, the authors propose using a matrix approach to determine measures of state strategic support for managed objects (industries).

Let's consider in more detail the use of matrices in the process of strategic management of an enterprise to determine the opportunities for the development a matrix approach for the assessment of industries [7],[8].

**Table 1** Use of matrices in the strategic management of an enterprise

Nº	Name of the tool	Indicators used for axes	Analyzed objects	Area of analysis and management
1	The growth-share matrix	Market share - Market growth rates	Products, SBU	Market analysis
2	McKinsey matrix	Industry attractiveness - Business unit strength	Products, SBU, SBA	Market analysis
3	ADL Matrix Литтла	SBU's competitive position - SBU's life cycle	SBU, SBA	Market analysis
4	Shell Directional Policy Matrix	SBU's competitive capability - Prospects for sector profitability	SBU	Market analysis
5	Ansoff Matrix	Type of goods - Market type	Products, SBU	Market analysis

6	Hofer matrix	SBU's competitive position - The maturity of the sector	SBU	Market analysis
7	Price quality matrix	Price - Quality	Products	Market analysis Quality analysis
8	Quality - resource consumption matrix	Quality - Cost	Products	Production process analysis
9	Work quality management matrix	Labor results - Quality of work	Staff	Analysis of staff productivity and efficiency
10	The Blake Mouton Managerial Grid	Concern for People - Concern for Results	Management Styles	Management Review

Analysis of the practice of using the matrix approach in strategic management shows that the scope of its use is limited to the level of the enterprise. At the same time, various objects within the enterprise, such as products, business units, strategic business areas, personnel and management become objects of analysis. The authors suggest to expand the procedure for using the strategic management matrices, transferring their application to higher levels of management - territory, region, country. Thus, the matrix approach will be applied to the solution of high-level strategic tasks.

Another «narrow» place for the use of matrices is the use for their construction indicators of one type, most often market ones. As a result, the analysis of the investigated objects is limited to one aspect, usually - market.

## RESULTS

To solve the problems of assessing the attractiveness of industries, it is necessary to take into account various aspects that affect the attractiveness - economic, social, macroeconomic, etc. In such cases, there is a need to take into account indicators of different types - economic, social, environmental, etc. simultaneously. That is, the use of indicators of only one group is not sufficient. The authors propose to use complex indicators to construct a strategic matrix reflecting various aspects of the attractiveness of industries.

On the other hand, the authors consider that the use of indicators of the current state is not adequate. And in the general case, when evaluating certain objects in the scientific literature and practice, "point" indicators or indicators reflecting the state of the object at the current time are used. In view of the fact that in this study the tasks of strategic management of industries are considered, the use of only indicators of the current state is clearly insufficient. Thus, on the other axis of matrix formation, the authors suggest postponing of dynamic indicators reflecting the rate of change in current indicators. As a result, the possible perspective of the

development of the analyzed objects (industries) will also be displayed in the matrix.

The received matrix allows to place the analyzed objects (branches) in some or other quadrants of the matrix. Next, a set of measures and support tools will be defined for each set of industries along the quadrants of the matrix.

## **CONCLUSION**

In the course of research, the authors previously formed the concept of industrial policy, the main core of which is the stage of assessing the attractiveness of industries. This stage is decisive for the effective implementation of the distribution of government support measures. To solve this problem, the authors proposed an approach based on the methods of portfolio analysis in strategic management. This provision is justified by the presentation of the sectoral structure of the region as an analogue of the portfolio of business units of the company. Analyzing the limitations and drawbacks of the traditionally used tools of portfolio analysis, the authors present an authorial approach to the construction of a strategic matrix for assessing the attractiveness of industries. The place of the industry in this matrix is determined by the indicators of both the current state and the development of the industry. In the future, this will allow the development of a set of strategic support measures in accordance with each quadrant of the matrix.

## **ACKNOWLEDGEMENTS**

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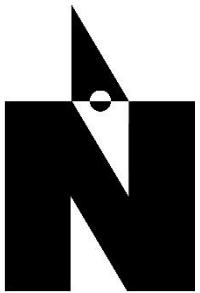
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Section FINANCE



# REVITALIZATION OF URBAN GREEN AREAS AS AN ELEMENT OF THE PROCESS OF THE CITY REGENERATION AS EXEMPLIFIED BY THE EXPO HORTICULTURAL 2024 IN ŁÓDŹ

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## ABSTRACT

Revitalization is a process which takes place simultaneously in many dimensions such as social, town-planning and functional or environmental one. The manner in which the post-industrial, post-military or run-down city quarters are adapted to serve new purposes is of vital importance in the said process. It results in changes in the functions performed by a particular area, the architectural and urban layout and transformations of some parts of the city. One element of the process is revitalization of green areas. It is even possible to venture a statement that revitalization is not possible without taking into account urban greenery. Greenery is currently referred to as the “green infrastructure” of the city since, in the same manner as the technical infrastructure, it plays a crucial role in improving the living conditions and increasing the comfort of urban life. The regeneration of greenery exerts a very positive impact not only on the image and the aesthetic value of the city, but also on the whole process of reviving degraded spaces. Changes in the city landscape are one of the most spectacular effects of revitalization activities. At the same time, they become a stimulus for taking more intense recovery measures in other spheres which are crucial for the revitalization process, e.g. in the social, economic or legal sector.

The paper is devoted to the revitalization undertakings in the city of Łódź from the point of view of the activities carried out within the framework of the EXPO Horticultural 2024. The paper discusses the vital issue of regenerating urban areas in cities. The issues presented in the paper concern current critical problems, which constitute global challenges, aimed at improving the quality of life in cities by means of modernizing or regenerating recreational areas, i.e. the green fabric. The objective of the paper is to draw the readers' attention, firstly, to revitalization, including regeneration of urban greenery, as a tool aimed at recovery from the crisis state of the degraded area and, secondly, to the benefits resulting from hosting international events and their impact on the local development. Łódź as one of the pioneering cities in Poland has made an attempt at carrying out comprehensive revitalization. Apart from the rehabilitation of degraded infrastructure, historic tenement houses or post-industrial areas pertaining to the 19<sup>th</sup> century factories, also the public space including green areas undergoes revitalization. The research methods applied in the paper are based on the study of literature on the subject. They will also encompass a financial analysis concerning revitalization in Łódź in the light of hosting by the city of the International Expo Horticultural 2024.

**Keywords:** *local development, revitalization, EXPO Horticultural*

## INTRODUCTION

The end of the 20<sup>th</sup> and the beginning of the 21<sup>st</sup> century is referred to as the era of cities. Over the last century, on almost all continents, there has taken place a significant change with regard to the image which has consisted in gradual transforming rural areas into urban ones. In 2010 the rate of inhabitants dwelling in urban areas in proportion to the overall global population amounted to approximately 50% and it has been growing ever since. According to the UN estimates, it is predicted that by 2050 almost 70% [1] of the population will reside and work in urban areas. Although modern-day cities play a vital role in the social and economic life of countries, they are a generator of innovative solutions, serve the society and boost prosperity, nevertheless they themselves require aid. Contemporary cities are fraught with problems regarding gradual degradation ensuing from the overexploitation of the urban fabric. Therefore, the regeneration of the extensively devastated urban fabric is of particular importance. Revitalization projects implemented in a comprehensive and coordinated manner should not only focus on recovering from the critical state of a given degraded area, but also on creating the conditions which may trigger its further development. Reviving the run-down city quarters, which consists not only in renovating the "hard fabric", *id est* the technical infrastructure, but also in introducing more greenery into the public space, constitutes a significant element of the whole revitalization process. In general, regeneration undertakings should not only be aimed at improving the standard of living in cities, but also at enhancing the quality of public space. For the purpose of spatial processes which are taking place in cities, including in particular revitalization activities, it is necessary to review the meaning of public space and urban green areas. Currently, it is increasingly emphasised that in order to attract people as well as business entities a city cannot be a "concrete desert". The greenery in a city is crucial for fostering a good climate and providing adequate conditions for effectively implementing comprehensive revitalization. Green areas in a city are indispensable for a good quality of life. The very awareness of the significance of greenery in highly urbanised areas in conjunction with the specific development and infrastructure of these areas, which are often of a historical, post-industrial or post-military character, exerts a positive influence on the revitalization activities carried out by public authorities. Greening of urban space constitutes a highly important component of the whole process aimed at regenerating degraded urban fabric. Selected examples of greening projects have been of such a significance that they have attracted publicity from far beyond the administrative boundaries of the cities in which they have been implemented, which is the case with hosting *inter alia* the EXPO Horticultural.

Although the paper is devoted to the revitalization projects carried out in the city of Łódź with regard to the activities undertaken in the course of organising the EXPO Horticultural 2024, it touches upon the current critical problems which constitute global challenges. The paper discusses the activities aimed at improving the quality of life in cities by means of modernizing or regenerating recreational areas, i.e. the green fabric.

The objective of the paper is to draw public attention to revitalization treated as a tool designed to enable the recovery from the crisis state of a degraded area as well as to the benefits resulting from hosting international events. Apart from the

study of literature on the subject, research carried out for the purpose of this paper will also encompass a financial analysis concerning revitalization in Łódź in the light of hosting by the city of the International Expo Horticultural 2024.

## **REVITALIZATION – ITS ROLE AND SIGNIFICANCE IN TERMS OF LOCAL DEVELOPMENT**

Local development is defined in various ways in the subject literature. It may be described as “harmonised and systematic activity undertaken by the local community, local authorities and other entities operating in the *gmina*, which are aimed at creating new practical advantages of the *gmina* and improving the existing ones, fostering local economy as well as ensuring spatial and economic order”[2]. Local development may also denote ““the process in which local governments or community-based organisations engage to stimulate or maintain business activity and/or employment. The principal goal of this engagement is to develop local employment opportunities in sectors which are beneficial for the whole local community. In the process of local economic development, existing human, natural and institutional resources are used.”[3] In general, when defining the notion of local development, it is possible to point out its characteristic features which show that it is an intentional, time- and labour-intensive process. It is initiated by local self-governments which take on the responsibility for monitoring, evaluating and analysing the effects which should bring about the amelioration of the living conditions of local communities. It is directly related to the increase in the standard of living of the inhabitants, and in the level of satisfying their life needs, which is reflected in a general improvement in the actual quality of existence. Any activities carried out at the local level should lead to *inter alia*: [4]

- supporting entrepreneurship and the local labour market,
- the ability to use the practical advantages and determinants prevalent in the *gmina*,
- improving the condition of the natural environment, and
- constructing technical infrastructure or further developing the existing one.

When seeking the stimuli which could intensify local development, many local self-government units implement activities pertaining to revitalization. Revitalization is a process whose distinctive features are the complexity and the interdisciplinary character of carried out activities, which is reflected not only in the time needed to implement these activities, which usually covers several years, but also in the need to constantly monitor, modify and update the whole process. In general, revitalization projects implemented by local self-governments may be divided into *inter alia*:

- economic revitalization undertakings – intended to provide conditions conducive to boosting the economy,
- spatial revitalization undertakings – aimed at improving the technical condition of buildings, and
- environmental revitalization undertakings – encompassing the processes designed to ameliorate the condition of the natural environment by enhancing communal green space.

With regard to the function performed by the area in which regeneration works are carried out the following types of revitalization activities can be distinguished: [5]

- revitalization of multi-family high-rise housing estates – the process of so called humanizing the high-rise,
- revitalization of degraded inner-city quarters as well as old city districts,
- revitalization of abandoned mono-functional lands – of a post-industrial, post-railway, post-shipyard, post-harbour or post-military character.

In addition to the above mentioned activities, also the undertakings aimed at regenerating degraded green areas in cities are growing in significance and thus urban greenery revitalization projects may be included in the catalogue of revitalization activities.

In general, it can be stated that “urban revitalization concerns selected areas, where negative phenomena are prevalent and their intensity makes it impossible to apply simple sectoral solutions”[6]. Revitalization projects, that is activities carried out primarily in the architectural and town planning, social and environmental scope, should revive degraded space by adding to it a new dimension of aesthetic order. Revitalization may also be perceived as an opportunity to create new spaces which can foster a friendly and attractive environment for inhabitants and tourists, including those who will visit a particular city due to mass events organised within its boundaries.

To sum up the deliberations presented above, it may be stated that revitalization undertakings are made up of the activities of an architectural and town planning, social and environmental character which together constitute a cohesive whole. They present a chance for restoring spatial order. At the same time, it is an opportunity to redevelop degraded areas to serve new functions. Apart from the improvement of the quality of life of the residents of a particular degraded area, revitalization activities are aimed at supporting local development defined, first and foremost, as a long-term process of change with an intentional character, which is focused on an intended improvement in the current state. Thus, it may be stated that one of the objectives of revitalization is boosting local development and one of the tools which may be applied to achieve it may be the hosting of mass events, in particular international exhibitions such as the EXPO. Such pro-developmental events constitute a part of the development strategy adopted by the local self-government.

## **ORGANISATION OF INTERNATIONAL EXHIBITIONS – BENEFITS FOR THE HOSTING CITY**

In accordance with Article 1 of the Convention Relating to International Exhibitions [7] an exhibition is a display which, whatever its title, has as its principal purpose the education of the public: it may exhibit the means at man's disposal for meeting the needs of civilisation, or demonstrate the progress achieved in one or more branches of human endeavour, or show prospects for the future. The above mentioned definition is supplemented with a statement that an international exhibition is a mass event in which more than one state takes part. The functions attributed to this kind of events encompass economic and commercial functions, but

also developmental ones, in the case of which the primary goal is to support the development of countries, regions and cities.

It is commonly acknowledged that mass events, including international exhibitions, help the city to develop its image. The venue where such an event is organised gains recognition in the international arena. Apart from the hosting city, also the whole region benefits from this kind of events as it takes advantage of the incentives stimulating local entrepreneurship. Thus, exhibitions are not only an effective aspect of local, regional or international promotion, but also a significant vehicle for conveying information, e.g. about the markets, the directions in which they develop and about new trends in international economy [8].

The list of positive effects for the city, which has endeavoured to organise a mass event must be based on the statement of gains which encompasses the following benefits: indirect and direct ones, current and future ones, primary and spin-off ones, financial, material, infrastructural, educational and marketing ones, gains for firms, fairs market entities, city budget and inhabitants. [9]

All the enumerated effects complement one another and achievement of the majority of these guarantees a successful fulfilment of set objectives, one of them being local development. A detailed listing of these effects together with their potential impact on local development are presented in Table 1.

**Table 1.** *The effects related to the organisation of international exhibitions.*

Time of exerting an impact	Effects of the impact			
	Measurable		Hard to measure	
	Positive	Negative	Positive	Negative
Before the event	New jobs	Preparation costs	New ideas connected with arranging the space in the city	Inconvenience connected with the organisation of the event
During the event	An increase in city budget revenues	Implementation costs	Better image, active promotion of the city	Changes to traffic organisation
After the event	Better look of the city as a result of renovation works including renovation activities carried out in green areas	Costs connected with cleaning up the area when the event has terminated	Experience, boosting local entrepreneurship, pride	Littering of public space, increase in petty crime

\*Compiled by the author on the basis of: Budner W., Organizacja imprez biegowych źródłem korzyści dla różnych beneficjentów, pp 10-11,

When summarising the deliberations concerning this issue in a general context, it may be pointed out that the organisation of any mass event, including international exhibitions, is inextricably linked with incurring costs (it is often the case that, in the initial calculations, outlays exceed potential profits), however it is

a part of creating the image of a particular city or region, which in turn is supposed to generate profits in the future.

Generally, the impact of mass events, including international exhibitions, on local development depends, first and foremost, on the significance of the undertaking. Nevertheless, regardless of the scale of the organised event (no matter whether it is of a regional, national or international character as is the case with the EXPO Horticultural 2024) it may be stated that one of the benefits resulting from the hosting of such events is creating the positive image of the city, which influences its development by *inter alia* an inflow of new inhabitants, investments and intensification of tourism as well as by achieving the objectives adopted in development strategies.

### **THE EXPO HORTICULTURAL 2024 ŁÓDŹ – ANOTHER STEP TOWARDS REGENERATING DEGRADED SPACE**

The EXPO is a mass event which is held on a cyclical basis. One of its goals is to enable its participants to present scientific achievements, to share knowledge and to showcase state-of-the-art technical advances as well as to participate in a worldwide debate on presented technologies, materials and ideas. One of the characteristic features of this kind of events is a specific guiding theme which corresponds to current world trends, which usually touches upon the issues of particular importance for present-day economies. The themes the EXPO is devoted to are crucial since they highlight what is, to a lesser or greater degree, relevant to most societies worldwide at the current moment, in the times in which we live. In general there are two basic types of world expositions. Every five years the World EXPO is organised. Its theme is of a general character. The next exhibition of this kind will take place in Dubai. The other type of exposition is of a specialised character. It is the so called International EXPO and it is held in between World EXPO exhibitions. The next exhibition of this kind will be hosted by Buenos Aires and will take place in 2022. Apart from the exhibitions which are devoted to society, technology, science, etc. there are also expositions where the guiding theme is the natural environment, i.e. EXPO Horticultural. Such exhibitions are devoted to the issues focused on urban greenery. As many as 7 types of EXPO Horticultural may be distinguished. These categories depend on the duration of the event, and the area it will cover. The existing categories of EXPO Horticultural are as follows: A1 – World Horticultural Exhibition (Large), duration 3-6 months, minimum area of 50 ha, sanctioned by the BIE, held every 2 years, minimum period of 10 years between two exhibitions organised in the same country, A2 - International Horticultural Exhibition (Short), duration 8-20 days, minimum area of 15,000 m<sup>2</sup>, B1 – Horticultural Exhibitions with International Participation (Long), duration 3-6 months, minimum area of 25 ha, B2 – Horticultural Exhibitions with International Participation (Short), duration 8-20 days, minimum area of 6,000 m<sup>2</sup>, A2/B1 – Horticultural Exhibition with International Participation (Long), duration 3-6 months, minimum area of 25 ha, C – International Horticultural Show, duration 5-20 days, and D – International Horticultural Trade Exhibition the so called business exhibition. [10]

The first EXPO Horticultural was held in 1960 in Rotterdam. The exhibition was organised on the area of 50 ha and it was visited by 4 m people. Overall, in the

period from 1960 to 2024, 23 EXPOS Horticultural of A1 type will have been held. Table 2 presents basic information concerning EXPOS Horticultural in the years 2002-2024.

**Table 2 EXPOS Horticultural A1 type in the years 2002-2024**

Country	City	Theme	Duration	Number of visitors	Area
The Netherlands	Haarlemmermeer	The contribution of the Netherlands horticulture and international horticulture in the quality of life in the 21st century	25.04.20 02- 20.10.20 02	2,071,000	140 ha
Germany	Rostock	A Seaside Park. A new flowered world	25.04.20 03- 12.10.20 03	2,600,000	100 ha
Thailand	Chiang Mai	To Express the Love for Humanity	01.11.20 07- 31.01.20 07	3,848,791	80 ha
The Netherlands	Venlo	Be part of the theatre in nature; get closer to the quality of life	05.04.20 12- 07.10.20 12	2,046,684	66 ha
Turkey	Antalya	Flowers and Children	01.04.20 16- 31.10.20 16	4,693,571	112 ha
China	Beijing	Live Green, Live Better	29.04.20 19 07.10.20 19	~16 mln	503 ha
The Netherlands	Amsterdam - Almere	Growing Green Cities	28.04.20 22- 23.10.20 22	~2 mln	60 ha
Poland	Łódź	City Re:Invented	04- 10.2024	~ 4 mln	~ 75 ha

\*compiled by the author on the basis of <https://www.bie-paris.org/site/en/expos/about-expos/expo-categories/horticultural-exhibitions>, <http://docplayer.pl/72308754-Expo-2024-lodz-polska.html>

On the basis of the data presented in the above table it may be noted that exhibitions raise interest among the general public. The expositions have been or will be visited (in the case of the exhibitions which will be held after the year 2018) by between 2 m to 16 m people. The area subjected to the “green metamorphosis” accounts for a large percentage of the city area as regards the cities which have hosted or will host EXPO Horticultural and ranges from 60 ha to 503 ha.

In March 2018 the members of the International Association of Horticultural Producers decided to grant the hosting of the EXPO Horticultural 2024 to Łódź. The city authorities applied for hosting the event in February 2018 after the city had lost in the competition for organising the small EXPO in 2022 (Łódź lost with Buenos Aires with the ratio of votes 56 to 62). Łódź is the third most populous city in Poland. The current population of Łódź amounts to 690,422 inhabitants [11], which accounts for 1.80% of the overall population of Poland. Łódź is the city where the issue of reconstructing degraded urban fabric is very important due to the large area in which the problems directly connected with revitalization processes are concentrated. Degraded quarters cover the area of 1,783 ha, which accounts for 6.08% of the total area of Łódź [12]. Aggregate minimum costs of the revitalization projects planned until the year 2020 will amount to approximately 233,492,300.16 euros, out of which the subsidies from the state budget will account for 4,393,202.52 euros and the funds from the European Union – 102,879,991.34 euros [13]. As indicated by the above mentioned data, total costs of revitalization activities constitute a significant financial burden for the city budget. Generally, the scarcity of public financial resources means that it is impossible to fully complete the tasks concerning rehabilitation of degraded urban fabric. Therefore, the priority in financing is accorded to the investments which have taken advantage of or will be able to take advantage of external financial assistance in the form of the EU funds or financial resources from private investors. Thus, the possibility of hosting the EXPO Horticultural 2024 is one of the methods of raising additional funds for implementing the investments which are so crucial for the city.

The guiding theme of the EXPO Horticultural 2024 will be ‘City Re:Invented’. It is a recognisable catchphrase which was first used during the promotional campaign of the city when it was running for the hosting of the EXPO 2022. This slogan is undoubtedly a continuation of the activities undertaken beforehand. It incorporates all the revitalization activities (social, economic and spatial ones), which are aimed at improving the quality of life. “The meaning of ‘City Re:Invented’ goes beyond the Horticultural EXPO. It encompasses *inter alia* social participation, area revitalization or social inclusion. At the same time ‘City Re:Invented’ means the preservation of the local and national heritage, which is manifested in protecting and respecting the functions and traditions of the city as well as in bestowing new energy on it.” [14] As part of the exhibition, a new Central City Park will be founded in the very centre of the city which will consist of three expanded parks the 3<sup>rd</sup> of May Park, the Baden-Powell Park and the area adjacent to the Clinical and Didactic Centre of the Medical University of Łódź. In other green spaces in Łódź special pavilions and thematic gardens will be set up for the duration of the exhibition, which will serve the needs of the inhabitants of Łódź many years after the termination of the said event.

The tentative cost of the exhibition, according to the data obtained from the Project Management Division, has been estimated at 100 m euros. These expenditures may however increase by additional 5 m euros when taking into consideration the financial resources allocated to developing the road infrastructure for the purpose of the organisation of the event. The Łódź authorities expect the central government to financially support the city in the organisation of the exhibition, as was the case with the Expo 2022 (according to the estimates resulting from the financial analysis of the budget of the International EXPO Exhibition, the amount earmarked to the EXPO from the city budget and the EU funds was supposed to amount to 649.76 m euros. The remaining amount totalling 738.14 m Euros was supposed to be provided by the company established especially for this purpose. The major shareholder of the said company was supposed to be the State Treasury which would contribute in the amount of 376.54 m euros, whereas the remaining 361.61 m euros was supposed to come from debt financing).

To sum up, although the estimated costs of the organisation of the Expo Horticultural 2024 are fairly high, it is envisioned that over the period of six months Łódź will be visited by at least 4 m guests. This means 21 thousand people per day (according to the Łódź City Office, the number of visitors may increase even to 30 thousand people per day). When calculating on average, one tourist will spend around 20 euros, which makes up the sum of 420 thousand euros. The sum will land directly in the purses of private entrepreneurs, and a proportion of it will indirectly contribute to the city budget in the form of taxes. Apart from that, also the proceeds from potential exhibitors will be transferred to the city budget. This means that the hosting of the EXPO Horticultural 2024 in Łódź will not only boost local entrepreneurship, but it will also improve the image of the city as well as enhance general local development.

## CONCLUSION

Summing up, the experience of territorial self-governments, including the worthy example of Łódź, as regards revitalization activities proves that bringing back to life the places which have lost their original function by promoting mass events such as EXPO or EXPO Horticultural constitutes a right direction for investment. It may bring substantial benefits not only for the local community, but also for the city. It should be taken into consideration that revitalization is a process which consists in regenerating degraded urban fabric. It is a recovery process which comprises many kinds of activities such as *inter alia*: modernisation of buildings, adapting the existing developments to new needs and assigning new functions to them, but it also encompasses the actions stimulating local development in the sphere of trade and services or restoring the balance in social life. Therefore, undertaking the activities in this regard results, first and foremost, in improving the quality of life of the city dwellers, but also in enhancing the image of the city. It is necessary to be aware of the fact that revitalization is not limited to merely reconstructing run-down urban infrastructure, but it also entails regenerating the city's green areas which enable city dwellers to rest. Greenery plays a vital role in the city. It exerts a substantial influence on raising the quality of life of its inhabitants. Unfortunately, revitalization is a particularly cost-effective process and local self-governments, trying to overcome the problem of scarcity of financial

resources, are currently searching for other sources of finance. One of such sources may be the hosting of the EXPO Horticultural 2024, which, on the one hand, will require spending 100 m euros but, on the other hand, will considerably contribute to the process of regeneration of the city which is currently under way.

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# THE SOCIAL COSTS IN INTERMODAL TRANSPORT BASED ON THE EXAMPLE OF THE EUROPEAN UNION

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## ABSTRACT

Transportation depends on the mining industry, as it provides transport and traction stock, fuels and energy, human labor, machinery, equipment and materials used to build transport infrastructure. Taking into account that transport in the European Union is heavily dependent on fossil fuels, limiting their consumption will entail reducing the mobility of road transport, which consumes most energy. Therefore, the priority of actions of the Member States of the EU is to transfer the burden of transportation from roads to multi-branch transport. It is dictated by the constant increase in the greenhouse effect, which is a consequence of the emission of toxic gases formed in the combustion of fossil fuels. In addition to the degradation of the environment, the negative effect of excessive use of road transport are its external costs, i.e. social costs, which are not directly born by transport companies, but by the entire society. These costs are directly related to the negative impact of transport activities on the environment and human life. The costs of environmental degradation, traffic accidents, traffic congestion, noise, human health, infrastructure of the area and lost production as a result of human death have the largest share in the external costs of transport.

The main objective of the study is to present the competitiveness of intermodal transport in relation to road transport in the process of generating external transport costs resulting from the European Union's transport policy.

**Keywords:** *social cost, intermodal transport, environment, competitiveness*

## INTRODUCTION

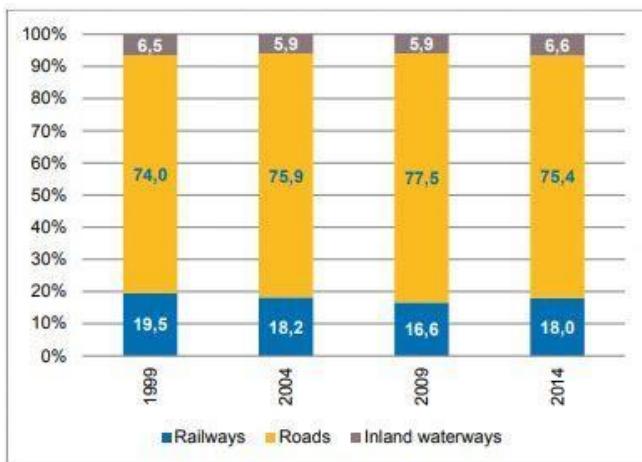
Contemporary transport connects people, cultures, cities, countries and continents and is one of the main pillars of modern society and innovative economy. Therefore, creating interoperability of transport requires the European Union to take action to include transport into a common European policy, which undoubtedly contributes to reducing the difficulties in the trade of products around the world. However, the increase in the scale of global transport in addition to the obvious benefits associated with the mobility and economic growth of individual regions creates a very high external (social) cost that burdens the whole society. These costs are brought about by the negative impact transport-related activities have on the environment and on human life, while not taken into account by any of parties involved. This phenomenon occurs when the interested entities use resources that have unspecified property rights. The said costs result mainly from the assortment structure of the demand on transport and the increase of quality requirements in

transport. The largest share in external costs of transport are those related to environmental degradation and pollution, which result mainly from soil, air and water contamination and the increase in the greenhouse effect. Additionally, there are also costs of traffic congestion, noise, human health deterioration, destruction of spatial economies of cities, production losses resulting from human death or road accidents. It is worth mentioning that globally everyday 140 thousand people are injured in road accidents. Of these, over 3 thousand die, and about 15 thousand never regain full health. [1] Furthermore, the noise of above 55 Db, caused by road traffic, is a problem of nearly 125 million people – one fourth of all Europeans. [2] Hence, the European Union in its transport policy aims to reduce the volume of car transport, which to a large extent depends on fossil fuels and contributes to the creation of significant social costs, including excessive emissions of greenhouse gases. According to EU guidelines, by 2050, the transport sector must reduce its emissions by 60% [3] so that the overall percentage of greenhouse gas emissions in Europe is to be reduced by around 80%. With this fact in mind, the aim of the article is to attempt to present the issue of the competitiveness of intermodal transport with respect to road transport in the process of generating external transport costs resulting from the European Union's transport policy.

## **EXTERNAL COSTS OF INTERMODAL TRANSPORT**

The external costs of transport, i.e. social costs, are all costs of consuming the means used to create a transport service, which are not borne by the producer of the service, but by the general public. [4] These are the costs resulting from the transport of goods and persons who are not directly borne by transport companies but by the whole of society. The problem of social costs is an important issue in European transport policy. In its activities, the European Commission strives to internalize the external costs of transport. As early as the "Green Paper" published in 1995, the external transport costs were pointed as a threat to the European public and environment. Another signal to create a unified transport policy and an attempt to reduce external costs was the "White Paper" publication in 2011, on the future of the transport sector until 2050, entitled "*Roadmap to a Single European Transport Area - Towards a competitive and resource efficient transport system*". In this document, the European Commission described the situation of the transport sector in the transition phase between old and new challenges and referred to measures aiming at external costs reduction. By outlining 10 objectives in the 2011 "White Paper", the Commission sought to create a single European transport area by removing persistent barriers between modes of transport and national systems, supporting the integration process by facilitating the creation of international multimodal operators. [5] Contemporary EU transport policy seeks to eliminate difficulties and barriers affecting the development of European transport. The manifests itself in the creation of a single European transport area, operating on the basis of fair competition between various forms of transport, such as road, rail, air and water transport. Undoubtedly, it is triggered by the fact that European road transport of goods grows at an average rate of 4.5% per year and, according to experts, this will not change. According to estimates of the European Commission, by 2050, the demand for passenger transport will increase by more than 50%, and for freight transport - by 80% compared to 2013. [6]

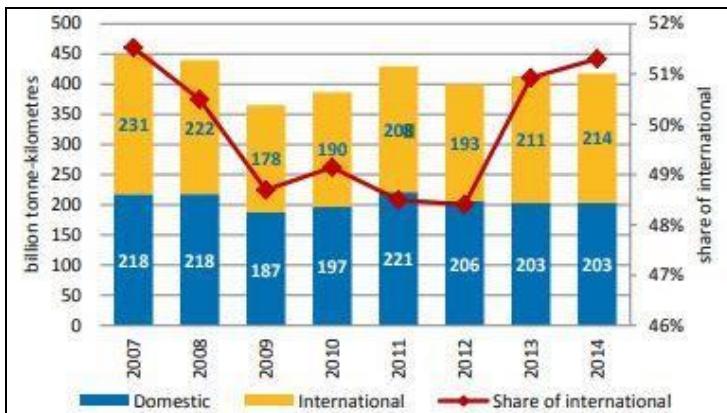
Taking into account the degree of use of various transport branches, it is estimated that in previous years, the volume of freight transport in the EU inland transport (including road, rail and inland waterways) stabilized at around 2300 billion tonne-kilometers, while the share of road transport is about 75% [7] (see Fig 1).



**Fig 1.** Freight land transport modal split [9]

In 2014 the share of rail freight in land transport was 18%, almost the same as 10 years ago. The share of road transport in generating all external costs is estimated at around 85% - 97% of the total costs. Out of all external transport costs of the European Union, 13% of them are generated by lorries which roughly amounts to approx. € 65bn. It is worth noting that the road congestion alone costs between € 146 and € 243 billion. Rail transport has a share of not more than 2% in these costs, whereas, importantly, freight transport is only 0.7%. [8]

In the case of intermodal transport, the costs incurred during the process are the sum of many elements occurring throughout the entire transport chain. These costs depend on the designed chain itself and on the activities related to transport. However, in intermodality, the essential transport of the cargo unit is carried out by railway, inland or sea routes. As a result, the road transport as such is very limited, practically used only for the pick-up and drop-off operations. In rail transport, the length of railways in the European Union in 2014 was about 220,000 km. [9] In the same year, rail freight transports were at a level of 417.6 billion tonne-kilometers, showing an average annual growth rate of 3%. In total, more than half of freight transport was international, which shows the scale of the importance of this type of transport in relation to passenger traffic (see Fig. 2).



**Fig. 2** Evolution of rail freight traffic [9]

This situation causes a rapid increase in the social costs of transport, reflected in the deterioration of the natural environment. Road transport is estimated to account for approximately 71% of carbon dioxide emissions from the entire transport sector. On the other hand, passenger cars account for two thirds of the emissions from road transport. Other means of transport cause significantly less pollution. Sea and air transport is responsible for 14% and 13% of pollution respectively, and the share of emissions from inland waterway transport is only 2%. The least pollutants are caused by rail transport, which is a source of less than 1% of emissions. [10] The negative impact of rail transport on the environment is essentially limited to noise and vibration emissions, pollutants (from diesel locomotives) and occupancy (see Table 1). According to the data of the Ministry of Investment and Development, European rail transport emits about 13% of total pollutant emissions from transport. [11] According to the publication of the European Environment Agency, rail transport in the EU is responsible for 1.5% of total NOx and CO<sub>2</sub> emissions. [12]

**Table1.** External costs of transportation by branch

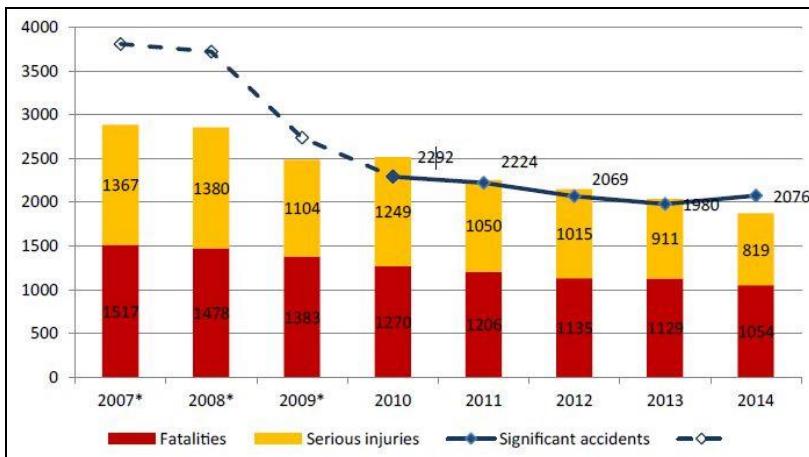
Cost euro/1000 tkm	Road freight transport	Rail freight transport	Waterborne freight transport
Noise	1.8	1.0	0
Nature and landscape	0.7	0.0	0.4
Accidents	10.2	0.2	0.0
Air pollution	6.7	1.1	5.4
Climate change high	9.8	0.9	3.6
Soil and water pollution	0.8	0.4	0.0
Road congestion	0.4-7.0	0.1-0.5	0.0
Total	30.4-37	3.7-4.1	9.4

Source: Own study, based on CE Delft, Infras, Fraunhofer ISI, *External Costs of Transport in Europe – Update study for 2008*, CE Delft, 2011, p. 10

The average value of external costs for road transport is EUR 33.7 per 1000 tkm, while in rail transport it is only EUR 3.9 per 1000 tkm. Thus, the costs generated by road transport are more than 85% higher than the costs generated by rail transport and by over 70% higher than the costs generated by inland transport. This is mainly due to the fact that there is a much smaller number of railway accidents in rail transport, as well as lower emission of air pollution and noise levels.

Social accidents are another extremely important aspect of social costs borne by the whole society. In its directives, the European Union aims to improve road safety and introduces the highest safety standards for road traffic across Europe, which are to reduce the number of road fatalities by half by the end of 2020. However, as statistics show, the number of victims in the European Union has not only not decreased, but the number injuries and deaths has increased. Only in 2015 there were 1090.3 thousand accidents, 3.3% more than in 2013, and the number of injured persons increased by 4.2%. 0.4% more people died on roads than in 2013. [13] (see Fig. 3). The low level of road safety in the European Union is the measurable social costs borne by citizens and economic costs burdening the economies of individual Member States. It is estimated that tens of thousands of fatalities and several million injured in road accidents significantly affect the reduction of national income, which undoubtedly leads to the impoverishment of individual countries. According to the European Union, only in 2015, social costs related to rehabilitation, health care, material damage, etc. of injured people and road deaths fluctuated at least 100 billion euros. [14]

On the other hand, the number of accidents in intermodal transport is completely different. The number of railway accidents is constantly decreasing, which results in a decrease in the number of fatalities. In 2014, the total number of victims of railway accidents amounted to 1054 deaths, i.e. by 7% less than in 2013. In 2010-2014, the combined number of fatal rail accidents decreased by 17%, an average of 4% per year (see Fig. 3). [15] In total, the social costs of railway fatal accidents at EU-28 level are estimated at EUR 1.4 billion, including material damages is about EUR 103 million, and the total costs of delays amount to EUR 71 million. It is estimated that the environmental costs generated by accidents on the railways are about 71 million euros. Thus, the social costs related to the safety of cargo transportation by – respectively - road or rail transport are definitely in favor of the latter, when analyzing even security issues only. With regard to road transport, rail transport is a much safer, which confirms the fact that almost 30 times less people are killed in road accidents than in road accidents, while in relation to the number of passenger-kilometers, rail transport is almost 3 times safer than the road one.



**Fig. 3** Significant accidents and consequences for EU-28 countries (2007-2014) [15]

In 2014, there were reports of 2076 serious accidents in the European Union resulting in 1.054 people being killed and 819 being seriously injured. This means a 5% increase in the number of accidents, but a 7% drop in the number of victims compared to 2013. Gradually, from year to year, the number of casualties and injuries in railway accidents in 2007-2014 is decreasing. Taking into account all deadly railway accidents (excluding suicides) in the European Union, the risk of mortality per million kilometers traveled by train was 0.28. It follows that the social costs of accidents in rail transport are lower by over 95% in urban areas and by over 90% in non-urban areas in relation to transport by road. Therefore, thanks to the use of intermodal transport as the main branch of freight transport, the total external costs of transport can be reduced by about 80-85% in relation to road transport.

## CONCLUSION

Intermodal transport that is developing in the modern world combines not only different branches of transport of goods and services, but mainly means for the movement of these goods. It provides the basis for an alternative solution to road transport. The development of the intermodal transport system requires not only a good knowledge of benefits and barriers, but above all a close integration of several transport branches, offering higher quality services and more cost-effective solutions than road transport does. This approach to intermodal transport is currently the main priority in the transport policy of the European Union and its countries. Due to the large environmental pollution and greenhouse gas emissions arising from the combustion of fossil fuels, the EU aims to shift the burden of freight transport from road to multi-branch transport. This is due to the fact the European Union has ordered all Member States to reduce greenhouse gas emissions by at least 60% by 2050 compared to 1990 levels. Currently, around 25% of total energy consumption in the EU-28 is associated with the transport sector, except for sea and pipeline transport, while the road transportation amounts the largest of energy usage in the sector, as much as 83%. The demand for oil in the transport sector accounts for 70% of all demand for oil in the EU, in 94% it depends on fossil fuels, while only 2% is supplied with electricity and 1% with biofuels. The total emissions in

the transport sector are still growing, this sector was responsible for 1/4 of total greenhouse gas emissions (CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O) in 2014 alone. Therefore, the European Union introduces instruments limiting the negative impact of road transport on the natural environment by financing infrastructure projects, among others: elimination of congestion of big cities and cargo ports, improving the competitiveness of rail transport (as a mode of transport generating lower CO<sub>2</sub> emissions than road transport), establishing rules for intermodal transport. According to the European Commission, these transport methods are considered to be one of the best solutions for environmental hazards generated by transport.

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# VALUE ADDED AS THE BASIS FOR MEASURING LABOUR PRODUCTIVITY

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## ABSTRACT

Productivity is generally defined as a ratio of output to input and may be expressed in physical quantity or financial value. At the organizational level, the financial value may refer to sales, value of production or value added. Value added (VA) indicates the wealth created through the organisation's production process or provision of services. According to the definition VA can be calculated as the difference between sales and the cost of materials and services incurred to generate the sales. This method is called the subtraction method or the VA creation method. Another way of calculating VA is by adding personnel cost (e.g. salaries and wages), management, cost of maintaining the business (e.g. interest from loans, depreciation), and profit. This method of calculation is called the subtraction method or the VA distribution method. If we assume that manpower plays key role in creating the wealth of an organisation, labour productivity (i.e. value added per employee) may be used as the overall measurement of productivity. However, to investigate what affects labour productivity, disaggregation of this ratio should be made to the levels of activity and operational ratios. In this way, several indicators can be obtained, which allow the board to assess the productivity of its company. These levers are areas or actions that organisation can focus on to improve productivity, although the analysis shows that these levels are not autonomous. Improvements at one level requires simultaneous action at some other levels to achieve the effect. A set of indicators used to assess productivity of the company can be called value-added productivity measurement.

The aim of the study is to assess the productivity of the Polish mining company based on the generated value added and on indicators obtained from disaggregation of VA on the activity and operational levels. The analysis of results will allow to show in which areas improvements should be made.

***Keywords:*** *value added, productivity, labour productivity, activity indicators, productivity indicators*

## INTRODUCTION

Each company must evaluate its activities. This assessment, on the one hand, aims to determine its current situation in relation to previous periods, and on the other hand to determine its position in relation to the competitors. One of the areas to be analysed is a broadly understood financial analysis, where several indicators are calculated from groups of ratios such as liquidity, debt, asset management, profitability and market value. The analysis of the productivity of the company is a supplement, or rather broadening of the financial analysis.

Productivity shows the company's ability to use its resources. It is commonly defined as a ratio of a volume measure of output to a volume measure of input use. There are some objectives of productivity measures. These are [5]:

- to trace *technology* change which appears either in its disembodied form (e.g. scientific results, new organisational techniques) or embodied in products (e.g. new design, improved quality);
- to identify changes in *efficiency*; to what extent a production process has achieved the maximum amount of output that is physically achievable with current technology and given a fixed amount of inputs;
- to achieve *cost savings*; it could be seen as a chance to identify real cost savings in production;
- to compare with other companies for measures expressed in physical units.

There are many different measures of productivity. At the industry or company level it is useful to use productivity measures that relate some measure of gross output to one or several inputs or to use a value-added concept to capture movements of output. Various productivity measures can be computed, depending on the treatment of inputs and outputs. Single-factor productivity ratios, such as labour productivity or capital productivity, give output per unit of a single input type. Multi-factor or total-factor productivity ratios take into account the fact that multiple inputs are jointly used [4].

Labour productivity is the most common productivity measures, partly because it is the easiest to compute. Labour productivity corresponds to output per unit of labour input or value-added per worker-hour. It reflects the efficiency and effectiveness of labour in the production and sale of the output. There are many factors that affect labour productivity; these are: demand factors, innovation, investment in machinery and equipment, technology, systems and processes, attitudes and skills of workers.

## THE CONCEPT OF VALUE ADDED

Value added (VA) can be calculated through the modification of retained profit formula, which is obtained after subtraction from sales bought-in-materials and services, depreciation, wages, interests, dividends and taxes:

$$R = S - B - Dep - W - I - Div - T \quad (1)$$

where:  $R$  – retained profit,  $S$  – sales,  $B$  – bought-in-materials and services,  $Dep$  – depreciation,  $W$  – wages,  $I$  – interest,  $Div$  – dividends,  $T$  – taxes.

Hence Value Added is calculated according to the following formula (gross value added):

$$S - B = W + I + Dep + Div + T + R \quad (2)$$

or (net value added)

$$S - B - Dep = W + I + Div + T + R \quad (3)$$

VA can be calculated in two ways; either the left side is calculated – it is called subtractive method, or the right side is calculated – it is called additive method.

VA is distributed as wages to employees, depreciation for reinvestment in machinery and equipment, interest to lenders of money, dividends to investors and profits to the organisation. This distribution level reflects Value Added Statement which is obtained by modifying the profit and loss account. Equation (2) reflects the format of the VAS. Left side of (2) presents the upper part of the VAS, where the value of purchased materials and services is deducted from the sale revenues, which shows gross VA obtained by the company. The right-hand side of this equation corresponds to the lower part of VAS; it shows the distribution of the created gross value added between participants that generate this value [3]. The simplified form of the VA statement can be illustrated as follows:

Sales Revenue	1000
Less: Cost of bought in goods and services	250
<b>Value Added</b>	<b>750</b>
<b><u>Distribution of Value Added</u></b>	
Employee Benefits	250
Capital providers (Creditors and Lenders)	100
Taxes	100
Value retained	300
<b>Value Added</b>	<b>750</b>

The value added can be computed by using data from a company's financial statements. The analysis of VA information focuses on how well a firm is able to increase the sales by better integrating customer requirements into product functionality and service delivery. It also helps a company focus on listening to the voice of its customers, building core competency, and search for ways to purchase the raw materials at the optimal price. Hence creativity and innovation in translating customer needs into product and service development become critical [7, p. 42].

## LABOUR PRODUCTIVITY INDICATORS

For each organization, the set of productivity indicators can be designed and adapted accordingly to its needs. It should be guided by certain principles:

- Indicators should measure something significant;
- Indicators should be meaningful and action-oriented;
- Components parts of the indicators should be reasonably related;
- Indicators should be compared within industry or benchmarked;
- Data should be reliable and consistent;
- Indicators should be easily understood by employees and practical to obtain.

There are at least ten key indicators commonly used to measure an organisation's overall productivity performance. These are [2]:

	Indicator	Unit	Formula	What It Measures
1	Labour Productivity	Monetary unit	$\frac{\text{Value added}}{\text{No. of employees}}$	Efficiency and effectiveness of employees in the generation of VA
2	Sales per employee	Monetary unit	$\frac{\text{Sales}}{\text{No. of employees}}$	Efficiency and effectiveness of marketing strategy
3	Value added-to-sales ratio	%	$\frac{\text{Value added}}{\text{Sales}}$	Proportion of sales created by the organisation over and above purchased materials and services
4	Profit margin	%	$\frac{\text{Operating profit}}{\text{Sales}}$	Proportion of sales left to the organisation after deducting all costs
5	Profit-to-value added ratio	%	$\frac{\text{Operating profit}}{\text{Value added}}$	Operating profit allocated to the providers of capital as a proportion of value added
6	Labour cost competitiveness	Times	$\frac{\text{Value added}}{\text{Labour cost}}$	Efficiency and effectiveness of the organisation in terms of its labour cost
7	Labour cost per employee	Monetary unit	$\frac{\text{Labour costs}}{\text{No. of employees}}$	Average remuneration per employee
8	Sales per monetary unit of capital	Times	$\frac{\text{Sales}}{\text{Fixed assets}}$	Efficiency and effectiveness of fixed assets in the generation of sales
9	Capital intensity	Monetary unit	$\frac{\text{Fixed assets}}{\text{No. of employees}}$	Extent to which an organisation is capital-intense
10	Capital productivity	Times	$\frac{\text{Value added}}{\text{Fixed assets}}$	Efficiency and effectiveness of fixed assets in the generation of value added

An effective productivity measurement system should be an integral part of any organisation's information system. Regular data collection and calculation of productivity indicators allows for an in-depth analysis of the company's operations and internal comparative analysis within the assumed time horizon, as well as a

comparison with indicators from a given sector. Generalizing, productivity indicators can be used to [1]:

- Evaluate the effectiveness of action plans;
- Monitor performance;
- Set targets and formulate strategies;
- Account to various stakeholders – customers, investors, employees, suppliers and funding agencies;
- Link effort and reward for employees.

The presented indicators are interrelated, and some of them can be assigned to the category respectively key management indicator, activity indicators and operational indicators. At the top is key management indicator, which is labour productivity. It can be broken down into activity and operational indicators. Activity indicators provide a picture of costs, activity levels and resource utilisation rates – they are useful for middle and higher management. Operational indicators are usually physical ratios that relate to operational aspects that need to be monitored and controlled.

## **PRODUCTIVITY INDICATORS OF MINING COMPANY**

The calculations illustrating presented in this paper issue were carried out on the example of one of the Polish mining companies for the years 2014-2017. Based on the annual reports and financial statements, the conducted calculations are presented in tables 1-3.

*Table 1. Value added statement for mining company*

	2014	2015	2016	2017
Revenues from sales	1 627	1 657	1 538	1 798
Material costs	580	1 368	586	604
<b>Value Added [million €]</b>	<b>1 046</b>	<b>289</b>	<b>953</b>	<b>1 194</b>
<b>Distribution of Value Added distribution [million €]</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
	<b>1 046</b>	<b>289</b>	<b>953</b>	<b>1 730</b>
Employees	870	841	658	757
Capital providers	26	36	47	-2
Interest	26	36	47	-2
Dividend	0	0	0	0
State Budget	-3	-128	54	181
Income Tax	-54	-182	3	137
Taxes	51	54	51	44
Company	<b>154</b>	<b>-459</b>	<b>193</b>	<b>793</b>
Depreciation	311	326	192	194
Retained earnings	-157	-785	1	599

*Table 2. Value added distribution for mining company*

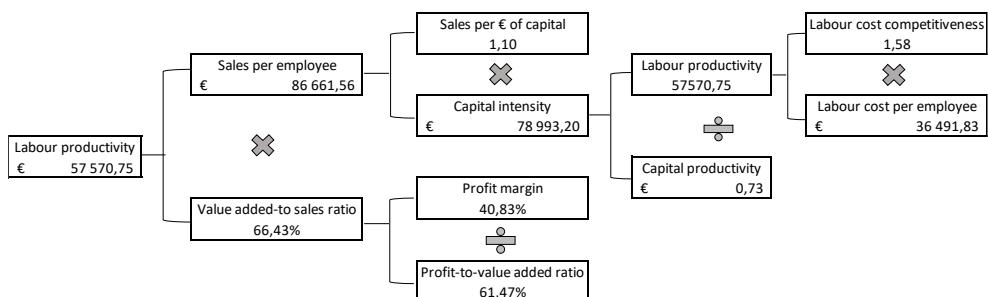
Value Added Distribution	2014	2015	2016	2017
Employees	83%	291%	69%	44%
Capital providers	2%	12%	5%	0%
State Budget	-0,3%	-44%	6%	10%
Company	15%	-159%	20%	46%
	100%	100%	100%	100%

*Table 3. Productivity performance indicators for mining company*

Ratios	2014	2015	2016	2017
1-Labour productivity	€ 43 886	€ 11 424	€ 41 503	€ 57 571
2-Sales per employee	€ 68 227	€ 65 537	€ 67 024	€ 86 662
3-Value-added-to-sales-ratio	64,32%	17,43%	61,92%	66,43%
4-Profit margin	-11,37%	-56,18%	3,37%	40,83%
5-Profit-to-value added ratio	-17,67%	-322,30%	5,44%	61,47%
6-Labour cost competitiveness	1,20	0,34	1,45	1,58
7-Labour cost per employee	36 476	33 241	28 685	36 492
8-Sales per 1 € of capital	0,57	0,82	0,91	1,10
9-Capital intensity	€ 119 591	€ 80 037	€ 73 697	€ 78 993
10-Capital productivity	0,37	0,14	0,56	0,73

The situation in mining, including also in Poland, is very variable, which is reflected in the financial results. The net profit generated by the audited company changed from the net loss in 2014 (-156.9 million €) and in 2015 (-785 million €), through net profit in 2016 (1 million €) and in 2017 (599.2 million €). This, among others had an impact on the VA generated - as can be seen in Table 1. These two years of net loss meant that the company did not pay taxes and retained earnings are recorded as negative. This makes it difficult to analyse VA distribution.

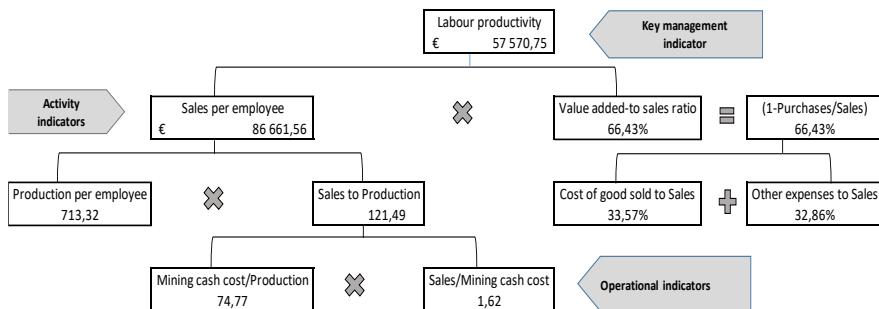
It is much easier to analyse the years 2016-2017. The main changes are the reduction of VA distribution to employees and the increase of VA distribution to the company.

*Fig. 1. Disaggregation of the Labour productivity indicator (values for the year 2017 of the mining company)*

Analysing the productivity performance indicators (Tab. 3), the years 2015 to 2017 are optimistic. Most indicators are gradually increasing. For example, Labour productivity has more than quadrupled, and Sales per employee increased by over

30%. It is worth showing the relationship between these indicators, so you can see which indicators and to what extent they have affected Labour productivity. This is shown in Figure 1.

For each company, the disaggregation of Key management indicator (Labour productivity) can be achieved for the analysis to show the relationship between the various indicators specific to a particular industry and indicate the activity and operational indicators. An example of such a visualization for a surveyed mining company is shown in Figure 2.



**Fig. 2. Factors affecting the labour productivity indicator (values for the year 2017 of the mining company)**

## CONCLUSION

Productivity measurement usually deals with three perspectives with the primary focus on the input side. The first one is called total factor in which an organisation's output is divided by a total input. Partial or multi factor productivity measurement involves the relationships between total output and two or more input factors. And the last one is called single factor productivity measurement calculated as a total output divided by a single input factor. Each perspective represents different challenges for measurement effort [6].

Recently, we have been observing a special emphasis on the output side and the attention has turned to how much value, i.e. value added, a firm is able to generate. The term value added is used to show how well a firm can utilize both tangible and intangible assets which represent its input factors. This is because an output should not only represent what a firm produces but also reflect the value added into the products and/or services to be used by customers.

The basic productivity indicator based on value added is Labour productivity. But for a thorough analysis it is necessary to disaggregate this indicator into other ones. In this way, a number of indicators mutually related to each other can be obtained. Thanks to this, it is possible to analyse which indicators and to what extent they have affected Labour productivity, as well as being able to simulate using the "what if" method.

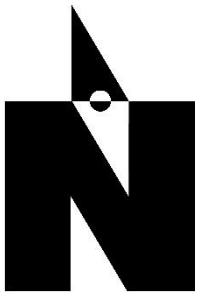
The work presents these issues on the example of a Polish mining company, but the problem is of a general nature and such analysis can be carried out for a company from any sector, possibly selecting activity and operational indicators.

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Section LAW



# ACTUAL PROBLEMS OF SETTLEMENT AND IMPLEMENTATION OF CRIMINAL LIABILITY FOR CRIMES RELATED TO ILLEGAL MIGRATION

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## ABSTRACT

The problems addressed in the present research are related to the shortcomings of criminal law prohibitions in the field of combating illegal migration, which make it difficult for law enforcement activity to interpret and resolve the competition of articles 322.1, 322.2 and 322.3 of the Criminal Code of the Russian Federation (hereinafter - CCRF) and legal norms on liability for similar offenses. General scientific and privately-based methods among which the sociological methods of studying the materials of criminal cases and opinions of experts prevailed were used in the research. The statistical data of the Judicial Department under the Supreme Court of the Russian Federation, the results of a survey of 87 judges, of 260 servants of law enforcement bodies and 125 scientific and pedagogical employees working in Moscow, Moscow region, Tambov region, Tver region, Tula region and Yaroslavl region were analyzed. The materials which were provided by the Supreme Court of the Russian Federation (hereinafter – SCRF) containing a summary of judicial practice in criminal cases on such crimes have been studied. It is concluded that articles 322.1, 322.2 and 322.3 of the CCRF of the current edition do not meet the requirements of systemic and legal certainty and do not allow to form a unified practice of delineating the crimes they envisage from similar administrative offenses, they need to improve and clarify the interpretation of Plenum of the SCRF. It is proposed to supplement the dispositions of articles 322.1, 322.2 and 322.3 of the CCRF with new constitutive elements of the relevant body of offenses (committing an act by a person subjected to administrative punishment for the corresponding offense, its implementation against two or more Russian or foreign citizens, as well as stateless persons, malversation). Issues that need interpretation from the Plenum of the SCRF are also indicated.

**Keywords:** *illegal migration, criminal liability, fictitious recording, fictitious registration*

## INTRODUCTION

Illegal migration is an integral part of migration processes, increasingly being considered in the context of the system of determination of various types of crime and criminality in general [1], [2], [3]. In particular, the problems associated with the current migration crisis and its impact on crime have now touched upon many

states trying to work out concerted measures to counter new threats to their security [4],[5],[6],[7]. The corresponding preventive activity of law-making and law enforcement bodies which can fully include the establishment and implementation of legal responsibility for various violations of migration legislation, including for crimes in this area is aimed at reducing the determinative effect of migration.

The specifics of the body of crimes envisaged in articles 322.1, 322.2 and 322.3 of the CCRF and modern problems of regulating and realizing of responsibility for such crimes are considered in this paper.

The Art. 322.1 which was included in the CCRF by the Federal Law №187-FZ of December 28, 2004, establishes the responsibility for organizing of illegal migration involving the organization of illegal entry into the Russian Federation (hereinafter – RF) of foreign citizens or stateless persons, their illegal stay in RF or illegal transit passage through territory of our state. 475 persons were convicted under the Art. 322.1 of the CCRF in 2010, in 2011 - 612, in 2012 - 292, in 2013 - 588, in 2014 - 883, in 2015 - 820, in 2016 - 900 and in 2017 - 763 people (Hereinafter, statistical data of the Judicial Department under the Supreme Court of the Russian Federation are used - see: Official website of the Judicial Department under the Supreme Court of the Russian Federation, section "Court statistics": URL: <http://www.cdep.ru/index.php?id=79&item=4477> (access date: 30/04/2018). Articles 322.2 and 322.3 on liability for fictitious registration (recording) at the place of temporary stay or at the place of residence in a living premise in the RF were introduced into the CCRF by Federal Law № 376-FZ of December 21, 2013. 216 persons were convicted in 2014 during the first year of the operation of Article 322.2 of the CCRF, in 2015 - 507, in 2016 - 1064 and in 2017 - 1628 persons. The greatest increase in the number of convicts in this area is observed in relation to Art. 322.3 of the CCRF according to which 3,479 persons were convicted in 2014, in 2015 - 5631, in 2016 - 7700, and in 2017 - already 11,643 persons.

As a justification for the criminalization of actions which are prohibited by articles 322.2 and 322.3 of the CCRF, a significant number of addresses according to which citizens are registered fictitiously, without the intention to live in the declared premises were outlined that makes it practically impossible for registration authorities to send necessary and reliable information to the tax authorities, military commissariats, courts, etc., complicates the recording of foreign citizens (See: Explanatory Note to Bill № 200753-6 "On Amendments to Certain Legislative Acts of the Russian Federation" // Official website of the State Duma of the Federal Assembly of the Russian Federation, section "Support System of Legislative activity": URL: <http://sozd.parlament.gov.ru/bill/200753-6> (access date: 30/04/2018)). At the same time, this only mean the prevalence of the corresponding violations of the migration legislation, which borders on mass character and calls into question the validity of the legislative decision by which such actions are attributed to the sphere of action of precisely criminal law [8]. The interviewed judges expressed the opinion that, due to the similarity of the content of dispositions of Art. 19.15.2 of the Code of Administrative Offenses of the Russian Federation (hereinafter – CAORF) on liability for violation of the rules of registration of a Russian citizen at the place of stay or at the place of residence in a living premise and Art. 322.2 of the CCRF the necessary prerequisites for delineating the corresponding administrative and criminally punishable acts are missed.

In addition, a significant example of competition of rules of criminal and administrative law is the ratio of articles 322.2, 322.3 of the CCRF and Art. 19.27 of the CAORF "Provision of knowingly false information in the course of migration recording" the dispositions of which includes almost complete coincidence of the elements of the objective side of the body of crimes and offenses under consideration, since fictitious registration or recording presupposes the provision of false information expressed in that other form to the migration authorities.

We believe that the establishment and application of administrative-legal measures of response would be sufficient to effectively counteract the majority of offenses in the field of migration recording. The introduction of criminal liability for fictitious registration (recording) would be justified only when new articles 322.2, 322.3 of the CCRF include such criminological elements that would unequivocally point out the public danger of the actions which are prohibited by them and would allow the delimitation from similar administrative offenses. In particular, such elements could be the commission of an act by a person previously subjected to administrative punishment for the corresponding offense, its implementation against two or more Russian or foreign citizens, as well as stateless persons, malversation. 90.8% of the respondents among the number of judges, 76.54% of the polled employees of internal affairs agencies and 87.2% of scientific and pedagogical workers agreed with the need to introduce such alternative additional criminological elements in the dispositions of articles 322.2, 322.3 of the CCRF.

With regard to the organization of illegal migration which is prohibited by the Art. 322<sup>1</sup> of the CCRF, we should note that the study of the practice of application of this criminal law rule showed that it is not uncommon for the bodies of preliminary investigation to bring to responsibility, and the courts to convict for specific actions of employment and ensuring the residence of illegal migrants who do not have a public danger. At the same time, it is not taken into account that such administrative responsibility are provided for such violations of the migration legislation (Part 3, Article 18.9, Article 18.15 of the CAORF).

While a significant part of the respondents (34.48% of the judges, 48.08% of the Department of Internal Affairs' employees and 87.2% of the scientific and pedagogical employees) expressed the opinion that the criminal liability under Art. 322.1 of the CCRF, according to its literal interpretation should be applied precisely for the organizational activity, which consists in finding partners, planning these illegal actions, directing their commission, etc. We agree with the expressed opinion about the fact that within the meaning of this norm the organization of illegal migration should be expressed in a complex of actions carried out "... not with respect to one foreign citizen or stateless person, but with respect to an indefinitely large number of persons, therefore this act must be of an ongoing nature or be committed one-time, but in relation to a large number of people". At the same time, in order to give for greater certainty of the content of dispositions of Part 1 of Art. 322.1 of the CCRF, we consider it expedient to include in it of such a crime-forming element as the commission of organizational actions systematically and (or) against two or more foreign citizens or stateless persons. About 51.72% of the respondents from among the judges, 58.46% of the interviewed Department of Internal Affairs' employees and 80.8% of the scientific and pedagogical workers agreed with this proposal.

The consolidation of the practice of the application of articles 322.1, 322.2 and 322.3 of the CCRF showed that the courts had no uniform approach to the legal assessment of the commission by the same person of several actions to organize illegal migration or fictitious registration at the place of residence or registration at the place of stay: in some cases, such actions are qualified as one continued crime, and in others - as a combination of two or more crimes.

In particular, when deciding on the qualification of actions to organize the illegal entry into the RF of several migrants which are committed simultaneously or for a short period of time, the courts mainly consider this committed act as one single complex crime if the relevant unlawful actions were covered by the common intent of the guilty persons. We believe that in most cases, the commission of two or more actions related to illegal migration is initially covered by the intent of the guilty persons, who usually deal with the relevant illegal activity on a regular, systematic basis, but the preliminary investigation bodies and then in some cases the courts qualify the deed not as one, but as a set of crimes.

The legal assessment of the considered violations of the migration legislation that have been committed in relation to two or more persons as a set of crimes is due to the approach which was developed in administrative practice, based on a note to Art. 18.9 of the CAORF, which stated that in case of violation of the established procedure for registration of documents for the right of stay of foreign citizens and stateless persons in Russia, their residence, movement, change of place of stay or residence in the Russian Federation and departure for two and more invited foreign citizens and (or) stateless persons, the administrative responsibility established by this norm applies with respect to each foreign citizen or stateless person separately.

We believe that in order to give uniformity to relevant judicial practice and to eliminate the prerequisites for render unfair law enforcement decisions on cases of crimes related to illegal migration, it is expedient for the Plenum of the SCRF to explain in which cases the commission of actions which are prohibited by articles 322.1, 322.2 and 322.3 of the CCRF, should be recognized as one, and in which – as complex of the relevant crimes.

Also very important and lacking in practice is the Interpretation of the Plenum of the SCRF on the issue of determining the timing of the end of such crimes, primarily those provided for in articles 322.2 and 322.3 of the CCRF. Regarding this issue, the judges drew attention to the problem that in practice, when determining the moment of the end of these crimes, it is customary to proceed from the fact of a fictitious registration (recording) take place, but it may be difficult to prove the person's lack of intention to stay (live) in a living premise. Particularly the lack of proof of the fact that the person registering (recording) someone at the place of residence (the place of stay) was aware of the fictitiousness of this legal fact, in practice can serve as the basis for the termination of the criminal case or the acquittal of this person.

With reference to articles 322.2 and 322.3 of the CCRF, we also point out the problem of exempting the perpetrators of criminal acts from criminal liability, taking into account the special conditions provided for in the notes to these criminal

law norms, or more precisely, such an obligatory condition as facilitating the disclosure of a committed crime, which practice is extensively interpreted.

Facilitation of disclosure assumes that certain circumstances of a committed crime become known to law enforcement agencies through the efforts of that person. At the same time, courts recognize not only a turnout or truthful explanation given by a person in the course of an inspection under Art. 144 of the Code of Criminal Procedure RF as such assistance, but also consent to inspect the home in the absence of a judicial decision, consistent and truthful testimony during the investigation; a petition for an inquiry into the shortened form and / or the consideration of the case in a special order, that is, in most cases circumstances that cannot be regarded as facilitating the disclosure of a crime are taken into account.

In order to eliminate the highlighted problem, it seems advisable to abandon such notes, since the acts which are provided for in articles 322.2 and 322.3 of the CCRF in cases on which exemption from criminal liability on general grounds is possible, for example, due to active repentance (Art. 75 of the CCRF), one of the manifestations of which can be recognized the assistance not only in the disclosure, but also in the investigation of the crime fall into the category of minor crimes. Our proposal was supported by 62.22% of the surveyed judges, 76.54% of the employees of internal affairs agencies and 84% of the scientific and pedagogical employees.

In conclusion, we would like to notice that in the decisions of January 26, 2017 № 29-O and of September 27, 2017, № 2175-O, passed on complaints against Art. 322.3 of the CCRF as an insufficiently defined criminal-legal prohibition with unnecessarily strict sanction, the Constitutional Court of the RF, in particular, indicated that the disputed norm valid in the system of legal regulation does not contain uncertainty, and the resolution of the question of the scope of sanctions for the Articles of the Special Part of the CCRF is the prerogative of the federal legislator, who must take into account the need to ensure the proportionality of criminal penalties for the committed act and the balance of the individual's fundamental rights and the general interest in protecting the person, society and the state against crimes. At the same time, the very fact of such complaints together with the identified problems indicates the need to improve the legal regulation of legal liability for various violations of migration legislation.

## CONCLUSION

Certainly, relations related to migration processes and ensuring proper order for the implementation of migration recording need criminal law protection, but this should be provided and implemented only with respect to those acts that have a public danger and on the basis of such provisions of the Special Part of the CCRF which exclude ambiguity and uncertainty in the regulation of the elements of the body of these crimes, as well as the conditions for the release from criminal liability of persons who committed the latter. The specifics of the body of crimes envisaged in articles 322.1, 322.2 and 322.3 of the CCRF and modern problems of regulating and realizing of responsibility for such crimes are considered in this paper. Currently, articles 322.1, 322.2 and 322.3 of the CCRF do not fully meet the requirements of systemic and legal certainty, they need to be improved, as well as implemented by the Plenum of the SCRF on the problematic issues of their application. We have identified these issues in the present paper, as well as areas

for improving these criminal law norms, including the introduction of new constitutional and qualifying features in the body of relevant crimes. We believe that these proposals, when implemented, will help to eliminate the identified problems.

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# ADOPTION, CONDITIONS AND PROCEDURE OF ESTABLISHING THE ADOPTION

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## ABSTRACT

This paper will focus on the subjects of adoption based on different perspectives, such as legal, doctrinal and judicial point of view. The legal institute of adoption is an important institute, especially under the current circumstances of development of the country. The institute has been in use in various forms since very ancient times. The author by using a combined methodology with the following methods: method of legal analysis, method of comparison analysis, method of teleological analysis, method of systemic analysis, etc., will analyze this very important institute, which is considered as one of the most important issues in the social sciences. The use of these methods explains the importance of the adoption related to the family law and other effects when it is created. Paper will have conclusions which are expected to contribute to further academic discussions and for the practical use by courts and other institutions.

**Keywords:** Adoption, family Law, adoptee, adopter

## INTRODUCTION

The history of adoption reveals changes within our societies? [1]. One of the most popular theories claims that the adoption is a legal act through which the establishment of the relationship of adoption that is made upon parents and adopted children [2] is the same as the one build between natural parents and children [3]. The adoptee becomes the child of adoptive parent and the adoptive parents become parents of the adopted child [4]. According to this definition, adoption is a legal act - a solemn contract, and the relationship created by this contract is a relationship of adoption or a family by adoption. Adoption can be considered as a legal act, as well, which enables parental right, as the definition says "The act of transferring parental rights and duties to someone other than the adopted person's biological parents [5]. The Kosovo Family Law [6] (hereinafter KFL) under Article 167 foresees that adoption occurred between adopted parents and adopted child establishes the same rights and obligations that already exist between natural parents and their children. According to these definitions, it follows that adoption is a legal institute because it is regulated by legal norms. It is a legal act because it is established before the state body institution. The purpose of the adoption is to ensure whether the child is deprived from the family environment or not, the possibility of being placed permanently in an adoptive family [7]. According to the KFL Article 160, par 1, it is foreseen that the purpose of mediation of adoption is to place the child (adoptee) under the custody of the person who wants to take the child under his care and responsibility. This definition of mediation regarding the institution of adoption is also in line with the United Nations Convention on the Rights of the Child, based on the principle of the best interest of the child promoting this convention. "All measures taken for children, whether taken by public or private institutions, social

care institutions, courts, administration authorities or by legislative bodies, the best interests of the child should be the overriding goal” [8]. Children without parental care, are considered to be the ones whose parents are not alive, whose parents are unknown or have disappeared, while children without parental care consider to be as well as children whose parents for whatever reason temporarily or permanently do not perform their parental duties or parental care (article 156, par 1&2 of KFL). KFL recognizes only the full adoption that implies that the child is completely adopted by adoptive parents and divorces parental relationships with the biological parents [9]. In ancient rights, adoption was not intended to protect the interests of children. As an institution, moreover, it was developed to protect the inheritance, family and family-friendly adoptions of children. In Roman law adoption was the act of gaining paternal power over a child in a difficult economic situation, that adoption by a family that had no children to ensure continuity. Pater's family with free will by adoption, adopted a minor without the status of cives raonai, for his own children [10]. We can conclude that the adoption establishes a permanent, legal parent-child relationship between the child and a person who is not the natural parent of the child [11].

## **PRINCIPLES OF ADOPTION**

The adoption is based on some basic principles which must be respected in the case of establishing the adoption relationship, which relate to both the procedure and the conditions that must be met. The basic principle in any case should be the best interest of the minor but implying that this best interest of the minor can be realized in an adoption relationship under which it is expected that between the adoptive parent and the child the relationship will be established Parent child. One of the conditions is that adoption is only allowed for children who do not have parental care or parental care is not the one that requires the child's interest in upbringing and education. In no case can the establishment of the adoption relationship be allowed unless the child's purpose is achieved despite the fact that the child may be without parental care. In cases where the child is without parental care but there is a request for establishing the adoption relationship, the court will not allow adoption unless it is ensured that adoption will serve the child's well-being. In Kosovo there are already organized forms of care for children without parental care. The "SOS Village" is known for children without parental care and other forms that are organized by institutions for placement of children in families who care for children without parental care versus regular payments made by domestic institutions for these families.

## **CONDITIONS FOR ESTABLISHING ADOPTION**

Adoption trend have changed over the years [12]. There must be an indispensable reason for the adoption of adoptee, which refers to the best interest of the child, for which the interest should always be taken care of by the court. The assessment of the best interest of the child is a very complex issue which requires professional preparation, good knowledge of social and family issues and genuine cooperation with the Custodian Body. KFL with Article 128 par. 4 defines parental responsibility, which includes the rights and duties that are intended to ensure the child's emotional, social and material well-being by taking care of it, by maintaining personal relationships with it, ensuring the wellbeing, education, legal

representation and asset management, for which things parents should consider the abilities, tendencies and desires of their children. The interest of the child is a fundamental element in the parental right, namely the relationship of the children, which must be protected by the parents, but also by the court which conducts the court procedure for the establishment of adoption, and ex officio. For the court and the Custodian Body it is much easier to estimate the best interest of the child in the adoption procedure when the parents are not known, the parents have died or the parents have disappeared because the condition of the child is necessarily predetermined the need for adoption and remains the court to evaluate the other conditions that refer mainly to the adopters, while it is very problematic to assess the best interest of the child when the parents of the child are known. To be adopted a person must meet these conditions: a) be born alive, b) be a minor child [12], c) not be in the bloodstream with the adoptive parent [13]. KFL has determined that there can be no adoption of the child after the death of the child, only a minor child can be adopted (article 189, 174 of KFL). With this provision it is stipulated that only the juvenile child who is in life can be adopted and how a minor is taken as a person who is not 18 years old. This situation is not regulated solely in the KFL but is also covered by Article 1 of the Convention on the Rights of the Child, which states that: "By this Convention, the word child means any person under the age of 18, unless the age Majority is achieved in advance in accordance with the legislation to which it is subject" [8].

Exceptionally by this rule, a child who, before reaching adulthood with emancipation, has acquired the ability to act is not allowed adoption. Here is no dilemma at full emancipation when the court in a non-contentious procedure by a ruling allows the marriage of a person over 16 years. Regarding the condition of the bloodstream, a person in a straight line, not a brother and a sister can be adopted (article 177 par 1 of KFL). In this case, the KFL has ruled out the possibility of being adopted on a straight line at any scale and hence indirectly to the second degree that refers to the adoption between brothers and sisters. KFL has also introduced a deterrent condition for the establishment of adoption, stating that the guardian cannot adopt his or her care until the competent body dismisses him from the duty of the guardian (article 177, par 2 of KFL). The reason why KFL has ruled out the possibility of adoption at any right-hand scale and in the second instance indirectly refers to the obligation stipulated by the KFL, to keep relatives in need when in need at all levels and in a straight line to the second degree.

## **CONDITIONS REGARDING THE ADOPTER**

The adoptive person must meet the following legal conditions: 1) the adoptive person must have the capacity to act; 2) have the personal qualities necessary for the successful exercise of the parental rights and obligations and be capable of well-being and education of children, 3) not suffer from any contagious disease that would endanger the health of the child, and 4) have reached the age of 21. While spouses are planning to adopt children, one of the spouses must have reached the age of 25, while the other spouse has reached the age of 21 [14]. According to the KFL, it is allowed the possibility of adopting an unmarried person as well, and if they are married only then jointly by both spouses. The court has an obligation to investigate the personality of the adoptive person in a comprehensive manner and despite the investigations made by the guardianship body in order to protect the

interests of the child. In the present case, the court is authorized by law (Article 178 KFL) to produce evidence if there are indications that the application for adoption is intended to misuse the adoption institution, eg. Realizing the material benefit, gaining the workforce, etc. KFL did not foresee any other criterion, which should be the age difference between the adopted child and the adoptive parent as a minimum and maximum criterion, which the court remains to evaluate this circumstance. Viewed from this aspect should be limited so that adoption of juveniles should be allowed to spouses affiliated to marriage for at least three years, with an age of not less than 18 years and no more than 40 years in relation to the adoptee would have to pay particular attention to whether the adopted child is a twin, in this case either to stop adopting or to adopt the twins completely but in no case allow their separation because it would conflict with the purpose of adopting and the adoption of that adopted.

### **CONSENT FOR ADOPTION**

It is not possible for an adoption to occur without court order [1]. The court in the adoption procedure will also hear the juvenile child who has reached the age of 14, so that the child can be given the opportunity of his free declaration of adoption. The child shall be notified of the consequences of the adoption, the rights and the duties deriving from the adoption. Consent for disabled children or younger than 14 years may be granted only by his / her legal representative respectively the guardian of the adopted. Hearing of a child on the occasion of giving consent by the court will take place in the presence of the social worker [6]. When listening to a child, the court must use cautious communication methods with the child, thinking about creating and maintaining an appropriate atmospheric hearing during a child's hearing as it is an essential element of the interrogation process. KFL has also defined the situation of replacing the consent of a parent in order to protect the interests of the child and that: 1) when the consent of one of the parents is replaced by the guardian's body at the request of the child, if the parent greatly disrupts the duties, 2) by the court's decision, when the child can no longer be trusted by the parents, 3) when the child is abandoned by one of the parents for more than six months, and 4) if you are not granted parental rights or you have not been deprived of the ability to act while your parent is unable to provide the necessary care for wellbeing due to psychological illness or psychological disability, while the child cannot without adopting to grow in the family (Article 171 of the KFL).

### **PROCEDURE FOR ESTABLISHING THE ADOPTION**

Elaborate procedure has been created to protect the interest of child, the natural parents, and the adoptive parents [11]. The adoption services must cover two primary functions: 1) making and participating in arrangement for the adoption of children and 2) making and participating in arrangement for the provision of adoption support services [15]. According to the KFL, the adoption procedure is a non-contentious litigation procedure. Determining the jurisdiction of the court to establish adoption is in line with the Convention on the Rights of the Child. In terms of territorial competence, "Adoption is established before the court by place of residence where applicants have had the last joint residence and before the court according to the habitual residence of the adopted" (Article 181, par 1). Also, with the provision of Article 181.2 of the KFL it is stipulated that hearings are closed to

the public, as this protects the rights of the child. The exclusion of the public is also covered by Article 10.2 of the Law on Personal and Family Affairs, with the exception of non-contentious procedure in cases when the person is declared dead.

## THE ADOPTION ACT

After the court has the appropriate assessments, after having heard the adoptive parents, the biological parents if possible, the child will be granted the decision for the probationary period of adoption, if conditions are met. The probationary period of adoption is the period before the court decides on the establishment of adoption, which period will be supervised by the guardianship body, to prove the appropriateness and evaluate the circumstances that with the establishment of adoption can the purpose of adoption be achieved [16]. This is a period in which potential adoptive parents and adopted children live together, under the supervision of the guardianship authority. This period is scheduled to last for three months with the possibility that it by a court ruling to be extended for another three months if circumstances warrant the circumstances depending on the case (Article 166 par. 1 of KFL). This period is monitored by the Guardianship Authority or by experts such as psychologists.

## CONCLUSIONS

Based on the complete study analysis of this work, I conclude that adoption is a legal act through which the adoption relationship between adoptive parents and adoptive child is established, which relationships are similar to the relationship between natural parents and children and KFL accepts only the full adoption. In formal terms, the KFL contains strict rules referring to the competence to establish the relationship of adoption, the procedure for establishing the adoption relationship, the conditions to be met when the adoption relationship is established and that of the adopted parent and the adopted child, the interaction of the court, especially with the Custodian Body and other mechanisms. In some courts, respectively branches of basic courts that have substantive and territorial competence to decide on adoption, are still reluctant to develop the adoption procedure. This has affected in some cases the requests are not processed at all and consequently the children have reached the age of majority without having to develop the adoption procedure. In some other courts, there is a lack of professionally qualified capacities to develop the adoption procedure and in few courts, there is a progress in building professional capacities to address the issue of adoption in the right manner and form. The greatest failure of the Custodian Body is the failure to monitor the probationary period in the proper form and manner. There are cases when monitoring reports have been provided to the courts in an unprofessional manner and in some cases affected by the interests of the parties in the proceedings as not always the requests for adoption in our courts are aimed at protecting the child without parental care. It is recommended for courts to have profiled judges who will deal exclusively with family issues, including the procedure for establishing the adoption relationship. Also Centers for Social Work should have professional staff in various fields such as psychologists, psychiatrists, pedagogues and sociologists so that they can offer the court a professional report that will contain objective data based on Scientific methods.

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# CRIMINAL ASPECTS OF TERRORISM AND CORRUPTION NOT ONLY FROM HISTORICAL POINT OF VIEW IN SLOVAKIA

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## ABSTRACT

In the east and central Europe exist a one serious problem - fight against corruption. Corruption is spread in all parts of the society. It causes that almost all citizens of these regions have already had experiences with concrete and not official but essential payments in diverse fields.

Nowadays has been arised new challenge for national legislation - fight against terrorism. Terrorism has taken on new importance for most people since the attacks on the World Trade Center in New York and the Pentagon in the suburbs of Washington, D.C., on 11 September 2001. In three daring attacks using airliners (as well as a fourth that failed when passengers forced the plane to crash land), terrorists took ten times more lives than they had in any previous incident in the U.S. and did so in a manner so audacious that it shocked virtually everyone around the world.

*Keywords: corruption, terrorism, criminal liability of legal persons and governments entities, penalties, some historical perspective on the elements of the crime, traditional justice against corruption and terrorism, transnational crime, law and order, terrorist attack, legislation.*

## INTRODUCTION [1]

The January 2015 terrorist attacks in the headquarters of the satirical magazine Charlie Hebdo and in a kosher supermarket in Paris, in which the gunmen killed 17 victims in total, and the March attack in the Bardo museum in Tunisia, with the death toll at 21 and dozens wounded, including many foreign tourists, together with the many like killings and other terrorists' attacks in Europe and elsewhere have revived the interest in means of legal protection against terrorism. It appears that the phenomenon of terrorism is not limited by the boundaries of national states, nor by time and means. It crosses borders and gains transnational dimensions. Hence the term "international" or "transnational terrorism". It appears that international terrorism is an example of transnational crime in our times; it is a global problem and a threat to humanity. It presents one of the most serious attacks on democracy and the rule of law, the values shared by all members of the European Union.

Corruption can occur on different scales. There is corruption that occurs as small favours between a small number of people (petty corruption), corruption that affects the government on a large scale (grand corruption), and corruption that is so prevalent that it is part of the every day structure of society, including corruption as one of the symptoms of organized crime (systemic corruption).

Petty corruption occurs at a smaller scale and within established social frameworks and governing norms. Examples include the exchange of small improper gifts or use of personal connections to obtain favors. This form of corruption is particularly common in developing countries and where public servants are significantly underpaid.

Grand corruption is defined as corruption occurring at the highest levels of government in a way that requires significant subversion of the political, legal and economic systems. Such corruption is commonly found in countries with authoritarian or dictatorial governments but also in those without adequate policing of corruption.

Systemic corruption (or endemic corruption) is corruption which is primarily due to the weaknesses of an organization or process. It can be contrasted with individual officials or agents who act corruptly within the system.

Factors which encourage systemic corruption include conflicting incentives, discretionary powers; monopolistic powers; lack of transparency; low pay; and a culture of impunity. Specific acts of corruption include "bribery, extortion, and embezzlement" in a system where "corruption becomes the rule rather than the exception.". Scholars distinguish between centralized and decentralized systemic corruption, depending on which level of state or government corruption takes place; in countries such as the Post-Soviet states both types occur“ [2].

### **I. Legal regulation of terrorism in the territory of the Slovak Republic**

The fact that there has not been an incident of terrorism in the Slovak Republic, either from within or from abroad, so far, does not relieve the country from the responsibility to combat it. The Slovak Republic bears responsibility both, towards its own citizens, to whom it guarantees security within the country, and towards other countries, to which it guarantees that neither its territory nor its inhabitants would be misused for a terrorist cause, or, even more seriously, would break the law by actively supporting terrorist causes.

The state must possess effective legal tools for combating terrorism in both, substantive criminal law (criminalization of terrorist acts and their punishment, crime prevention) and procedural criminal law (means enabling detection, investigation and proof of terrorist acts in criminal proceedings) The legal tools must be understood as only a part of the whole counter-terrorist legislation.

Slovak criminal legislation does not provide a definition of terrorism, yet the Criminal Code (Act № 300/2005 Coll.) recognizes two key offences for the punishment of terrorist acts – „terrorism and some forms of participation on terrorism” [3] (Section 419) and „terror” [4] (Section 313).

Although the term itself is questionable, or, rather, more difficult to delineate, it is nevertheless absolutely necessary to define it in the law in order to comply with the maxim nullum crimen sine lege as a basis for criminal responsibility. The exact definition is also required from the international, as well as European perspective, in support of international cooperation in combating terrorism.

The Slovak legislation (Section 129 Subsection 5 of the Slovak Criminal Code) contain a definition of terrorist group. The mentioned provision of the Slovak

Criminal Code defines terrorist group as a structured group of at least three people that exists in certain period of time for the purpose of committing an offence of terror or an offence of terrorism (Section 129 Subsection 5 of the Slovak Criminal Code).

This definition in the Slovak Criminal Code wholly corresponds with the definition of terrorist group in the Council Framework Decision 2002/475 on Combating Terrorism, which defines “terrorist group” as “a structured group of more than two persons, established over a period of time and acting in concert to commit terrorist offences.” “Structured group” shall mean a group that is not randomly formed for the immediate commission an offence and that does not need to have formally defined roles for its members, continuity of its membership or a developed structure (Article 2 Section 1 of the Decision).

### **1.1 Suggestion de lege ferenda for some amendments**

The Section 297 of the Slovak Criminal Code also defines the criminal offence Establishment, formation and support of a terrorist group (Czech Criminal law doesn't contain this offence) which also criminalize membership in, participation in or providing support to such groups. Some reports criticized that criminalization of training for terrorism because “it is unclear whether national law criminalises the provision of training in cases in which no terrorist offence has been committed or attempted” [5].

It is important to note in this context that the Slovak Criminal Code also contains definitions of “terrorist group” (Section 129 Subsection 5), “activity for terrorist group” (Section 129 Subsection 6) and “supporting terrorist group” (Section 129 Subsection 7). Hence participation in a terrorist offence is not criminalized on the basis on general provisions covering various forms of participation, but as a specific mode of the offence of terrorism and some other forms of participation in terrorism in Section 419 Subsection 2 of the Slovak Criminal Code.

## **II. Introduction to the problematic of corruption in Slovakia**

In Slovakia until the adoption of the single Criminal Code no. 86/1950 Coll. applied the Criminal Code on felonies and misdemeanours (Act. no. XXXIII/1896). It differentiated corruption in the form of active and passive bribery. These subject matters were defined in §§ 465 to 470. Offense of accepting a bribe could be committed by a public official. The Penal Code also defined specific people (entities) accepted a bribe, both with regard to their position in society they were punished by heavier penalties. Such entities were:

- Judges (in connection with accepting a bribe in a criminal or civil case decided illegally);
- Investigating magistrates;
- The officers conducting the auction ( in connection with the adoption of a bribe acted illegally and their actions have caused damage in excess of five thousand gold coins).

Bribery was an offense committed by the person who gave a gift or a promise of such rewards. If a person gave a bribe to judge, to investigating magistrate or to a member of jury he was punished by higher criminal rate (up to five years and a fine up to two thousand gold coins).

## **2.1 Corruption legislation after 1961 to the current period.**

In January 1/1962 came into force Criminal Code – Act no.140/1961 Coll. From the present point of view we can evaluate the original legislation as a step forward because the legislature was trying minimize strong ideological philosophy (also due to changes in society) but it still was a socialist Criminal Code (for instance in terms of the arrangement of the various heads of the Special Part of the Criminal Code). Corruption offenses were incorporated into 3.Title of the Criminal Code under name „bribery“.

The law distinguishes three forms of the following offenses :

- Passive bribery (§ 160),
- Active bribery (§ 161),
- Indirect corruption (§ 162).

Definitions of various forms of these crimes law were derived from the previous Criminal Code but the type and level of penalties were slightly changed.

Offenses of accepting a bribe or active bribery were possible to commit only in connection with the things of general interest. This concept was further refined by the law and judicial decisions. In the seventies and eighties of the last century the legal practice recognized the seriousness of these offenses. For example problems were seen in incomplete explanations and circumstances warranting the determination of the nature and amount of the damage caused by the criminal acts of bribery.

Important change was the pass of Act no. 102/1995 Coll, which canceled the elements of the crime of active bribery (§ 161 of the Criminal Code) and the provision of effective regret. The government justified its proposal, inter alia, by deleting the aforementioned subject matter will increase the detection subject matter of passive bribe. At the time of the adoption this law a lot of voices of both professional as well as the general public that did not agree with the view to delete the above mentioned provision of the Criminal Code. Legislator finally agreed with the opinion of government and § 161 and § 163 of the Criminal Code was canceled. The detection of corruption offenses began to stagnate and decline.

In January 28/1999 came into force law no.10/1999 Coll. This law again introduced elements of the crime of active bribery and provision of effective regret. The third section of the Criminal Code was renamed from bribery to the corruption. This was based on the theoretical - methodological point of view that the concept of corruption is wider than bribery.

The amendment further tried to capture all the requirements of international conventions and instruments, including the OECD, the Council of Europe and the

EU, which are binding in Slovak republic. Subject matter were expanded forms of action: give, promise to accept a bribe and vice versa, ask a promise to give a bribe all directly or through an intermediary. The new provision was § 160b, § 161b to criminalize bribery of foreign public officials in international trade and § 160c, § 161c to criminalize bribery of foreign parliamentarians, judges and officials of international, multinational governmental organizations. In these cases, it is sufficient that bribery occurs in the exercise of their functions, although not violated its obligations.

OECD Working Group for combating corruption (CIME) recommended modify the subject matter in Criminal Code so that corruption in the Criminal Code will be rated as "more serious" offense. The new Criminal Code (Act no. 300/2005 Coll. as amended, hereinafter „CC“ ) was achieved this aim.

Criminal Procedure also allows that the agent (§117) could "provoke" (initiative to guide public officials/foreign public officials to commit corruption offenses, if it can be reasonably assumed that the offender would commit such an offense).

Thus we can see that the Criminal Code has been done a big changes regarding punishing corruption in a historical context.

## **2.2 Corruption during the elections**

As it was already mentioned the offense of electoral corruption was introduced into the Criminal Code with Act no. 262/2011 (§336a of the CC) Coll. The electoral corruption is defined as be giving, offering or promising a bribe for the voter which will vote a certain way. Exist a fine line between what is and what is not a bribe. Offering souvenirs such as pens or reflective tape with the logo of a political party is not considered as the electoral corruption. Corruption during the elections is therefore only such offering or provision of a variety of gifts, food or any other benefits, which involve a requirement of certain conduct during elections. The form in which such a requirement should be expressed is not statutory. Such a requirement can thus be expressed in words, leaflets , promotional materials, billboards, signs, posters etc. The electoral corruption is also in direct conflict with the principle of secret ballot.

## **2.3 “Match-fixing”**

So far in Slovakia “match-fixing” (the manipulation of results of sports competitions) has been deemed a form of corrupt behaviour, namely accepting of bribe, provided for in Section 329 CC (1), which reads:

- “A person who, in connection with the procurement of a matter of general interest, accepts, requests or causes any other person to promise a bribe for himself or for any other person, directly or through an agent, shall be punished with a term of imprisonment from three years to eight years”,
- as well as the provision of Section 333 CC whose Paragraph 1 reads: “A person who, in connection with the procurement of a matter of general interest, gives, offers or promises a bribe to any other person, or for that reason gives, offers or promises a bribe to any other person, directly or through an agent, shall be punished with a term of imprisonment from six months to three years.”

Once again has the more extensive judicature in the Czech Republic shown us in Slovakia that for instance, football is considered a “matter of general interest”. Of course, football with its history, background and popularity enjoys such a “status”, however, this needn’t hold for all sports. According to the explanatory memorandum on the new statutory instrument, such a vague perception of sport as a subject of general interest would make the investigation into respective criminal activity in terms of any other sport more difficult (or even impossible), which is practically a correct conclusion. Anyway, as regards the activity of prosecution authorities or, as the case may be, investigation, a large amount of other matters/circumstances making the investigation significantly complicated occurs... Also for the reason mentioned the definition of corruption in the area of sports has been specified.

It remains to be said that, in terms of Europe, Slovakia is in the forefront as far as the strictness of the lengths of punishment is concerned, and we haven’t been different even in this case. Corruption in sport is linked with substantially stricter, direct or indirect, sanctions for commission (contrary to “ordinary corruption”). It’s the fact that the amendment results in the unification of the range of punishments for giving or accepting bribes in connection with the manipulation of results of sports competitions that may be considered intriguing and reasonable. The reason for such a statutory instrument is the specificity of sports environment and particularly the impossibility of measuring the amount of damage caused by criminal activity. This fact draws attention mainly to the commission of criminal activity by persons directly involved in sports events, namely sports officials, as well as to the aspects of organized criminal activity, which occur very often in practice.

As a rule, an athlete is not the person initiating unlawful action in manipulating a sports competition (match). In the majority of cases, he or she is the addressee of the offer. The person initiating unlawful action usually manipulates more than just one match.

The authors of the definition of the new crime noticed that the outcome of established legal assessment under the provision of Sections 329 and 333 CC was a paradox according to which the person initiating the manipulation (briber) could be punished with a term of imprisonment from six months to three years, i.e. basic range of punishment. On the other hand, the athlete as bribe recipient could be punished, pursuant to basic range of punishment, with a term of imprisonment from three years to eight years. That’s why the proposed wording tried to cope with this paradox by introducing basic range of punishment from one year to five years for both of the parties, i.e. briber as well as bribe recipient.

We will see how corruption in sport will or, as the case may be, will not be spreading in Slovakia after the adoption of the new crime.

## **CONCLUSION**

Terrorist attacks, which occurred in January 2015 in Paris, as well as other terrorist activities in Europe and elsewhere have revived the interest in means of legal protection against terrorism. It appears that international terrorism is an example of transnational crime in our times; it is a global problem and a threat to

humanity. It presents one of the most serious attacks on democracy and the rule of law, the values shared by all members of the European Union.

Corruption offenses (in Slovakia) are placed in the eighth head of the Special Part of the Criminal Code - Offences against public order matters. In corruption cases but also in other cases, for example environmental damage shows that it is necessary to have criminal liability not only for the individual workers (statutory bodies) but also for the organization. We also need a lot of alternative punishments for instance prohibition of certain activities. We may say that the long-term pressure exerted by the OECD Working Party is the primary cause for adoption of the new act on criminal liability of legal entities in Slovakia, and it is probable that without the pressure by OECD the act on criminal liability of legal entities wouldn't have been adopted in Slovakia at all.

In corruption activities which affect the public officials as beneficial in the world seems the test of integrity, which is practically used in U.S, UK and consists of lifelong control of assets (the asset increase over time) among the relevant employees and their related parties.

The introduction of offense of the electoral bribery in the Criminal Code is a step in the right direction because it ensures the freedom of elections and equality of individual candidates in elections. Difficulties during the proving before the court we can see in particular difficulties in filling of the characters of the subject matter. In my view we can not apply the provisions of § 336a/1 letters a) to d ) on the conduct "of who has the right to vote ...". It is important interpreted this article along the lines intention of the offender (as an intentional offense) - to achieve the desired behavior selector (which according to § 336a/1 is protected).

In terms of penalties and their species it is important to realize that the penalties for corrupt behavior could not be too low because then the police and the bodies active in criminal procedure thinks that corruption is not serious crime. On the other side very strict penalties are not acceptable due to their refusal by society.

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[3] The facts of the offense are as follows:

(1) Who

a) with an intent to seriously intimidate inhabitants, seriously destabilize or defeat constitutional, political, economical or social establishment of the state or a structure of an international organisation, or to coerce a government of the state or an international organisation to act or to omit to act, threats by commitment or commit an offence endangering the life, health of people, their personal freedom or a property, or illegally produces, gets, owns, possesses, transports, delivers or in another way uses explosives, nuclear, biological or chemical weapons, or performs

not permitted research and development of such weapons or weapons prohibited by law or by an international treaty,

b) with the intent to cause death or serious bodily harm or considerable damage on property or environment possesses radioactive material, or has or creates nuclear explosive machine or a machine diffusing radioactive material or emanating radiance, which may due to its radiological features cause death, serious bodily harm or serious damage on property or environment, or

c) with the intent to cause death or serious bodily harm or considerable damage on property or environment, or to coerce natural person or legal person, international organisation or state to act or omit to act, uses radioactive material or nuclear explosive system or a system diffusing radioactive material or emanating radiance which may cause death due to its radiological features, or serious bodily harm or considerable damage on property or on environment, or uses or damages a nuclear reactor including reactors installed on floats, vehicles, planes or cosmic objects, used as an energy source for driving such floats, vehicles, planes or cosmic objects, or for other purposes, or premises or traffic system used for production, storage, processing or transport of radioactive material in a manner which releases or may release radioactive material, or threats by such act in circumstances indicating credibility of the threat, or

d) asks for radioactive material, nuclear explosive system or system diffusing radioactive material or emanating radiance which may due to its radiological features cause death, serious bodily harm or considerable damage on property or environment, or a nuclear reactor including reactors installed on floats, vehicles, planes or cosmic objects used as an energy source for driving such floats, vehicles, planes or cosmic objects or for other purposes, or premises or traffic system used for production, storage, processing or transport of radioactive material, with threats in circumstances indicating credibility of the threats or use of power, shall be imposed an imprisonment sentence for 20 to 25 years or life imprisonment.

(2)The same sanction as in the paragraph 1 shall be imposed to the person who

a) collects or provides financial or other means, personally or through another person, even partially, for the purposes of their use or allowing their use for commitment of the act listed in paragraph 1,

b) provides knowledge of methods or techniques for production and using of explosives, nuclear, biological or chemical weapons or other similarly maleficent or dangerous stuffs for the purposes of commitment of the act listed in paragraph 1 or attempts for such act or participates on such act,

c) publicly incites to commit the act listed in paragraph 1 in a manner defending or exonerate commitment of such act in case of its commitment, and herewith causes a danger of its commitment or participates in it,

d) asks another person to commit or participate in committing the act listed in paragraph 1 or attempts to ask or participate in the attempt, or

e) plans to commit the act listed in the paragraph 1 with the intent to commit or enable its commitment.

(3)The life imprisonment shall be imposed on the offender if s/he commits the act listed in the paragraph 1

a) and gives rise a serious bodily harm to more persons or death of more persons,

b) on a protected person,

c) towards armed forces or armed corps,

- d) as a member of a dangerous grouping, or
- e) during a crisis situation.

(4)The life imprisonment shall be imposed to the offender if s/he commits the act listed in the paragraph 2 letter a) and herewith facilitates using the financial or other sources collected or provided by him, for committing the attempt of the offence listed in the paragraph 1, or s/he personally uses them in such manner, or commits the act listed in the paragraph 2 letter d) and herewith allows commitment or attempt of the act listed in the paragraph 1.

[4] Any person who, with the intention of harming the constitutional system of the Slovak Republic, intentionally kills or makes an attempt at killing another person shall be liable to a term of imprisonment of twenty to twenty-five years or to life imprisonment.

[5] Report from the Commission to the European Parliament and the Council on the implementation of Council Framework Decision 2008/919/JHA amending Framework Decision 2002/475/JHA on Combating Terrorism [Electronic resource].

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# CRYPTOLIABILITY

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## **ABSTRACT**

Funds are the core of the financial system of any modern state. Initially, the money comes from private funds; however, development of the economy and other factors at the time led to the abandonment of private money and the establishment of a unified monetary system in most countries. Despite this, the development of Internet technologies and trading techniques in real time has led to the revival of the idea of private money.

In accordance with official forecasts of the development of the domestic economy (development Concept and security Strategy), the imbalance in world trade and capital movements will continue and may increase in the coming years, which will contribute to changes in the exchange rates of world currencies.

The topic is crucial today, because no one in the whole world want to consider the question of liability in the cryptosphere. Thus, the draft Federal law "On amendments to the Federal law "On the development of small and medium-sized businesses in the Russian Federation" and the draft Federal Law "On amendments to the Federal Law "On digital financial assets" provides for the formation of special platforms (crypto exchange, operators, etc.). However, they do not regulate the liability of professional participants of the emerging new crypto market.

This paper is prepared on the basis of a legal and technical analysis of legal norms, as well as comparative legal and formal-logical methods; i.e., the method of systemic analysis. The goal of this paper is to consider this problem and to suggest possible solutions, including in the field of criminal, tax and budget legislation.

***Keywords:*** *cryptocurrency, cryptosphere, liability, cryptocurrency exchange market, cryptorisks.*

## **INTRODUCTION**

Currently, both professional and non-professional market participants are increasingly discussing various aspects of the use of cryptocurrency in a particular country [12]. There are draft laws on regulation in the cryptosphere, organised lectures, and conferences. Meanwhile, in pursuit of "new thrills," we've forgotten about the flip side of the coin. It is necessary to understand clearly who will be responsible for illegal activity in the area under consideration.

The unregularised status of cryptocurrencies; the lack of a uniform international practice [5] and judicial protection of the issue being analysed; the instability of pricing in the cryptosphere; and so on. – Collectively, this comprises the core facts that today constitutes a threat to national security [5].

## DISCUSSION

Russian judicial practice on this highlighted issue is based on the fact that until the due legal settlement of all key issues in the cryptosphere is achieved, neither individual persons nor legal entities will be able to find protection in the face of governmental enforcement authorities.

The lack of clarity among approaches in law enforcement practice prevails among foreign jurisdictions. So, according to one court US decision, bitcoin is recognised as legal tender (<http://cdn.arsTechnica.net/wp-content/uploads/2016/09/murgio-order.pdf>). Relying on the principle that, in the absence of regulation a contractual term is to be understood in its literal sense, one US court concluded that bitcoin is a form of money, since it acts as a universal monetary equivalent and is used to acquire things. In another decision, bitcoin was not recognised as money (<https://forklog.com/sudya-iz-majami-otkazalas-priznat-bitkoin-dengami/>).

This latter decision contradicts other judicial acts of 2013 and 2014 on similar issues (<https://forklog.com/sudya-iz-majami-otkazalas-priznat-bitkoin-dengami/>). Moreover, in the US, the Federal tax service's interpretation is that cryptocurrency is property, whereas FinCEN's interpretation is to recognise cryptocurrency as a form of currency [8].

It seems that one should not impose full responsibility for the commission of various divergent actions in the cryptosphere on the user – an ordinary citizen who, in the current world economic situation, sees in virtual currency the sole real opportunity for garnering income without using banking services that would be, in his opinion, unnecessary.

Although, in comparison with 'fiat' money, cryptocurrency is used for criminal purposes less often [7], nevertheless, according to Positive Technologies (<https://www.kommersant.ru/doc/3566894>), fraudsters stole USD300 million through ICO's in 2017. At the same time, in the vast majority of cases, the attackers sought to gain control of the platform itself in order to replace the address of the organizers' cryptocoin cache with their own [13]. Another example is development by the cyber criminals of miners' programs [3], which deliberately blocks other miners' programs that were installed on that computer [2].

However, more "classical" (*mala in se*) crimes are also committed in the cryptosphere [14]. For instance, very commonly encountered of late is a scheme whereby a seller of cryptocurrency meets with a buyer in a restaurant to exchange digital for fiat money. The buyer shows the seller the money and the seller transfers the cryptocurrency. But at this point, powerful people show up who claim that the seller did not receive any money, because the buyer must first come to terms with them.

The above-indicated situation emphasizes the urgency of introducing liability (including even criminal) in the cryptosphere. In one manner or another, those market participants who decide on an ICO (financing recipients) seek to raise money through special websites or crypto-exchanges. It would seem that establishing the responsibility of such a platform (exchange) for information provided thereon to market participants as well as the responsibility of financing

recipients would significantly reduce the number of potential fraudulent actions in this area and ensure greater stability at the national level. At a minimum, such a platform should analyse the activity of one legal entity against the activity of another legal entity, in arbitration and civil proceedings to which it is a party, on net profits (not information about assets) for the previous year, and so on. There are ways out of this situation.

Option 1: The recipient of financing must maintain a separate account with the bank, provide data on expenses therefrom in a restricted access mode (login, password) to financing participants, and agree that the bank shall have the right at any time to freeze funds on this account until certain specific circumstances are clarified; in any situation where funds from such an account are spent not in accordance with the stated goals of the legal entity's fund raising by way of the ICO, such information is placed on the fund raising platform, with simultaneous notification of the Internet platform (crypto-exchange).

Option 2: The activity described at Option 1 is carried out by the Internet platform itself (crypto exchange). In other words, the financing recipient does not receive any "hard cash;" rather, it is all located on a digital account opened with the crypto exchange. At the same time, information about the expenditure of funds is provided by the Internet platform (crypto-exchange) to financing participants in closed access mode (login, password).

Then the system will be able to provide financing participants with a certain level of guarantee, which will increase the attractiveness of this new sphere and attract new investors, including from abroad.

Possible objections to this proposed approach are understandable. Neither the companies, nor the crypto-exchanges, nor the banks today would choose to conduct their activities under such "strict" regulation because of their desire to obtain easy and fast profits. On the other hand, if a financing recipient behaves in good faith and achieves its goal as the result (honest implementation) of the project, then what should it be afraid of?

It is quite possible to build a new system within the existing legal framework, as evidenced by the experience of several countries – in particular, the Republic of Belarus. Foreign companies can form subsidiaries in the Hi-Tech Park of the Republic of Belarus [1].

According to the statement of V. Zuercher, the main problem of cryptocurrencies is that, in the vast majority of cases, no one can take the proceeds from the sale of a cryptocurrency at an increased exchange rate (compared with the exchange rate when purchasing crypto-currencies) as money to the Bank.

In our opinion, a way out of this situation (given, also, the goal of preserving the current financial system and the proper order for monetary circulation) would be to exchange cryptocurrencies for 'fiat' money by reference to crypto-exchanges accredited by the state and functioning with large (reputable) banks, whose activities would be subject to compulsory insurance (crypto insurance).

In other words, cryptoexchanges would act as a kind of filter in this new sphere of activity for national governments, which would minimise the risks in

constructing a new financial turnover algorithm, thereby ensuring consensus among all market participants.

A system thus described, in our opinion, would serve to minimise cases of improperly granting legal rights of possession, use and disposal of money or other property acquired by persons as the result of their commission of crimes, including by means of transactions or financial operations with such money or other property. In this regard, it would be possible to adjust the scope of articles of criminal law on money laundering, since under contemporary circumstances these acts can be committed not only through transactions or financial operations, but also by other means [6]. An example would be the experience of Switzerland, which intends to regulate cryptocurrency operations with existing legislation. In particular, it is envisaged that all tokens would be classified into payment, utility (affording access to the resources of special crypto-platform) and asset tokens.

Accordingly, it might be assumed that utility tokens should not fall under the legislation on the anti-money laundering of funds due to the fact that such tokens only provide access to the relevant resources (<https://crypto.whenspeak.ru/rooms/3840/>). However, this approach cannot be deemed successful, since utility tokens can in fact be transferred to other persons or exchanged for other tokens – including payment tokens – exchanged for currency, and so on. Therefore, the risk of the use of tokens in the Swiss jurisdiction for purposes of money laundering cannot be considered adequately mitigated.

It is noteworthy that the idea of creating a national cryptoexchange has already been raised in China. Wang Pengjie has suggested that the People's Bank of China, in cooperation with the China Securities Regulatory Commission, can create its own platform for authentic blockchain technology with a special system of verification and a national cryptoexchange (<http://bitcom.blog/member-chinas-main-political-advisory-proposes-national-crypto-trading-platform/?i=3>).

It is rather easy to envision a crypto-exchange more tangibly if we consider official applications for modern smartphones that allow downloading and installing of programs and games (AppStore and Google PlayMarket). Yes, you can download a program from the Internet to your phone (especially easily, as this can be done on any phone with the Android platform); but in this case, you will not be immune from fraudsters and cyber criminals, who insert special scripts into "free" software that is hosted on the Internet allowing them to download information from your phone; to send SMS messages; to identify the level of your savings in the bank; to steal money; or to install a permanent task in your phone to engage in undetected mining of the Monero cryptocurrency, etc. [15]. Similarly, today, with the independent purchase of cryptocurrency, no one is immune from phishing sites, scam sites, mirror sites of official foreign exchanges, etc. It seems that the accredited crypto-exchanges would minimise the risks currently existing in the crypto-sphere.

Such an approach would also help to build a system in which the state, along with the "classic" budget, would be able to formulate in tandem a crypto-budget. In science, for example, it is proposed to introduce an elective tax on anonymity for a transaction in which at least one party is known [10]. In Brazil, a capital gains tax of 15% is payable to the state at the time of the sale of cryptocurrency, and the

holder of the cryptocurrency worth more than 1,000 reals must declare such information in his declaration [9].

After all, the financial resources of the country are different flows (municipal, public finance, household finance), which are not separated by an impenetrable wall, but rather interconnected [4]. In this case, the state, according to some forecasts, would also be able to transfer the accumulated cryptocurrency to fiat currency and replenish the "classic" budget; and the level of the country's budget would always be above 100%.

## CONCLUSION

This study shows how it would be possible to integrate the latest developments in the field of Finance in the legal sphere of monetary circulation.

A way out of this situation (given, also, the goal of preserving the current financial system and the proper order for monetary circulation) would be to exchange cryptocurrencies for 'fiat' money by reference to crypto-exchanges accredited by the state and functioning with large (reputable) banks, whose activities would be subject to compulsory insurance (crypto insurance).

This would minimise the risks in constructing a new financial turnover algorithm, thereby ensuring consensus among all market participants.

In this case the state would be also able to create its own cryptobudget and the level of the country's budget would always be above 100%. In addition, by applying to the crypto-exchange, the courts would be able to impose a penalty on the cryptocurrency of citizens and law firms, etc.

A private citizen should not have fear that a transfer of funds to an Internet platform (whether *de jure* or *de facto*) would be equated with their unconditional loss. Financial security should correspond to the real development of monetary relations and be adapted to modern conditions; and the state's monetary system should be flexible in relation to new challenges and threats.

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# EROSION ON THE PROCEDURAL RIGHTS OF THE DEFENDANT IN THE FIGHT AGAINST THE IRREGULAR MIGRATION

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## ABSTRACT

The international migration has intensified during the last two decades. The number of the irregular migrants entered the European Union reached unprecedented levels between 2015 and 2017. It shall be emphasized that the irregular migration as a phenomenon is defined by the Member States in different ways in the EU. In 2015, when Hungary was in the centre of the migratory flow, a decision on stopping the irregular migration was adopted by the Hungarian Government. In connection with this political standpoint the legal and technical conditions were created by the legislator as well. The legal response concerned not only the criminal law, but also the criminal procedural law. In our paper we would like to deal with only the criminal procedural focus seeing that the special criminal procedure on crimes against the closing of border has been inserted into the new Hungarian Code on Criminal Procedure (Act XC of 2017). Although this special criminal procedure was known by the Hungarian Act on Criminal Procedure (Act XIX of 1998) as well, the new legal solutions with special reference to the rights of the defendant can be criticized. The aim of this paper is to present these new regulations concern the fundamental procedural rights of the defendant with the analytical method, and to make de lege ferenda proposal. The topic of our analysis concerns only the Act XC of 2017 will come into force on 1 July 2018 and the mentioned special criminal procedure.

**Keywords:** Hungarian Code on Criminal Procedure, Hungarian Act XC of 2017, defendant, criminal procedural rights, irregular migration, Directive 2010/64/EU, special criminal procedure, crimes against the closing of border.

## INTRODUCTION

Generally it can be underlined that irregular migrant can be defined as an individual who crosses a border without proper authority or violating conditions for entering a country [6]. The irregular migrants usually use the following ways entering the territory of EU: (a) border-crossing „without proper authority, either through clandestine entry or with fraudulent documents; (b) entering with authorisation, but overstaying it; (c) deliberately abusing the asylum system; (d) under the control of smugglers and traffickers” [8], [12]. In connection with the mentioned thoughts, it shall be emphasized that international migration has intensified during the last two decades, Europe has been receiving increasing number of migrants from the developing countries [11]. The record number of the detected irregular border-crossing was in 2015. Although after this year the Member States reported a significant decrease in the number of the detections, the problem

is not solved yet. The number of the irregular migrants entered the EU is still very high. It shall be underlined that the paper does not deal with the irregular stay as a consequence of the irregular migration. The following table [3] shows the number of the detections in the last two years:

**Table 1.**

Routes	Eastern border	Western Balkan	Black See	Circular route from Albania to Greece
2016	1349	130.261	1	5121
2017	776	12.178	537	6396

Routes	Eastern Mediterranean	Central Mediterranean	Western Mediterranean	Western African
2016	182.277	181.376	9900	671
2017	42.305	118.962	23.143	421

The above-mentioned data clearly proves that there is a high migratory pressure into the EU, therefore „the politics of migration has become increasingly prominent as a site of struggle on the political scene” [10]. The irregular migration as a phenomenon is defined by the Member States in different ways. It is defined as an petty offence, however there are other Member States who solve the problem on the level of the administrative law. It shall be emphasized that the degree of *de jure* criminalisation is limited – in the most Western countries illegal residence as such is not crime [4]. However, the irregular migration is often described as a threat to state sovereignty and to public security [7]. This unfavourable effect was recognized by the Hungarian Government in 2015, therefore a decision on using criminal tools in the fight against the irregular migration was accepted by the Hungarian legislator.

In Hungary the Act CXL of 2015 adopted on 4 September 2015 amended the relevant acts in relation to stopping the irregular migration. As consequence, after the mentioned amendment a legal and a technical closing of border has been set up. In order to protect on the one hand the technical closing of border and the other hand the security of the country it was necessary to create „*sui generis*” statutory definitions with reference to the closing of border, and to ensure that criminal procedures in connection with the referred crimes can be finished rapidly. Therefore three statutory definitions – so-called crimes against the closing of border summarized by the table 2. – were created into the Hungarian Criminal Code, and in connection with it the Act on Criminal Procedure in force was amended as well. A new procedural legal frame was inserted into the Chapter titled „Special criminal procedures”. In this chapter many special procedural rules are regulated by the legislator, where the reason of the special regulations is either the special character of the defendant, or the special character of the concrete criminal case. In connection with our paper the latter one is of importance. Namely, the mentioned

special rules can be applied only for the sake of the crimes against the closing of border. Creating of the new special procedural rules enabled for the authorities to conduct the procedure started because of a crime against closing of border very rapidly. After the amendment of the Hungarian Criminal Code, many criminal procedures started for the crime against the closing of border in Hungary. The following table [13] summarizes the crimes against the closing of border were known to the authorities between 15 September 2015 and 31 December 2017, clearly shows that the special procedural rules were applied by the authorities many times:

**Table 2.**

	2015	2016	2017
Damaging the closing of border	22	1543	863
Irregular crossing the closing of border	914	2843	22
Obstruction the building on closing of border	-	-	-

The data raised in 2016 can originate in the closing of the Slovenian-Croatian and the Croatian-Serbian Borders. The reduced data relating to 2017 clearly proves that the Western Balkanian migratory route was closed successfully by the authorities [5].

In line with the above-mentioned amendment of the Act XIX of 1998, the codification of the new Hungarian Code on Criminal Procedure (Act XC of 2017, hereinafter: new Code) was also in process. Considering that (a) the irregular migration will be an important topic of the European politics, and (b) the main directives of the mentioned codification were also the rapidity and the efficiency [9], the special procedural regulations on crimes against the closing of border had been left in the new Code. Although the already cited rapid political and legal answer to the migratory pressure was acceptable, many procedural regulations are open to criticism with special reference to the fundamental procedural principles, or the rights of the defendant. The aim of this paper to deal with the latter one, and to highlight the substandard regulations concern: (a) the right to defense; (b) the right to inspect the documents of the investigation; (c) the right to use of native language.

## **DESCRIPTION OF THE LEGAL PROBLEM**

### **The right to defense**

As it was mentioned above, according to the Hungarian criminal procedural law the criminal procedure started because of a crime against the closing of border can regard as a special criminal procedure. Therefore special rules are regulated by the legislator in the chapter concerns it. It means that in criminal procedure conducted based on the mentioned crime, the provisions set forth in the new Code shall be applied with the derogations stipulated in the chapter concerns the crimes against

the closing of border. These special rules are declared between the Sec. 827 and the Sec. 836. of the new Code.

The right to defense is regulated as a fundamental principle of the criminal procedure not only by the Hungarian Constitution but also the new Code. The efficiency of the mentioned right is highlighted by the new Code. It means that there are many rules regulated by the new Code which open the door to practice the defense counsel's rights efficiently during the criminal procedure. It concerns for example the right to inspect the documents, or the right to establish the contact – before the procedural action concerning the defendant - without delay with the defendant for the purpose of the compliance on the defense. The right to defense is regulated by the Article XXVIII of the Hungarian Constitution as a fundamental procedural principle, furthermore its' efficiency is declared as an important feature by the decisions of the Hungarian Constitutional Court concerning the mentioned right (Decision no. 25/1991, and Decision no. 6/1998) [2].

It can be emphasized that the above-mentioned principle prevails in the judicial procedure, however, during the investigation does not generally. Towards the efficient defense, the participation in person of the defense counsel in the course of the relevant investigatory actions is necessary. These relevant procedural actions determine the way of the defense can be in the investigation the followings: the questioning of the defendant, or if the defendant is involved in the confrontation, or other evidentiary procedures concerning the defendant. Contrarily, there are only a few instances when the participation in person of the defense counsel is obligated as early as the investigation. The rules of the criminal procedure against juvenile offenders are a good examples of the mentioned question, namely according to the Sec. 682 par. (2) of the new Code before the accusation the participation in person of the defense counsel is statutory in the above-mentioned investigatory actions.

However, according to the Sec. 829 the participation of the defense counsel is statutory in the criminal procedure conducted based on the above-mentioned crime. However, the participation is not equivalent with the attendance during the procedural action. Namely, participation in person in the course of relevant investigatory actions is not obligatory for the defense counsel according to the general rules. It shall be underlined that there are no rules among the criticized regulations on the mentioned special criminal procedure which concern the attendance of the defense counsel during the several investigatory actions. Namely, it is obligatory for the investigating authority and the prosecutor to appoint officially a defense counsel for the defendant who committed a crime against the closing of border before the questioning, however, according to the new Code the attendance of this defense counsel during the questioning and the other relevant investigatory actions is not obligatory. It shall be emphasized that this legal situation seriously damages the fundamental right to the efficient defense, therefore it shall amend in the near future. Regarding to the mentioned claim, our de lege ferenda proposal can be found in the conclusions.

### **The right to inspect the documents of the investigation**

According to the Sec. 352. Par. (1) of the new Code the laced documents of the investigation shall be handed to the defendant and the defense counsel by the prosecutor or the investigating authority no later than one month before the

accusation. Accordance with the mentioned rule the defendant and the defense counsel shall be enabled to inspect all documents – with the exceptions declared by the new Code – that were issued during the investigation. It shall be emphasized that this is the general rule of the new Code. The reason of this regulation is to ensure the right to the efficient defense. However, according to the Sec. 828. Par. (5) the above-mentioned term can be shortened or skipped by the prosecutor if the object of the criminal procedure is a crime against the closing of border. We think that it is a causeless regulation. It shall be emphasized that the most of the criminal procedure related to a crime against the closing of border is an arraignment. It means that the prosecutor arraigns the defendant committed the above-mentioned crime to the court within fifteen days from the questioning of the defendant. The reason of this is that the defendant is either caught in the act or admits the commission of the mentioned crime. Namely, the criminal case is before the court no later than fifteen days after the questioning. Therefore, the opportunity to shorten the term on inspection of the investigatory documents is understandable in that criminal procedure which started because of a crime against the closing of border. However, to skip this mentioned term is not respectable. Namely, by means of this regulation it might that the defendant and the defense counsel do not have any opportunity to inspect the documents of the investigation – except the minutes on the questioning of the defendant and the expert opinion – before the court procedure. Therefore, the opportunity on skipping the mentioned term is unjustifiable, it shall amend in the near future. Our de lege ferenda proposal of this topic can be found in the conclusions.

### **The right to use of native language**

According to the Article 6. Par. (3) of the European Convention on Human Rights “everyone charged with a criminal offence has the minimum right to be informed promptly, in a language which he understands and in detail, of the nature and cause of the accusation against him”. The mentioned principle can be found in the Article of the Charter on Fundamental Rights of the European Union as well. This rule – in connection with the principle of fair trial – clearly shows that the defendants have the right to use their native language or other spoken language during the criminal procedure. Moreover, the aim of the European Union is to enhance the mutual cooperation between the Member States and the principle of fair trial and the mutual recognition of the judgments and other judicial decisions in the civil and criminal matters can be found in the center of it. The ground of the mutual recognition is to ensure that the Member States have trust in each other’s criminal justice system which requires to set minimum standards concerning the fundamental procedural principles – among others the right on use of the native language.

In the European legislation the Directive 2010/64/EU of the European Parliament and of the Council on the right the interpretation and translation in criminal proceedings was adopted on 20 October 2010 (hereinafter: Directive) set minimum standards for the Member States referring to the mentioned procedural right. The Directive concerns three questions: the right to the qualitative interpretation, the right to the qualitative translation of essential documents, and the other procedural obligations [1]. To show the legal problem with reference to the special criminal procedure mentioned by our paper, the right to translation of

essential documents shall be highlighted. According to the Article 3. Par. (1) of the Directive: “*Member States shall ensure that suspected or accused persons who do not understand the language of the criminal proceedings concerned are, within a reasonable period of time, provided with a written translation*” of all essential documents. These documents which guarantee the fair trial are the followings: any decision depriving a person of his liberty, any charge or indictment, and any judgment.

The general rules referring the right on use of the native language meet the above-mentioned requirements in the new Code. According to the Sec. 8. Par. (3) and the Sec. 78. Par. (1)-(2) of the new Code the meaning of this principle can be summarized by the followings. Not knowing the Hungarian language shall not be ground for discrimination. In the criminal procedure all those involved may use, both verbally and in writing as well their native, or their regional or minority language, or another language defined by the party concerned as a language spoken. It shall be emphasized that the scope of this principle is wider in the Hungarian law than in the Directive, and - in accordance with the Directive – waiver the right to the written translation is not allowed for the defendant with reference to the following documents: the accusation and all of the conclusive decisions /Sec. 423. Par. (2) and Sec. 455. Par. (6) of the new Code/.

However there is a special rule concerning the procedure started because of a crime against the closing of border. According to the Sec. 833 of the new Code the defendant has right to waive the translation of the accusation and the judgment. It shall be emphasized that the above-mentioned amendment of the new Code fits for the requirement of the Directive. Namely the right to waive the written translation is declared by the Article 3. Par. (8) of the Directive. However, the mentioned new rule is not coherent and makes – causeless - difference between the court’s conclusive decisions concerning the right to translation. Namely, the mentioned rule deals with only the judgment and does not deal with the other conclusive decisions, for example: decision on termination of the procedure, conclusive decisions of the court of appeal, decision made in procedure based on the omission of the trial, etc. Namely, the obligation of the authorities on the translation will be shared as the decision on the waiver the translation of the defendant may be which can be regarded as unjustified. If the defendant will exercise the right of the waiver, it will not be obligatory to translate the accusation, and the judgment (See Sec. 833 of the new Code) in contrast with the other conclusive decisions /See Sec. 455. Par. (6) of the new Code).

The mentioned anomaly can be summarized by the followings. According to the general rule translation of the decisions and other official documents to be served is obligatory for the defendant who does not know the Hungarian language excepting if the defendant takes advantage of the right to waive the written translation. This exception is not applicable concerning the accusation and the conclusive decisions. However, the criticized regulations can be found in the chapter of special procedural rules on crimes against the closing of border inserted into the new Code connected with the fight against the irregular migration. Although the most relevant anomaly can be found in the Act in force was detected by the legislator during the codification of the new Code, the regulations which will come into force on 1 July 2018 can not be regarded as perfect. Namely, according

to the new Code the defendant will have right to waiver the translation concerning the accusation and the judgment, however, the translation in writing of the other conclusive decisions will be obligatory. Therefore, a groundless difference will be made by the new Code which will have to be modified in the near future – if it is possible, before the coming into force.

The next table summarizes the mentioned question:

*Table 3.*

	new Code
General procedural rules	Translation of the decisions and other official documents to be served is obligatory excepting the right to waive the written translation. This exception is not applicable concerning the following essential documents: accusation and the conclusive decisions
Special procedural rules on crimes against the closing of border	The defendant has right to waive the translation concerning the accusation and the judgment, however the translation in writing of the other conclusive decisions is obligatory.

## CONCLUSIONS

In our paper three legal problems have been highlighted regarding to the special criminal procedural regulations on the crimes against the closing of border regulated by the new Hungarian Code on Criminal Procedure. Seeing that on the one hand a lot of criminal procedures were started because of the mentioned crimes, and on the other hand these criticized rules concern basically the fundamental procedural rights and principles, according to our opinion the mentioned rules shall amend or delete in the near future.

In respect to the mentioned legal problem on the right to the efficient defense, it would be necessary to declare unequivocally that investigatory actions which the defense counsel shall participate in person during the whole period of the action in. The efficiency of the defense would be guaranteed by the legislator with this amendment. Therefore, our *de lege ferenda* proposal relating to the Sec. 829 of the new Code – as a conclusion of the mentioned topic – is the following: *"In the criminal procedure started because of a crime against the closing of border the participation of the defense counsel is obligatory. The presence of the defense counsel is obligatory during the whole period of the following investigatory actions: (a) the questioning of the defendant; (b) the evidentiary procedure if the defendant takes part in it as well."*

In connection with the right to inspect the documents of the investigation, it shall be underlined that the opportunity on skipping the mentioned term is unjustifiable. The legislator shall open the door for the defendant and the defense counsel to inspect the investigatory documents before the court procedure. Therefore, according to our opinion the mentioned opportunity shall delete in the new Code. Considering that in most cases the prosecutor shall arraign the defendant committed a crime against the closing of border to the court within fifteen days from

the questioning of the defendant, the opportunity to shorten the general term (no later than one month before the accusation) on handing the investigatory documents to the defendant and the defense counsel is undisputed.

According to our opinion the mentioned special regulations on the right to the writing translation shall rethink concerning the new Code. The amendment could be two possible ways. At first, it is worth considering to repeal the mentioned special procedural rule referring to the right to the translation. Namely, the first possible solution is deleting of the criticized regulations, thereby it could be clarified that the general rules shall be applied by the authorities during the criminal procedure on crimes against the closing of border as well.

The second legal solution is if the legislator will amend the criticized regulation of the new Code and clarify that there is no difference between the conclusive decisions concerning the defendant's right to waive the translation. It would be necessary in accordance with the Directive and the obligation on implementation of the Hungarian State as well. According to our opinion clarifying that the right to waive the translation concerns only the writing translation would be also necessary. Therefore our *de lege ferenda proposal* relating to the Sec. 833.§ of the new Code – with reference to the criminal procedure on crimes against closing of border - is the following: "*The defendant has right to waive the writing translation concerning the accusation and the conclusive decisions*".

It shall be underlined that the legislator often uses the criminal law and the criminal procedure law to solve a social problem. Therefore, it often appears that the rapid legislation serves mainly political aims and the practice shows the anomalies in the system of the new regulations. We hope that the legal problems mentioned in our paper will be solved by the Hungarian legislator in the near future, and the criticized regulations will be repealed or amended in accordance with our legal traditions and our European commitments.

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# FISHERY AND PRESERVATION OF AQUATIC BIOLOGICAL RESOURCES IN RUSSIA: A VIEW THROUGH THE PRISM OF LAW

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## ABSTRACT

The article is devoted to the challenging and not adequately researched issue related to the legal regulation of social relations in the field of fishery and preservation of aquatic biological resources in the Russian Federation. The purpose of the article is to analyze the legislation on fishery and preservation of aquatic biological resources in connection with the objectives of the successful development of fishing industry and the interests of the business community. The scientific and practical significance of the article lies in the fact that the authors study the practical implementation of the following legal mechanisms: quotas for catching aquatic bioresources, licensing and contractual methods of regulation, control and supervision, determination of the prospects for further legal regulation. In this regard, such methods of obtaining knowledge as comparative legal analysis and modeling are used. Comparative research method allows increasing the reader's interest to the issues under consideration. The authors come to conclusion that there are certain contradictions in the current legal regulation in the field of fishery. On the one hand, such legal institutions as trades and contracts allow to ensure the competitiveness of economic entities and equal status in relations with the state authorities, and on the other hand, the possibility of forced termination of contracts.

**Keywords:** *fishery, investment quotas, entrepreneurship activities, contractual relations, overfishing, licensing procedures*

## INTRODUCTION

The Russian legislation on fishery and preservation of aquatic biological resources demonstrates rather dynamic development. Having emerged at the beginning of the 21st century, it has been developing intensively taking into account the difficult challenges of the modernity, including illegal, unregulated and unreported fishing. Difficult tendencies of its development were studied by the legal scholars who outlined prospects of its improvement.

Art. 1 of the Federal Law No. 166-FZ of December 20, 2004 “On Fishery and Preservation of Aquatic Biological Resources” (hereinafter referred as Federal Law on Fishery) contains the following definition of the key term “aquatic biological resources”: fish, aquatic invertebrates, aquatic mammals, algae, other aquatic animals and plants in a state of natural freedom. Considering the above definition, the term “aquatic biological resources” is a two-part concept combining the animal and plant world in conjunction with the aquatic environment. Aquatic bioresources build up the resource base for the fishery that provides the country with food.

The legislation on fishery and preservation of aquatic biological resources is in a complex relations with the legislation on aquaculture. The Federal Law No. 148-FZ of July 2, 2013 “On Aquaculture (Fish Farming) and on Introducing Amendments to Certain Legislative Acts of the Russian Federation” refers commercial aquaculture to agricultural production. According to Art. 11 of this Federal Law aquaculture (fish farming) to a certain part refers to the preservation of aquatic biological resources (that is acclimatization and artificial reproduction of aquatic biological resources) and, therefore, to fisheries. In this case, it is carried out in accordance, first of all, with the Federal Law on Fishery, and with the Federal Law on Aquaculture to the extent not regulated by the Federal Law on Fishery.

The establishment of quotas is a common way of regulating fisheries used in many countries. It should be borne in mind that any quotas (as well as total allowable catches) are in fact an abstract expression of the right to catch aquatic bioresources. The following types of quotas are envisaged in Russia: industrial, coastal, scientific, for cultural and educational purposes, for fishing with the purpose of aquaculture (fish farming), amateur and sports, traditional, industrial quotas for freshwater objects. The legislator puts high hopes on quotas of catching of aquatic biological resources provided for the investment purposes to carry out industrial fishery and (or) coastal fishery (hereinafter referred as quotas of procurement (catching) of aquatic biological resources for the investment purposes). The utmost importance is given to quotas of the Russian Federation for catching of aquatic biological resources in the areas covered by the international treaties on fisheries and preservation of aquatic biological resources, as well as quotas of foreign countries for catching aquatic biological resources in the exclusive economic zone of Russia established in accordance with international treaties on fisheries and preservation of aquatic biological resources (Art. 30 of the Federal Law on Fishery) [1].

Quotas of procurement (catching) of aquatic biological resources for investment purposes, distributed through special contracts (Art. 29.3, 30, 33.7 of the Federal Law on Fishery), is a novel of the Russian legislation, partly adopting foreign experience. The question of free circulation of catch quotas (including investment ones), the use of these quotas as collateral (pledge) of credit obligations are currently being discussed in the business community. At the same time, there are some concerns that free circulation of quotas (as well as their pledge) will lead to capital outflows from the fishing industry to trade, the emergence of “quota speculators”, and decrease in business activity and employment in fishing industry. It will not be able to provide the proper volume of investments in fishery that is necessary for its technical re-equipment and release of competitive product. Currently, there is a mixed procedure for the use of aquatic biological resources in Russia, which involves mutual supplement of contractual, and licensing methods of

regulation provides for. A number of countries also use the combination of licensing and contractual methods of regulation (USA, Canada [2], Norway [3], China [4] and Turkmenistan). This ensures both the manageability of the industry and competition for the right to use these types of natural resources. Some neighboring countries rightly consider fishery industry as an important source of national income [5].

In Russia the permit for procurement (catching) of aquatic biological resources (Art. 34–37 of the Federal Law on Fishery) and decisions to grant for use aquatic biological resources classified as fishing objects (Art. 33.2 of the Federal Law on Fishery) can be referred to the licensing procedures of granting the right for use aquatic biological resources. Permit is required for all types of fishing, except for the traditional one. Permit, in turn, is entitling document for the fishery for scientific research and monitoring purposes, educational and cultural-educational purposes, fishery for the purposes of aquaculture (fish farming) and traditional fishery, otherwise speaking for activities that are not typical for business. The practical implementation of these mechanisms allows the state authorities to establish control over the persons having the right to use aquatic bioresources and thereby ensure the compliance with the legal requirements.

The legislation on fishery and conservation of aquatic biological resources contributes to the intensive development of contractual relation. Art. 5 of the Federal Law on Fishery provides that contractual commitments and other relations connected with turnover of aquatic biological resources shall be regulated by the civil legislation unless otherwise provided for by this Federal Law. The prevalence regulation of these contractual relations within the framework of the special law on fishery shall be regarded as the correct approach that has been repeatedly emphasized in the academic literature.

The legislator provides for the contracts on the reservation of a share of the quota for catching aquatic biological resources, on the allotment of fishing ground, on the use of aquatic biological resources. Since these contracts are concluded on the basis of tenders, it is ensured a certain business competition between economic entities. Concomitantly public entities have gained some additional opportunities to influence on rapidly developing contractual relations. For instance, the standard forms of all types of contracts, provided by the Federal Law on Fishery, are asserted by the resolutions of the Government of the Russian Federation that allows to mildly streamline these relations. Considerable changes in the procedure of access of economic entities to the use of aquatic biological resources and the procedure for its withdrawal were made by the Federal Law No. 349-FZ of July 20, 2016 “On Introducing Amendments to the Federal Law “On Fishery and Preservation of Aquatic Biological Resources” and Certain Legislative Acts of the Russian Federation in Terms of the Improvement of Distribution of Quotas for Procurement (Catching) of Aquatic Biological Resources”.

In the following year (from January 1, 2019) a new provision of Art. 18 of the Federal Law on Fishery titled “fishing ground” will be put into effect. A fishing ground is a water object or part of it (as before – a fishing area). Commercial fishing is required the allocation of fishing grounds in fresh water. At the same time, a fishing ground is not allocated in the sea waters of Russia. There is a special provision: for the purposes of catching of anadromous species of fishes, the fishing

ground is allocated in any waters within frontier of the Russian Federation, including sea waters [6].

It should be noted that fishing ground is provided for the organization of amateur and sports as well as traditional fishing. The encroachment lines of fishing grounds are determined in accordance with the requirements of the Water Code of the Russian Federation pursuant to the procedure established by the Government of the Russian Federation. In turn, the list of fishing grounds in any waters of Russia is approved by the executive body of the subject of the Russian Federation in coordination with the Federal Agency for Fishery. Amending law also increased the validity period of the contract on the reservation of a share of the quota for catching aquatic biological resources from 10 to 15 years, while preserving the historical principle of granting the right to catch biological resources with regard to the previously established quotas. At the same time, the threshold for the necessary procurement of aquatic biological resources is increased from 50% to 70% of the allocated quotas and the right to use the provided resources in the amount of not less than 70% only on own vessels or used under a leasing contract is established. In any cases where there has not been compliance with this provision, the right for catching aquatic biological resources shall be forcibly terminated and the share of quotas shall be sold at auction. These legislative innovations are intended to ensure the sustainability of fisheries and create the confidence of entrepreneurs in the effective return on their investments that will help the successful development of fishing industry.

As a general rule, the contracts on the reservation of a share of the quota for catching aquatic biological resources, on the allotment of fishing ground, on the use of aquatic biological resources may be canceled before maturity at the request of one of the parties in accordance with civil legislation and the Federal Law on Fishery (Art.33.5 of the Federal Law on Fishery). If the parties remain at odds over termination and amendment of the contract, the contract shall be terminated or amended by a judicial decision. Compulsory termination of the right to catch aquatic biological resources shall be effected in the event that: it has become necessary to use of water objects for state needs; aquatic biological resources are procured (caught) within two years running in the amount of less than 70 % of industrial quotas and coastal quotas except in the case of an emergency and fishing restrictions; the person enjoying the right to procure (catch) aquatic biological resources has violated two or more times within a calendar year fishery regulations resulting in a major damage to aquatic biological resources; the person enjoying the right to procure (catch) aquatic biological resources has not delivered the catch of aquatic biological resources to the seaports of Russia, as well as to other places of delivery subject to applicable legal requirements provided by the Government of the Russian Federation; the person enjoying the right to procure (catch) aquatic biological resources within calendar year has made suspension of work of technical control means for 48 hours and more without consent in accordance with the established procedure; the person enjoying the right to procure (catch) aquatic biological resources has not carried out the unloading of catches of aquatic biological resources caught in coastal fisheries, as well as fish and other products made from such catches on fishing vessels (Art. 13 of the Federal Law on Fishery).

According to the contract on the reservation and granting of a share of the quota for catching aquatic biological resources for investment purposes one of contracting

parties – public authority undertakes to reserve and grant the right to procurement (catch) of aquatic biological resources to other party – legal entity or the individual entrepreneur. The right for catching aquatic biological resources is assigned to the person for the period of the implementation of investment project (Art. 33.7 of the Federal Law on Fishery). The right to procurement of aquatic biological resources is granted for 15 years to the person concluded the contract on the reservation and granting of a share of the quota for catching aquatic biological resources for investment purposes. In addition, this person shall have right of ownership on the object of investments placed in operation or own it by virtue of the financial lease contract.

The contract on the reservation and granting of a share of the quota for catching aquatic biological resources for investment purposes contains the following provisions: its parties, the subject of the contract, its validity, investment vehicle, the types of aquatic biological resources, fishing areas, types of fisheries, share size of quotas for catching aquatic biological resources and term for the granting of right for catching aquatic biological resources. Simultaneously the following mandatory provisions shall be stated in the contract: conditions for ensuring the implementation of investment projects, the provisions of the investment project, as well as a special condition providing for compliance with the schedule of construction and commissioning of the investment object or compliance with the schedule of investments and commissioning of the investment object. The grounds for early termination of the contract on the reservation and granting of a share of the quota for catching aquatic biological resources for investment purposes are: nonobservance of an one of the special terms of the contract on the reservation and granting of a share of the quota for catching aquatic biological resources for investment purposes; transmission of the right to the investment object from the person concluded the contract on the reservation and granting of a share of the quota for catching aquatic biological resources for investment purposes to other person by alienation.

It is necessary to pay attention that the Russian legislator prevents from performing speculative operations with the mentioned type of quotas. The Resolution of the Government of the Russian Federation No. 648 of May 29, 2017 “On the Reservation and Granting of a Share of the Quota for Catching Aquatic Biological Resources for Investment Purposes in the Field of Industrial Fishery and (or) Coastal Fishery” is of great importance for regulation of these social relations. This by-law act contains “Regulation on the Reservation and Granting of a Share of the Quota for Catching Aquatic Biological Resources for Investment Purposes in the Field of Industrial Fishery and (or) Coastal Fishery”. It should be noted that these quotas are distributed on a complex competitive basis. At the first stage, a tender is held with the participation of the tender commission, and then in some cases a reversed auction is held. The legal mechanism of investment quotas in the Russian legislation was created with a focus on the quotas under the keel, although it is not a direct copy of the foreign legal category. Interesting to note that foreign experience (Canada, Iceland) shows a negative effect: increased lending upon the security of ship quotas leads to excess capacity of the fishing fleet over the existing stocks of “fish in the water”. In this situation, ship-owners are forced to charter their ships to the business people of other countries, as there is a threat of overfishing of aquatic biological resources [1].

Unfortunately, even taking into account foreign omissions and difficulties, investment quotas have not provide a qualitative leap in the development of the national fisheries sector. During the bidding process the Federal Agency for Fishery has received only 4 applications for investment quotas providing for the construction of a small fleet. Along with investment quotas, the state authorities are looking for other legal and organizational methods of modernization of the fishing fleet (including fleet operating in fresh water areas).

## **CONCLUSION**

Legislation of different countries of the world often combines permissive and contractual mechanisms of public relations regulation on the use and protection of aquatic biological resources. Such combination allows to the state to achieve controllability of the fisheries providing population and at the same time to protect legal interests of the business community investing in fisheries.

The system of distribution of rights to catch aquatic biological resources has changed many times. The further improvement of the legislation shall be made in the course towards investment, innovation, maintenance of a competitive environment. At the same time, the free circulation of various types of quotas for catching aquatic biological resources, once received by fishermen from the state, would lead to the movement of capital from the fishery industry to commercial sphere, that in turn would hinder the fishery and food security of Russia. There are some contradictions in the legal regulation of fishery. Such legal institutions as trades and contracts allow to ensure the competitiveness of economic entities and equal status in relations with the state authorities, and on the other hand, the possibility of forced termination of contracts.

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# FORCED COMPLICITY AS A CIRCUMSTANCE EXCLUDING THE CRIME OF FINANCING TERRORISM

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## ABSTRACT

The financing of terrorism is an international crime. In recent years, Russia has stepped up its interdisciplinary research on countering the financing of terrorism. The main purpose of this article is to define the limits of criminal liability for the facilitation of terrorist activities in the form of financing of terrorism; evidence of the possibility of fixing the forced complicity in the form of financing of terrorism as a circumstance precluding the crime of the act. The objectives of this article were: a comparative analysis of anti-terrorist terms and definitions, identifying the content of the financing of terrorism on the basis of a functional approach. The financing of terrorism is a form of facilitating terrorist activities; a separate form of complicity and incitement. There are conditions under which such aiding and abetting is compulsory. For example, the ransom of hostages or the financing of the return of a relative from the territory of another state, if such relative is a member of a terrorist organization. It is proposed to recognize such an act as an independent circumstance excluding the crime of the act. Circumstances forced complicity and incitement-a set of conditions under which human behavior is aimed at achieving a positive goal-to provide financial assistance in the release of the hostage (a member of a terrorist organization). A person is forced to cause harm, as provided for in Art. 205.1 of the Criminal Code. Such harm is considered socially appropriate (permissible) or socially acceptable, and such coercive actions aimed at achieving a socially useful purpose are not a crime, taking into account the observance of the conditions of their legality financing of terrorism, ransom, hostage - taking, forced complicity.

***Keywords:*** *financing of terrorism, ransom, hostage - taking, forced complicity*

## INTRODUCTION

Over the past five years, the number of convicts for crimes of a terrorist nature increased 1.5 times - to 590 (convicted in 2017) in Russia, according to the Supreme Court of Russia. Russian federation registered 1,871 crimes of a terrorist orientation in 2017.

Expanding of the financial base of terrorism contributes to the escalation of regional conflicts and the expansion of not only the economic but also the social base of terrorism, as well as the proliferation of weapons of mass destruction, which is increasingly used in inter-ethnic and inter-confessional conflicts [1]. Financing terrorism is a global phenomenon that not only threatens the security of member States, but can also undermine economic development and the stability of financial ratings[2].

The International Convention for the Suppression of the Financing of Terrorism condemning this evil was adopted by UN General Assembly resolution 54/109 of 9 December 1999. [3]

According to the current Criminal Code of Russian Federation the financing of terrorism is qualified as the facilitation of terrorist activities (Part 2, Article 205.1 of the Criminal Code). The financing of terrorism in the Criminal Code of the Russian Federation is understood as the provision or collection of funds or the provision of financial services having the knowledge that they are intended to finance the organization, preparation or commission of at least one of the crimes provided for in Articles 205, 205.1, 205.2, 205.3, 205.4, 205.5, 206, 208, 211, 220, 221, 277, 278, 279 and 360 of the Criminal Code of the Russian Federation, or for the financing or other material support of a person for the purpose of committing at least one of these crimes, or to provide an organized group, an illegal armed formation, criminal community (criminal organization), which are established or being established to carry out at least one of these crimes.

«There are two aspects to the mental element of the financing of terrorism as defined in the Convention. First, the act must be done willfully. Second, the perpetrator must have had either the intention that the funds be used to finance terrorist acts, or the knowledge that the funds would be used for such purposes. In this second aspect, intent and knowledge are alternative elements. The Convention does not provide further information on these two aspects of the mental element, and therefore they are to be applied in accordance with the general criminal law of each state party»[4].

Thus, the financing of terrorism represents a form of assistance to terrorist activities, a separate (special) [5] kind (type) of aiding. Not only a review of judicial practice, but also scientists focus their research either on sources [6] of terrorist financing [7], or on what terrorists spend money [8] and attacks themselves [9].

In the present article, I will raise the issue of the limits of criminal responsibility for the facilitation of terrorist activities in the form of financing of an organized group, an illegal armed group, a criminal association (criminal organization) which are established to carry out terrorist activities. In particular, I want to justify the general hypothesis about the allocation of the institution of forced financing of terrorism in the criminal law and the recognition of such cases as a circumstance that excludes the crime of the act and, accordingly the exclusion of any criminal prosecution.

Citizens of different countries are among the terrorist organizations, especially in IS (“Islamic State”, formerly IGIL which is recognized in Russia as a terrorist organization whose activities are banned by the decision of the Supreme Court of the Russian Federation on December 29, 2014), and unfortunately the number of Russian citizens who are inclined to radicalism and have joined this terrorist organization is not being reduced [10]. Criminal groups keep ordinary citizens as hostages.

Definition of terrorist-hostage taking. The notion of hostage-taking was widely debated during the process leading to the adoption of the International Convention against the Taking of Hostages. The outcome of discussions on the concept was

captured in article 1 of the Convention, which reads: Any person who seizes or detains and threatens to kill, to injure or to continue to detain another person in order to compel a third party, namely, a State, an international intergovernmental organization, a natural or juridical person, or a group of persons, to do or abstain from doing any act as an explicit or implicit condition for the release of the hostage commits the offence of taking of hostages ("hostage-taking") within the meaning of this Convention[11].

For example, sea pirates do not kill hostages. Their goal is a ransom [12].

Concerns about the increased role ransoms play in funding terrorism have led to calls for a universal policy banning ransom payments to terrorists. In June 2013, the G8 leaders issued a communiqué in which they recognized that ransom payments to terrorists helps to strengthen the organization and fund future incidents of kidnapping for ransom [13].

The reasonable question is raised: should a ransom be paid in order to save the life of a kidnapped person, or such payments are the financing of terrorism and the encouragement of new kidnapping?

Indeed, American hostages have suffered disproportionately bad outcomes compared to other Western hostages [14]. In this connection, the statement of the administration of the White House which assured the families of the American hostages that they will not be threatened with harassment for complicity of terrorism if they pay a ransom to the IG to help their relatives is illustrative. Such a statement was made after the fact that relatives of the murdered American journalist James Foley who was IG prisoner said that government officials threatened them with criminal prosecution in case they try to collect and pay the required IG ransom for him.

Thus, despite a general ban on the financing of terrorism the US authorities allow families of American hostages who are captured abroad to pay a ransom for their release. The administration of the US President made a statement on this case that there will be no formal change in legislation. This fact allows to consider that the providing of money or other material support to terrorist organizations as a crime. However, it was underlined that the Ministry of Justice had never held anyone liable for ransom and that this would continue. [15]

The second case of financing terrorism which is considered in the article is the provision of financial assistance to a terrorist organization as an attempt to return a relative from the territory of another state where he is a member of this terrorist organization.

I will give an example of a case that was considered by Russian law enforcement agencies on February 1, 2017 of Shamil Nurmagomedov who was brought to criminal liability under Part 1 of Art. 205.1 of the Criminal Code for the transfer of funds and other material assistance to a member of armed groups, that was considered as facilitation of terrorist activities by financing. He tried to turn back from IG of his brother - Marat, transferred money to him for that purpose and bought two air tickets intended for the departure of his brother from Syria.

The investigation considered these transactions as financing of terrorist activities.

The history of this case is as follows. The brother of the accused went to Syria in 2013 and his family tried to return him home. The Office of the Federal Security Service failed to achieve a positive result.

Thus, both the ransom of the hostages from terrorists and the release of relatives from a terrorist organization in the considered cases are forced actions of persons who are relatives of a hostage (member of a criminal organization). It means that the damage to the financing of terrorism, as in the case of circumstances precluding the criminality of the act “is caused in special circumstances, is forced”.

It should be noted that the characteristics of necessity (force) is peculiar to circumstances precluding the crime of the act which is provided for by Chapter 8 of the Criminal Code of the Russian Federation, and, above all this applies to extreme necessity, when a person is objectively forced to finance terrorists. From the view of criminally-legal qualification the considered acts do not fall under Art. 39 of the Criminal Code of the Russian Federation because there is no irreducibility of the consequences and a choice of means for persons who are providing financial assistance is always remain. A relative, a person close to the one who is in “captivity”, cannot fully take into account the state efforts (sometimes very weak) for his release, not being able to make rational decisions, based on special feelings and emotional stress towards the latter, and guided by emotions and feelings of deep compassion for his relative, seeking to free him from prolonged suffering in ways that seem most acceptable to the relative. In the present case of “forced complicity in the form of financing a terrorist organization” (hereinafter - forced aiding) this need is related to the understanding of the person who carries out such financing of the objective reality as a set of circumstances that characterize: 1) a real threat to their relative from the terrorists; 2) efficiency of financing as the most effective and quick way to return the victim; 3) absence of immediate prospects for the return of the victim with the passive behavior of his other relatives and law enforcement bodies; 4) a heightened sense of justice against the backdrop of calls from society and the state to fight terrorism as a phenomenon by any means in his country.

In view of this conclusion and the US practice of excluding of criminal prosecution in such cases, I propose the forced complicity in the financing of terrorism to be attributed to an independent kind of circumstances which are provided for by Chapter 8 of the Criminal Code of the Russian Federation excluding the crime of the acts.

I would like to highlight the elements of forced complicity, which are inherent in the circumstances which are stipulated in Chapter 8 of the Criminal Code of the Russian Federation, excluding the criminality of the act: 1) acts of human behavior carried out in the form of action or inaction under certain conditions; 2) these actions or inaction are outwardly similar to those of socially dangerous acts prohibited by criminal law; 3) the legislator must recognize these actions as legitimate, aimed at ensuring of protected interests or achieving socially useful goals.

Although such behavior causes harm, which is usually of forced nature, its social significance is expressed in that it brings substantial benefit to the vital interests of the individual - it really contributes to its salvation (liberation).

I propose to recognize such assistance to terrorist activity by financing, which obviously will not correspond to the original purpose of such actions - the proportionality of the amount of the ransom or the amount of money paid to the expenses for the release of a person from a terrorist organization as the exceed of the limits of forced complicity.

## **CONCLUSION**

This article defines the limits of criminal liability for the facilitation of terrorist activities in the form of financing of terrorism; evidence of the possibility of fixing the forced complicity in the form of financing of terrorism as a circumstance precluding the crime of the act. I propose to refer forced complicity in the field of combating the financing of terrorism to the independent institution of the General Part of the Criminal Code of the Russian Federation – as circumstances precluding the crime of the act. Such circumstances exclude all elements of a crime provided for by the criminal law such as public danger, criminal wrongfulness, guiltiness and penalty.

I will formulate the theoretical concept of the circumstances of forced complicity (forced financing of terrorism) as the set of conditions under which a person with his behavior aimed at achieving a positive goal - financial assistance to the release of a hostage (possibly a relative) - a member of a terrorist organization, necessarily causes harm as per Art. 205.1 of the Criminal Code of the Russian Federation, which, in the presence of certain circumstances, is recognized as socially expedient (admissible) or socially acceptable, and such forced actions aimed at achieving a socially useful goal are not a crime, subject to compliance with the conditions for their legitimacy.

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# **INTERNATIONAL LAW ON COMBATING CORRUPTION: CURRENT ISSUES IN NATIONAL LEVEL IMPLEMENTATION**

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## **ABSTRACT**

One of the relevant aspects of modern international life is combating crime. Among the main threats, corruption plays a key role as a socially negative phenomenon that undermines the economic, social, and political foundations of any given society. Corruption damages national security and at the same time hampers the development of international relations. Corruption undermines states' credibility as well as destabilizes international economic and political activity. In consideration of this issue, the consolidation of states in the fight against corruption constitutes the priority direction in the development of international relations. The strategic direction of international cooperation in the fight against corruption is the harmonization of criminal legislation. International standards focus on universal principles of combatting corruption. However, international law requires certain conditions for implementation within the framework of national legal systems. The world community is distinguished by a significant difference in the design of criminal law norms. A comparative legal analysis of the criminal legislation of multiple countries indicates a significant divergence in the characteristics of the specific constituent elements of corruption. Consequently, this paper reveals the mechanism of interaction of states in the fight against corruption on the basis of standardization of international legal norms.

***Keywords:*** *corruption, criminal prosecution policy, crime prevention*

## **INTRODUCTION**

The current stage in the development of international life in the context of the growing polycentricity of the international community is characterized by global changes in the socioeconomic, political, legal and other spheres of state development. At the same time, the reform of the institutions of state power and self-government naturally led to negative consequences related to the felonious or criminal behavior of state and municipal employees. These unfavorable factors inevitably affected the current state, structure and trends of corruption development at both the national and transnational levels. Corruption has a negative impact on the progressive development of both the state and the private sector as well as the institutions of civil society. As a result, methods of increasing the effectiveness of measures in the sphere of combating crimes of corruption at the international level is actively discussed in special literature [1].

The emerging integration of corruption in the government and other institutions and organizations of various forms of ownership, has actualized activities to investigate the causal complex of this socially negative phenomenon. In this regard, it is worth mentioning the results of the study of the corruption perception index obtained by «Transparency International» [2].

**Table 1 Dynamics of the perception of corruption index based on the results of the studies conducted by «TRANSPARENCY INTERNATIONAL» in 2008-2017**

Year	Corruption Perceptions Index by a group of leading countries according to international audit (position/number of points)	Corruption Perceptions Index in Russia (position/number of points)	Corruption Perceptions Index in the US (position/number of points)	Corruption Perceptions Index by the outsider of the international audit (position/number of points)
2008	Denmark New Zealand Sweden (1-3/9,3) Singapore (4/9,2) Finland Switzerland (5-6/9,0)	Russia (147/2,1)	US (18/7,3)	Somalia (180/1,0)
2009	New Zealand Denmark (1-2/9,3) Singapore Sweden (3-4/9,2) Switzerland (5/9,0)	Russia (146/2,2)	US (19/7,5)	Somalia (180/1,1)
2010	Denmark New Zealand Singapore (1-3/9,3) Finland Sweden (4-5/9,2)	Russia (154/2,1)	US (16/75)	Somalia (178/9)
2011	New Zealand (1/9,5) Denmark Finland (2-3/9,4) Sweden (4/9,3) Singapore (5/9,2)	Russia (143/2,4)	US (24/7,1)	Somalia (183/1,0)
2012	Denmark Finland New Zealand (1-3/90) Sweden (4/88) Singapore (5/87)	Russia (133/28)	US (19/73)	Somalia (176/8)
2013	Denmark New Zealand (1 -2/91)	Russia (127/28)	US (19/73)	Somalia (177/8)

	Finland Sweden (3 -4/89) Singapore Norway (5 -6/86)			
2014	Denmark (1/92) New Zealand (2/91) Finland (3/89) Sweden (4/87) Norway Switzerland (5 -6/86)	Russia (136/27)	US (17/74)	Somalia (174/8)
2015	Denmark (1/91) Finland (2/90) Sweden (3/89) New Zealand (4/88) Netherlands Norway (5 -6/87)	Russia (119/29)	US (16/76)	Somalia (167/8)
2016	New Zealand Denmark (1 -2/90) Finland (3/89) Sweden (4/88) Switzerland (5/86)	Russia (131/29)	US (18/74)	Somalia (176/10)
2017	New Zealand (1/89) Denmark (2/88) Finland Norway Switzerland (3-5/86)	Russia (135/29)	US (16/75)	Somalia (180/9)

It is important to note that a successful anti-corruption policy has been carried out for a relatively long period by, inter alia, New Zealand, Denmark, Finland, Norway, Switzerland, and Sweden. Singapore, Canada, Luxembourg, the Netherlands, Great Britain, Germany also commonly place close to the aforementioned states. Traditionally, the United States of America also places relatively high in the ranking. Therefore, it is advantageous to study and apply the experiences of the high-placing states in the context of, from corruption prevention standpoint, less successful national legal systems in the field of prevention, suppression, counteraction and persecution of corruption.

### **Methodological bases of counteraction to corruption at the international level**

The suppression of international and national corruption requires neutralization of the causes and conditions that feed this social and legal phenomenon, along with minimization of the determinants of corruption. Proceeding from this, the task of fruitful international cooperation of states interested in countering corruption at the national and transnational level is actualized. A necessary element in the fight against international corruption is the universalization of norms combating corruption and their consistent standardization at the national level, ensuring their consistency with international resources pertaining to countering corruption.

However, it is necessary to recognize that this process causes certain difficulties. This is due, first of all, to the fact that different legal systems are characterized by a different level of political, economic and social development. This pluralism is predetermined by the established historical traditions and the variety of approaches to the proclamation of religious, cultural and other values.

It seems that the further development of international relations in the context of the globalization of socio-economic and political-legal processes should be based on the formation of a single legal mechanism to counter international corruption. To this end, it is necessary to unify approaches to the notion of corruption. This process involves the consideration of universally recognized principles that ensure the guarantee of natural human rights.

At the same time, the international anti-corruption mechanism should be based on a combination of international and transnational resources and means of extrajudicial and judicial influence. Taking this into account, the harmonization of legal norms at the interstate level is becoming especially topical. This process will contribute to the consolidation of both criminal law and organizational and practical measures in the field of legal protection of the individual, society and the state against the crimes of corruption [3]. A new impetus for the international community to develop a "new view" of global action in the area of combating corruption involves the development of cooperation through the development of a legal policy that combines a set of legislative, administrative and judicial measures at the national and transnational levels.

To accomplish this, it is necessary to create an effective mechanism for interaction of states to counter international corruption. It is worth emphasizing that in the context of globalization, an important role is played by the establishment of legislative guarantees at the international level. This will solve the above problem through unification and harmonization of the legislation of states in the sphere of counteraction to the crimes of corruption.

Of particular importance is the unification of the main legal terms used in the legal regulation of public relations in the field of combating corruption at the international level. The development of a single conceptual apparatus envisages the establishment of a unified approach to the definition of "corruption", "corruption offense", "corruption crime", "corruption criminal environment", "corruption-related crimes", etc.

When establishing a universal approach to the concept of corruption, one should proceed from a legal assessment of the conflict of interests in the government service. While revealing the legal nature of corruption, it is necessary to emphasize that this socio-legal phenomenon is due to a combination of factors. Among these factors, the behavior of an official who has a special status deserves close attention. This status is related to the exercise of power by the authorities within the context of the institutions and enterprises of state, along with municipal and private forms of ownership. At the same time, this person pursues selfish motives in the conduct to suit personal interests and needs. Proceeding from this, it follows that the legal nature of corruption as a legal phenomenon provides for the offending behavior of an official, taking into account the arisen conflict of interests.

The complexity of solving this issue is due to the variety of approaches to the development of the definition of corruption in international law. As a result, multivariate behavior takes place in national legal systems, characterized by significant differences in the regulation of elements that constitute corruption.

The problem of the definition of corruption in national law lies in the notion within international law that all negative corruption phenomena are designated as "corruption offenses". Therefore, corruption offenses form acts related to the emergence of a conflict of interests, which are subject to sectoral, and, specifically, civil, disciplinary, administrative and criminal liability.

On the basis of a multisectoral approach to understanding corruption in international law in national legal systems, such a phenomenon includes unlawful acts associated with manifestations of various kinds of lobbying for self-interests within government, different organizations and institutions of various forms of ownership, provision of certain rights, benefits, advantages to third parties in violation of the interests of the service; illegal participation of state and municipal employees in the implementation of entrepreneurial activities; bribery, etc.

### **The issue of legal particularism in the fight against corruption**

It should also be borne in mind that the absence in the international legal acts of a unified approach to the definition of corruption has provoked legal particularism in structuring the Special Part of the Criminal Code at the level of national legal systems. This trend has caused a variety of approaches to identifying types of corruption crimes, the qualification of corruption behavior and the establishment of liability. Thus, the emerging pluralism in the legal assessment of corruption caused a variety of crime patterns, significant discrepancies in the classification of criminal-punishable acts related to obtaining and giving bribes, mediating bribery, etc.

Legal pluralism in assessing corruption in the countries of the Romano-German legal system can serve as one of such examples. The German Criminal Code establishes the following types of corruption crimes: deriving profit; the provision of benefits; corruption (being bribed); bribery (giving bribes); remuneration of the arbitrator; the imposition of an unjust verdict or decision; coercion to testify, etc.

The Criminal Code of France regulates liability for offering gifts and presents to a person who has public authority, performs public service duties or is endowed with an electoral mandate with the aim of committing or refusing to perform actions within his powers or abuse his influence to receive from the state or management rewards, appointments, contracts, etc.

In the United States, the Model Criminal Code regulates the liability for gifts to public officials from persons in their jurisdiction; remuneration of a public servant for rendering assistance to private interests on issues under consideration; sale of political support, etc. At the same time, US criminal law delineates bribery, which destabilizes the activities of the administration of power; bribery in the sphere of commercial activity; bribery in the field of trade union activities; bribery, coupled with the activities of sports functionaries.

At the same time, the Penal Code of the PRC reads the term "corruption" to understand the appropriation, fraudulent acquisition or illegal seizure of public property by civil servants with the use of their service advantages. In addition to the corruption itself, the Criminal Code establishes responsibility for bribery (Article 382-396).

The criminal legislation of Japan in chapter 25th - "Crimes of bribery" - distinguishes between abuse of the power assigned by the post by a public official; detention as a result of the abuse of the power assigned by office by a public official; violence or abuse or ill-treatment by a public official; receipt, demand or preliminary receipt of a bribe; transfer of a bribe to a third party; receiving a bribe with aggravating circumstances; receiving a bribe for mediation; giving bribes and giving bribes for assistance, etc.

Thus, it is of practical importance to develop at the international level uniform characteristics of a corruption offense and an offense of corruption, including the criteria for differentiation among themselves at the law enforcement level. It seems that when developing a criminal legal definition of corruption, it is precisely the conflict of interests that should be the basis for a corruption offense.

At the moment, in the context of the growth of international economic relations, it is important to find a solution to the problem associated with the incorporation of different legal systems and families of universally recognized international legal principles in the regulation of legal responsibility of individuals and legal entities for offenses and crimes related to corruption in national legislation.

It should be borne in mind that a variety of approaches to the definition of the typology and the object of corruption has already developed at the law enforcement level. This greatly complicates the implementation of concerted actions to ensure criminal and legal protection of the interests of state power, public service and service in the organs of self-government are secure.

### **Key directions in combating corruption in the context of globalization**

In the important stage in the fight against international corruption, unification of criminal legal means in the field of protecting the interests of state power, public service and service in the organs of self-government should be considered. This implies the universalization of approaches to punitive policies, in particular when establishing the limits and scope of criminalization and penalization of socially dangerous acts in question.

The implementation of different level programs at the national level, taking into account the peculiarities of legal systems, significantly complicates the interaction of law enforcement and law enforcement agencies in terms of combating corruption. Therefore, the development of the organizational principles of international cooperation should be recognized as an urgent problem. Optimization of the main directions of counteraction to corruption crime at the international level requires the centralization of organizational and managerial measures. Close attention should be focused on the protection of witnesses and the rights of actively repenting persons who participated in the commission of corruption crimes [4], [5].

In the prevailing legal realities, there remains a problem of a harmonious combination of measures of political, socio-economic, legal, procedural, investigative and other nature, with measures of information, education, and culture. Thus, in order to combat international corruption, it is timely to collect disaggregated data that would facilitate the awareness-raising campaign and intensify educational activities. An important element of this is the involvement of the media in order to orientationally influence the potential subjects of corruption crimes. The establishment of interaction between state bodies and international organizations in the sphere of combating corruption is also of great importance.

The further development of international cooperation in preventing political and economic corruption actualizes the activities of states in the exchange of relevant information and the adoption of coordination measures on the regulation of the powers of the competent authorities, by both directly ensuring the implementation of the functions of criminal prosecution, and specialized bodies, including financial intelligence units and by allowing to increase knowledge of the management, use and disposal of frozen, confiscated and seized assets.

The implementation of preventive measures is a fundamental aspect in the policy of states to prevent corruption. The key component in this system of measures for the prevention of corruption are measures creating an anti-corruption environment. One of the measures that can be taken to improve the effectiveness of combating international corruption is updating of the Code of Conduct containing measures to ensure transparency in the activities of officials within the competence entrusted to them, as well as establishing procedures for public sector-private sector accountability to civil society institutions and the implementation by officials of the assigned functions based on honesty, integrity, and professionalism.

In order to ensure stability at the global level, it is necessary to recognize the unification of the mechanism for monitoring and supervising the negative consequences of the globalization of international life as one of the most important anti-corruption measures. A significant role should be given to information and communication technologies, which will allow citizens and their public associations to have access to an open and objective assessment of the state of corruption. The use of e-government mechanisms, online platforms, applications for smartphones, mobile phones, social networks, etc. would alleviate some of the problems by allowing to timely report on the facts of corruption.

Creating a sustainable anti-corruption environment requires the development of a qualitatively new approach to the creation of an open civil society by introducing specialized educational institutions to train specialists in combating international and national corruption, implementing public education programs on anti-corruption issues, implementing programs at the level of secondary and higher professional education that promote formation of an anti-corruption world view, and expansion of activities of public outreach organizations.

Therefore, at the international level, special attention should be paid to the harmonization of international, national and subnational law. This will create a single universal model of legal regulation of corruption and develop criminal law measures that are viable and predisposed to reproduction in various socially interactive legal subsystems.

The next stage is the institutionalization of international law standards in national legal systems. Indeed, the regulation of international standards in the field of criminological security is characterized by the complexity of political and legal processes. Therefore, in determining the measures to combat corruption, it is also necessary to take into account the social and economic diversity of the world community.

A legal analysis of the determinants of international and national corruption has shown that the causal complex of this phenomenon includes the negative consequences associated with the change in the level of the population's welfare in the conditions of the internal and global economic crisis, the aggravation of the world demographic situation, and the increase in the rate of illegal migration.

Criminal activation in the sphere of the development of corruption crime is also due to the intensification of reforms in the economic, social and political systems at the national level that provoked a significant drop in the standard of living, the monopolization of economic activities, the leveling of cultural and spiritual values, and the growth of legal nihilism.

It should be emphasized that the international universal principles of combating corruption, taking into account the increased criminal activity in the sphere in question, should not be declarative at the national level.

In the fight against corruption at the national level, greater public control is required. In this regard, the role of monitoring the situation in the sphere of corruption crimes is growing. At the national level, in order to ensure the full and timely detection and recording of crimes in this area, it is necessary to create specialized law enforcement services and a centralized system of operational search units (services) of internal affairs bodies.

One of the priority areas for combating corruption crimes is the development of a set of organizational, legal and procedural safeguards to protect the rights of witnesses and repentants.

An important role in the fight against corruption at the national level is played by the combined efforts of state bodies, self-government bodies, state, municipal and non-state institutions and enterprises, public associations and other institutions of civilians.

The strategy of combating corruption at the national level presupposes the consistent implementation in the national legislation of the norms of international law that facilitate the consolidation of efforts to prevent corruption, unify regulatory and legal procedures and regulate procedures that counteract corruption crimes.

## **CONCLUSION**

Thus, the intensification of socio-economic and political-legal cooperation in the context of globalization has actualized the problem of unifying the legal policy of states at the transnational level. One of the pressing problems is the harmonization of the interstate legal policy in the sphere of combating corruption. A comparative legal analysis of the norms of the criminal legislation made it possible to disclose key issues that impede the effective functioning at the transnational level of a mechanism for criminal legal counteraction of corruption.

Unification of criminal legal means aimed at the formation of unified measures to counter corruption crimes is one of the priority directions of the criminal legal

policy in the context of globalization. To take effective measures to prevent corruption, an international approach is needed to combat this social and legal phenomenon. The intensification of anti-corruption measures at the transnational level requires coherence of legal, socio-economic, informational and other measures in the fight against corruption.

The issue of suppression of the causes and conditions that give rise to corruption, as well as the issue of protection and rehabilitation of witnesses and repentants is being actualized. In the context of the globalization of international life, the strategic components of the legal policy on combating corruption are the consolidation of resources at the international and national levels, the development of transparency of national democratic institutions and the creation of an open civil society.

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# JURIDICAL ASPECTS OF THE SEA BORDERS TERRITORIES OF LATVIA

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## ABSTRACT

The article is devoted to the exploration of problems of the regulatory framework and legal practices of the sea territories of the Republic of Latvia in the international, European Union and national aspects. The activities of the state administration, in particular law enforcement agencies, require specific understanding of the definition of the territory of the country, taking into consideration the differentiation of the sovereignty of the state in the territories of the sea and airspace arising from modern international and European Union laws, and which would not conflict with the most generally defined meaning of the territory Latvia as in Article 3 of the Satversme (the Constitution). The term "national territory" is often encountered in international, EU and national regulatory enactments, including the Law on National Armed Forces, the Law on the State Border of the Republic of Latvia, the Law on Aviation, etc. The territory of Latvia is land, subterranean depths, inland waters, territorial sea surrounded by the state border of the Republic of Latvia, and air space above them 100 km above sea level. In this area, the Republic of Latvia is sovereign and executes its jurisdiction in accordance with international and national laws. Within the boundaries of its territory (in sea territories, also outside the territorial sea), the state exercises its territorial superiority, which is one of the elements of sovereignty. The territory of a country is not only a national border as demarcated land and space segment of the earth and the atmosphere in which the State exercises its leading role, but also the nature with its components - land, water, sky and the depths of the earth, and all the natural resources that are used in the economy and make the country territories material basis. Within the territory of the country the country may use all compulsory powers over their citizens (also for Latvian non-citizens), foreign nationals and stateless persons, unless international agreements define otherwise.

**Keywords:** European Union, Sea territories, State Border, international and national laws.

## INTRODUCTION

The author of this research highlights existing problems encountered concerning the legislation on the sea territories of the Republic of Latvia in the international, European Union and national context. This research is essential since the activities of the state administration, specifically law enforcement agencies involved in border guarding require specific understanding of the legal concepts of the territory of the country. Taking into consideration the different interpretation of the legal concepts there is a need to have precise understanding of the concepts regarding the regulatory framework of the sea borders territories and practical suggestions for specific solutions.

## RESEARCH METHODS

1. Historical method - studying the development of the regulatory framework in the historical context, examining the evolution of the international, the EU, the Schengen acquis and the national regulatory framework.

2. Analytical method - analysing the international, European Union, Schengen acquis and national regulatory enactments (external and internal normative acts), jurisprudence, practice of the Latvian State Border Guard, analysing the essence of several concepts in the legal aspect of sea territories.

3. Comparative method - comparing the concepts of national, European Union, international and neighbouring sea territories, the legal framework for the legal status of the sea territories and the provision of the regime.

Sea border of Latvia is 498 km long and according to the Schengen acquis it is the external border of the European Union. According to their juridical status sea territories are divided into: 1) certain sea territories of the country - territorial sea; sea territories subject to limited national jurisdiction under the rules of international law - contiguous zone, Exclusive Economic Zone, continental shelf; 2) sea territories which are not subject to any national jurisdiction - the high seas.[1].

Under the jurisdiction of Latvia are included **not only internal waters but also territorial sea**, which is also the territory of Latvia [2], including Exclusive Economic Zone [3] in the Baltic sea which is not the territory of Latvia but it has the priority right to use natural resources and it can stretch up to 200 nautical miles. The Exclusive Economic Zone is an area adjacent to the territorial sea, in which, under the United Nations Convention on the Law of the Sea, there is a coastal state's right and jurisdiction [4] and the right to explore, obtain, preserve and use living and non-living natural resources, both at sea and on the seabed and in the subterranean depths, to explore and use the Exclusive Economic Zone according to European Union legislation. The State Environmental Service or other the issuer of a permit (license) in cooperation with the State Border Guard and the National Armed Forces control the use of the sea and the protection of the marine environment. Although Article 3 of the Marine Environment and Protection Management Law envisages rights for Latvia within the continental shelf and the Exclusive Economic Zone the, the control mechanism for the provision of such rights and the delimitation of the competence of the institutions in the Latvian legislation, neither the National Armed Forces law nor the Border Guard Law, where the tasks specific for this field or in another the regulatory framework is still not clearly defined [1].

The United Nations Convention on the Law of the Sea defines exclusive rights for coastal state on the continental shelf (up to 350 nautical miles from the baseline) [4] for exploration and the use of its natural resources, while stipulating that other states have no rights without explicit consent of coastal State to explore the continental shelf and use its natural resources if the coastal state does not do it. However this does not affect the legal status of the waters and airspace over these waters. The United Nations Convention on the Law of the Sea prohibits coastal states from exercising their right to the continental shelf to interfere with the freedom of navigation of other countries [1].

In 2010, the Marine Environment and Protection Management Law came into force. Before the adoption of this law, discussions about deleting the term “continental shelf” from the text of the law were discussed, based on the argument that Latvia does not have a continental shelf within the meaning of the United Nations Convention on the Law of the Sea [3]. However, the term “continental shelf” is retained in the text of the law, although not in the list of terms in Article 1 of the Law, but in Article 3 the definition of the continental shelf is given: “The continental shelf of Latvia..... is the surface of the seabed and the subsoil in the submarine, which is the natural continuation of the terrestrial territory lies immediately after the borders of the territorial sea of Latvia and extends along the border of the continental shelf of Latvia and the Exclusive Economic Zone with Estonia, Lithuania and Sweden [3]. In this wording, this provision is incorrect, as Latvia’s right to the continental shelf is extended to the seabed and subterranean depths located outside the territorial sea of Latvia and therefore does not define the right of Latvia to the part of the continental shelf under the territorial sea, although Latvia should have there even wider rights to explore the continental shelf and to use its natural resources also under the territorial sea, as evidenced by the United Nations Convention on the Law of the Sea, the continental shelf of the coastal state is the seabed and its subterranean divisions located beyond its territorial sea boundaries **throughout the natural continuation of its land area** up to the subterranean boundary of the continent or 200 nautical miles **from the baselines** from which the breadth of the territorial sea is measured [4]. In addition, the natural resources of the continental shelf are the property of Latvia [3]. In the case of the continental shelf, the judgment of the International Court of Justice in the dispute between Denmark and Germany in 1967, which determined not only the main principles for determining the boundaries of the continental shelf of the countries, but also touched on important issues such as the protection of the environment of the oceans and seas, is important [5]. Moreover, Latvia as the European Union Member State must assume responsibility for the implementation of such jurisdiction and can be justified by relevant judicial decisions, such as the Prodest and Aldewereld cases, which emphasize the special relationship of employment law with the legal system of the respective Member State. According to Advocate General P. C. VILLALÓN, the continental shelf, as an area of European Union Member States’ sovereignty, has to be regarded as “the territory of the Union”. The applicability of Community law in the area of competence granted by the Member States to the exploitation of the resources of the continental shelf and the legal position of employed workers cannot be different from that of stricto sensu workers in the territory of the country [6] under Regulation No 1408/71 [7].

Dr. A. Fogels believes that the continental shelf is the seabed and subsoil of the adjacent submarine seabed (including the islands) to the depths of up to 200 meters beyond the territorial seas, or beyond that limit to the point where the depth of the waters permits the extract of natural resources. He further explains that the starting line for measuring the continental shelf is the external border of the territorial sea of the coastal State [2], however such definition is not precise with regard to the first paragraph of Article 76 of the United Nations Convention on the Law of the Sea. A.Fogel’s reference to a depth of 200 meters apparently follows from the 1958 Geneva Convention on the Continental Shelf [8], to which Latvia had acceded in 1991 [1]. However, in the United Nations Convention on the Law of the Sea, this

criterion is no longer used, but it is stated that the **continental shelf does not exceed 350 nautical miles** of the baselines from which the breadth of the territorial sea is measured or does not exceed 100 nautical miles of 2500 m of the isobath (line connecting depths of 2,500 meters) [4]. Consequently, the depth criterion of 200 m is no longer relevant for determining the boundaries of the continental shelf [9]. The 1952 Convention on the Continental Shelf (1958) was replaced by the United Nations Convention on the Law of the Sea where the principle of equal distance (equidistance) is not emphasized as to the delimitation of the continental shelf border, but the United Nations Convention on the Law of the Sea stipulates that states should proceed from all possible sources of international law spectrum, without distinguishing one of them in particular. This does not mean that the principle of equidistance should not be applied by delimiting the boundaries of the continental shelf, but this means that the parties can also rely on other possible arguments [10].

A similar situation is encountered in Latvia's dispute with Lithuania regarding the delimitation of maritime borders. All neighbouring countries, except Lithuania, have concluded agreements on territorial sea borders and the Exclusive Economic Zone. The agreement with Lithuania on the definition of maritime borders, despite long-term negotiations and harmonization of draft agreements, is still not concluded. Prof. J. Bojārs points out that the possible solutions would be, firstly, ratification of the current border treaty by Latvia, while at the same time reaching an agreement on the joint use of oil fields; secondly, resumption of negotiations on the sea border or ad hoc settlement of disputes, as the boundaries of the Latvian and Lithuanian Exclusive Economic Zone and the continental shelf never existed, however, they were set at the level of interdepartmental level in the USSR and have never been challenged [9]. The United Nations Convention on the Law of the Sea states that if the two countries' rivers are opposite or adjacent to each other, then neither country nor the other has the right, unless there is another agreement between them, to extend its territorial sea beyond the median line drawn so that each of its points is equidistant from the nearest points of the baseline, from which each country begins to measure the latitude of the territorial sea. However, the abovementioned provisions do not apply if, due to historically established legal bases or other special circumstances, the territorial sea of both countries needs to be demarcated other than that specified in this Convention [4].

In the author's view, the use of the **Equal Distance Method** is not objective. Each country baseline consists of straight sections, the length of which is not limited to the United Nations Convention on the Law of the Sea. M. Lejnieks points out that the principle of equidistance (equal distance) for the delimitation of the continental shelf (including the Exclusive Economic Zone has not been applied in the current formulation of border agreement [10]. In case of referring to the UN International Court of Justice or Arbitration, Latvia's arguments for fair dispute resolution would be arguments about the historical maritime borders, although they were only up to 4 nautical miles from the coasts, fishing areas, oil and other deep-sea minerals and fish resources explored by Latvia during the Soviet era and as J. Bergholz notes, taking into account historical, geological, geographical and other factors [1].

With regard to the monitoring of the state border, the tasks of the State Border Guard are to protect the state border, border signs and other border structures, to

prevent any attempt to unlawfully change the location of the state border in the area; in cooperation with the National Armed Forces [11], **to prevent and repel armed attacks** in the territory of Latvia, in territorial and inland waters, to prevent armed provocations on the state border; to observe land borders, waters and airspace adjacent to the state border [12]. Foreign vessels have the right to cross the state border and enter the territorial sea, observing **the principle of peaceful passage** in accordance with the United Nations Convention on the Law of the Sea, [13] but the coastal State has the right to determine the shipping regime, customs and sanitary arrangements, organization of transhipment operations, tax arrangements and legal regime in inland waters, as well as enforcing criminal jurisdiction. However, the issue of the collision of two jurisdictions is more complicated in the Exclusive Economic Zone and on the continental shelf, since it is not explicitly regulated in international maritime legislation [1].

The peculiarity of the territorial sea border surveillance, which is very different from land border surveillance, is the possibility of legally crossing the sea border without border checks, that is, if the Latvian sea border is crossed with the aim of crossing the territorial sea of Latvia, observing the principles of peaceful passage. This means that, in fact, the state border is crossed, but border checks are not carried out if a ship sails from the territorial sea of Latvia without calling any port of Latvia. Unlike the land border, where border crossing points are located mostly in the immediate vicinity of the state border, sea borders and border crossing points never coincide, and the ship is present relatively long time in the territory of Latvia, before it is subject to border checks. This further proves the necessity to develop amendments to the Border Guard Law and to give the State Border Guard specific powers in the supervision of sea territories and inland waters under the jurisdiction of Latvia [1].

The **regulations of the Cabinet of Ministers on port formalities** (2012), in contrast to the Regulations on formalities related to the entry and exit of ships from the port (2005), have become a significant consolidating normative act (in total consisting of 121 articles) also regarding the competence of the State Border Guard in ports - port formalities. These regulations define the field of maritime surveillance inside and outside ports, imposes an obligation to inform the State Border Guard about unauthorized persons on board, however it does not determine the rules for staying, moving and operating in the territorial sea and in the Exclusive Economic Zone. Unlike the neighbouring country of Lithuania, which determines the border area (including regime) on the land in the country 5 km from the sea coast, with a sea border much shorter than Latvia, the Law on the State Border (2009) merely states in general terms that the state border regime includes the procedures by which vessels cross the state border, as well as enter and stay in the territorial seas, inland waters and ports [1].

The **Convention on the Facilitation of Maritime Traffic** (FAL-65) [14] is essential for the surveillance of the maritime border. However, with the accession of Latvia to the Schengen Convention, the Latvian sea border has become the external border of the Schengen area, for which more stringent border control is required. Under the supervision of the Territorial Sea [15], special attention might be paid to the legal regime of the contiguous zone [4], which has little attention paid not only in the work of Latvian law scientists but also to the national regulatory

framework, without foreseeing this zone or the respective competences and responsibilities of the institutions [1].

## CONCLUSION

After the research the author puts forward the following conclusions and suggestions.

1. Agreements on the territorial sea border, which is the EU's external border and exclusive economic zone, have been signed with all neighbouring countries, except for Lithuania. The method of equidistance i.e. as the line every point of which is equidistant from the nearest points of the baselines from which the breadth of the territorial sea of each of the two states is measured or equal distance is not a priority of maritime borders delimitation since the base line of each state is determined by each state individually, and, if the base line is formed of straight sections subjectivity increases since the length straight line is not limited by UNCLOS. The Parliament should reject the Latvian and Lithuanian sea border project as inappropriate to Latvian interests.

2. Convention on Facilitation of International Maritime Traffic (FAL) defines the facilitation of movement of people and cargoes, however according to its main goal it is in conflict with the Schengen Acquis, which requires enhanced border controls at the external borders and strengthening of borders status. If an EU Member State establishes its international legal obligations incompatibility with EU law, it must take all necessary steps to eliminate the incompatibilities.

3. In United Nations Convention on the Law of the Sea exists definition as "contiguous zone" which may not extend beyond 24 nautical miles from the baselines from which the breadth of the territorial sea is measured" unfortunately such definition is not included regulatory framework of Latvia. It is necessary to include in law on the state Border of Latvia the term "contiguous zone" in the following formulation – "*the waters of the Baltic Sea in the exclusive economic zone of Latvia within 24 nautical miles from the baseline, where Latvia has the right to the customs, fiscal, immigration and sanitary controls.*

4. The definition of the continental shelf in the Marine Environment Protection and Management Law is unclear, as the rights of Latvia over the continental shelf is applicable to the seabed and subsoil outside the territorial sea border of Latvia therefore there have not been specified any rights of Latvia over a part of the continental shelf beneath the territorial sea. The third article of Marine Environment Protection and Management Law of Latvia needs to be amended as follows "*Latvian continental shelf is the seabed and subsoil in underwater areas as a natural continuation of the territory which is situated in Latvian territorial sea and exclusive economic zone.*" Continental shelf should be regarded as the territory of the EU resources and legal position of workers being employed and it should not differ from employees' stricto senso working in the inland territory of country.

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# TERRORISM IN THE SLOVAK CRIMINAL CODE WITH FOCUS ON PROPOSAL AMENDMENT

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## ABSTRACT

Terrorism currently represents one of the most serious problems. Many countries introduce measures combating terrorism on a national and transnational level. The Slovak Republic is no exception in this regard and as one of the members of the European Union it is also obliged to execute the transposition of the Directive (EU) 2017/541 of the European Parliament and of the Council of 15 March 2017 on combating terrorism and replacing Council Framework Decision 2002/475/JHA and amending Council Decision 2005/671/JHA (OJ L 88, 31 March 2017) (hereinafter as the "Directive") and full implementation of the Additional Protocol to the Council of Europe Convention on the Prevention of Terrorism dated 22 October 2015 (CETS 217) (hereinafter as the "Convention") into its legislation. The author focuses in her article on the analysis of the proposed amendment to the Act No. 300/2005 Coll., the Criminal Code, as amended (hereinafter as the "Amendment"), which shall transpose the Directive and implement the Convention into Slovak legislation. The Amendment represents a major intervention in the Slovak legislation combating terrorism, since it proposes to transform the original element of the criminal offence of terrorism and some forms of participation on terrorism into two individual criminal offences, whereas at the same time it introduces two new elements of criminal offences penalizing specifically financing of terrorism and traveling for the purpose of terrorism. The criminal offence of financing of terrorism draws in part from the objective part of the element of criminal offence of terrorism and some forms of participation on terrorism, which it amends and renews on basis of initiatives from practice. The criminal offence of traveling for the purpose of terrorism and its implementation was required due to the seriousness of the threat which represents to the society committing some of the criminal offence of terrorism and mainly the need to stop the flow of foreign terrorists. The legislator therefore criminalized such acts. The author in end evaluates the potential impact of the mentioned changed to the practice and critically evaluates its positives and negatives, whereas she partially deals with the already adopted the so-called antiterrorist pack by the Act No. 444/2015 Coll., which amends the Act No. 300/2005 Coll., the Criminal Code as amended and which amends certain acts.

**Keywords:** terrorism; Slovak criminal law; criminal offence of financing of terrorism; criminal offence of terrorism; criminal offence of traveling for the purpose of terrorism.

## INTRODUCTION

Terrorism represents an area of criminal law that is currently experiencing an unprecedented development. Thanks to the constantly evolving means of

committing this unlawful act, criminal law has to promptly respond to its new forms. The Slovak legislature has recently dealt with the area of criminal law on terrorism several times. The last adopted amendment concerned the introduction of the so-called anti-terrorist package. In practice, it has been the amendment of several criminal law provisions aimed at the area of terrorism, which strengthened the competences of the police, the Slovak Information Service and other services related to the terrorist threat. This proposal entered into force on 1 January 2016 by the Act No. 444/2015 Coll., amending the Act No. 300/2005 Coll., the Criminal Code as amended and amending certain acts. Its substance was to define directly in the Act No. 300/2005 Coll., the Criminal Code as amended (the "Criminal Code") the criminal offences of terrorism in the provisions of Section 140b. With this exhaustive list, the legislator made it possible to regulate the issue of terrorism in the Act No. 301/2005 Coll., the Criminal Procedure Code (the "Criminal Procedure Code") where for criminal offences of terrorism [2] he made possible to designate the witness testimony in cases of criminal offences of terrorism as non-repeatable acts, if it can be tampered with or become difficult during criminal proceedings. Also the scope of the Specialized Criminal Court as well as the Special Prosecution Office for criminal offences of terrorism have been extended. However, the most significant change may be in the provisions on detention of persons which also affected the constitutional dimensions of the said institute as defined in Article 17 (3) of Act No. 460/1992 Coll., the Constitution of the Slovak Republic, as amended ("the Constitution"). Specifically, for criminal offences of terrorism, the detention period was set up to a record number of 96 hours from the detention. The original legislation allowed for a person to be detained up to 48 hours after the detention. Therefore, dual periods were introduced for the institute, whereas the period of 96 hours shall apply in cases of criminal offences of terrorism, while for other criminal offences the period is 48 hours. In the following text we are dealing with a new proposal from the works of the Slovak legislation regulating the issue of terrorism in the area of criminal law.

## **1. The proposal act in the area of terrorism in general**

Currently, the legislator has in the legislative process, namely at the stage of evaluation of the inter-ministerial comment procedure, a proposal amending and supplementing the Act No. 300/2005 Coll., the Criminal Code as amended, and amending certain acts. The proposal shall fully transpose the Directive (EU) 2016/800 of the European Parliament and of the Council of 11 May 2016 on procedural safeguards for children who are suspects or accused persons in criminal proceedings, the Directive (EU) 2016/1919 of the European Parliament and of the Council of 26 October 2016 on legal aid for suspects and accused persons in criminal proceedings and for requested persons in European arrest warrant proceedings and the Directive (EU) 2017/541 of the European Parliament and of the Council of 15 March 2017 on combating terrorism and replacing Council Framework Decision 2002/475/JHA and amending Council Decision 2005/671/JHA and the full implementation of the Additional Protocol to the Council of Europe Convention on the Prevention of Terrorism dated 22 October 2015 into the legislation of the Slovak Republic. It is important to note that this is a proposal which shall comprehensively deal in the Slovak criminal law with the issue of terrorism that has been absent, since all the international obligations of the Slovak

Republic for terrorism are being taken into account only now [3]. In order to transpose the aforementioned directives and the additional protocol, the legislator chose the method of amendment (proposal act) of existing legislation, namely the Criminal Code, the Criminal Procedure Code and the Act No. 91/2016 Coll., on the criminal liability of legal entities and on amendment of certain acts, as amended by the Act No. 316/2016 Coll. This choice of the legislator can be viewed as positive, because if he chose to execute the transposition of the said directives and the additional protocol by adopting a special law, it would cause considerable chaos in already rather unclear Slovak criminal law.

## **2. Changes in the Slovak criminal law provisions on terrorism**

The most prominent change proposed by the amendment could be the abolition of the so-far the main criminal offence affecting terrorism in the Slovak legislation, namely the criminal offence of terrorism and some forms of participation on terrorism under Section 419 of the Criminal Code. This criminal offence shall be replaced according to the amendment by two separate criminal offences which will deal individually with the terrorist attack as such and some forms of participation on terrorism. In practice therefore, the division of an existing criminal offence into two separate criminal offences occurs, which shall derive their content - the constituent element from the original criminal offence, whereas the legislator according to the general part of the explanatory memorandum to this draft act stated that "*in this context he took into account the problems of application practice, international obligations of the Slovak Republic and the opinions of the professional public.*"[4] The main constituent element can be considered from the point of view of content the criminal offence of a terrorist attack pursuant to Section 419 of the Criminal Code, which constitutes the starting point for the criminal offence of some forms of participation on terrorism under Section 419b of the Criminal Code, the criminal offence of financing terrorism pursuant to Section 419c of the Criminal Code and the criminal offence of traveling for the purpose of terrorism pursuant to Section 419d of the Criminal Code. The starting designation for the criminal offence of a terrorist attach pursuant to Section 419 of the Criminal Code in relation to the other mentioned criminal offences of terrorism results from the definition of objective in its basic constituent element which also applies to other criminal offences of terrorism. This objective is "*to harm the constitutional system or defensibility of the state, disrupt or destroy the basic political, economic or social structure of the state or an international organization, to seriously intimidate the population or to force a government or other public authority or international organization to do anything, omit doing or endure anything being done*" (the "terrorist intent"[5] The stated objective can be considered as the main differentiating feature of the criminal offence of terrorism from other criminal offences. The first newly adopted criminal offence is the criminal offence of a terrorist attack pursuant to Section 419 of the Criminal Code. Its constituent elements read as follows:

"(1) Who intends to harm the constitutional system or defensibility of the state, disrupt or destroy the basic political, economic or social structure of the state or international organization, seriously intimidate the population or force a government or other public authority or international organization to do anything, omit doing or endure anything being done a) threatens to commit or commits an

attack threatening the life or health of a person or his personal freedom; b) destroys, disables or damages public facilities, transport or telecommunication systems, including information system, a fixed platform on continental shelf, energy, water, medical or other important facility, public space or property; c) disrupts, disables or interrupts the supply of water, electricity, or other essential natural resource in order to endanger people to the risk of death or serious injury to the health or endanger the property of others to major damage; d) takes over an aircraft, ship, other means of transport of persons or goods or a fixed platform on a continental shelf, or takes control over such means of transportation or fixed platform or destroys or seriously damages the navigation device or interferes with its operation or communicates false information which threatens the life or health of people, the safety of such means of transportation or endanger the property of others to major damage; e) requires, manufactures, obtains, stores, holds, holds, imports, exports, transports, ships, supplies or otherwise uses an explosive, nuclear material, firearm, nuclear, biological, chemical or other weapon, military device or material of similar nature or does research and development of a nuclear, biological, chemical or other weapon or military device or explosive; or; f) endangers people at risk of death or serious injury to the health or property of other people to the risk of major damage by causing fire or flood or harmful effects of explosives, gas, electricity or other similar dangerous substances or forces or commits a similarly dangerous act, or such danger increases or hinders its aversion or mitigation, shall be punished by imprisonment for twenty to twenty-five years or by imprisonment for life.

(2) The offender shall be punished by punishment imprisonment for life if he commits the criminal offence referred to in paragraph 1 a) and causes serious injury to several persons or the death of several persons; b) on a protected person; c) against armed forces or armed departments; d) as a member of a dangerous group; or e) in a crisis situation." [6]

The criminal offence of a terrorist attack consists of two constituent elements, whereas in paragraph 1 of Section 419 of the Criminal Code basic constituent element is expressed and in paragraph 2 of Section 419 of the Criminal Code the qualifying constituent element. The legislator besides the specification of the objective used also in other criminal offences of terrorism also included the first part of the original constituent element of the criminal offence of terrorism and some forms of participation on terrorism pursuant to Section 419 of the Criminal Code. The object of this criminal offence is to prevent terrorist attacks. The legislator defined the objective aspect of the constituent element of the criminal offence by fulfilling the terrorist intent committed by one of the exhaustively listed methods stipulated in points a) to f) of Section 419 (1) of the Criminal Code. Exhaustively listed ways of committing of the criminal offence include not only a threat (result of threat) but also a disturbing result. Under the result of threat can be classified the letter a), under which the offender threatens to commit an attack on life, health or personal freedom. Under the disturbing result of the exhaustively listed ways of committing may be include letters a) to f), where the harmful (disturbing) effect of a criminal offence in the form of committing an act which endangers life or health has already occurred; the destruction, disabling or damage to public facilities; disruption, disabling or interruption of the supply of the essential natural resource (water, electricity etc.); takes over an aircraft, ship or other means

of transportation; manufactures, handles or requires an explosive, nuclear material, nuclear, biological, chemical or other weapon; puts people at risk of death or serious injury to health etc. From a subjective constituent element, it is an intentional criminal, specifically a direct intention expressed by the phrase "intends to". The subject is a general subject, i.e. a person at the time of committing the criminal offence is sane and older than 14 years.

The second new criminal offence is the criminal offence of some forms of participation on terrorism pursuant Section 419b of the Criminal Code. It consists of two basic constituent elements, which read as follows:

"(1) Whoever publicly encourages the commission of any of the criminal offences of terrorism in a way which defends or justifies the commission of such an act and causes the danger of committing it, shall be punished by imprisonment for three to ten years.

(2) Who a) acquires knowledge of methods or techniques or acquires skills for the manufacture or use of explosives, firearms, nuclear, biological or chemical weapons or other similar harmful or dangerous substances for the purpose of committing any of the criminal offences of terrorism; b) provides knowledge of methods or techniques for the manufacture or use of explosives, firearms, nuclear, biological or chemical weapons or other similar harmful or dangerous substances for the purpose of committing any of the criminal offences of terrorism; c) requests another person to commit or participate in committing one of the criminal offences of terrorism, shall be liable to a term of imprisonment of between seven and fifteen years" [7].

This criminal offence does not involve a direct terrorist attack as is in the case of the criminal offence of a terrorist attack pursuant to Section 419 of the Criminal Code, but a certain connection is visible, because in some participations (co-operation) on terrorism it is about the forms that usually precede the terrorist attack. The legislator chose the path of two separate basic constituent elements in which he divided the various forms. In the first constituent element of the criminal offence he deals with the incitement to terrorism, whereas it must be a public [8] incitement pursuant to the provision of Section 122 (2) of the Criminal Code. The second constituent element is dealing with the so-called "preparation" for the commission of a terrorist attack consisting in the acquisition and provision of knowledge for the production of various weapons and in the request of another for committing or participating in the commission of terrorism. The object of this criminal offence is to prevent individual forms of participation on terrorism for protection against terrorism. The subjective constituent element consists of intentional fault. The subject is a general subject. It is important to point out that the legislator has taken into account while imposing the criminal penalty the fact that in this criminal offence, it often can only be a verbal attack in the form of incitement or approval, but also considered the seriousness of creating the danger of committing the criminal offence. It is therefore the determination of a very wide scale of the penalty rate, where in paragraph 1 of the Section 419b of Criminal Code it is difference of 7 years as to paragraph 2 of the Section 419b of the Criminal Code.

The third consecutive newly adopted criminal offence is the criminal offence of financing terrorism pursuant to Section 419c of the Criminal Code. This criminal

offence consists of two basic constituent elements and one of qualifying constituent element of a criminal offence. Its proposed wording is as follows:

"(1) Who, by himself or through another, collects or provides directly or indirectly things, financial or other means for a person who is involved in the preparation, attempt or commission of any criminal offence of terrorism, for a terrorist group, its member, or for the commission of any of the criminal offences of terrorism or collects financial or other means with the intention to be used in such a way, shall be punished by imprisonment for five to twelve years.

(2) In the same way as in paragraph 1, a person who, by himself or through another person, provides things, financial or other means to a close person of a person who participates in or participated in the preparation, attempt or commission of any of the criminal offences of terrorism, for participation in such proceedings.

(3) By imprisonment for ten to twenty years an offender shall be punished if he commits the offence referred to in paragraph 1 a) to a greater extent, or b) as a member of a dangerous group." [9]

The object of this criminal offence is the protection of society, individual and the state from committing terrorism in the form of preventing its support from a financial point of view. The objective part of the first constituent element of the criminal offence is the unlawful act of the offender by financing terrorism, either by collecting, providing directly or indirectly, through an intermediary or alone financial means or other means intended to commit any of the criminal offences of terrorism. The second constituent element of the criminal offence also determines that it is criminal if someone provides financial or other means to a person who is a close person to a person who intends to commit one of the criminal offences of terrorism. The subjective constituent element is expressed in an intentional form of culpability, whereas in the first constituent element of the criminal offence is a direct intent (by the phrase "intends to") and in the second constituent element of the criminal offence is an indirect intent. The subject of this criminal offence in both cases is general, i.e. a person who at the time of committing the criminal offence was sane and of 14 years age. *"Support is provided not only at the time when the person is preparing, attempting to commit or directly committing one of the criminal offences of terrorism, as a sort of form of compensation for the absence of income, but also at a time when the person is not, due to injury or death, financially able to secure their family members. The performance of such support is a significant incentive for a person whose family members it is about, as their security is often better than if they cared for their family members alone. However, the motivation is also for other people who are convinced of the correctness and justification of terrorist attacks, but only because of the fear of later insufficient financial security of their family they hesitate over direct participation in the activities of terrorist groups."* [10] It is important to note that the proposed wording punishes participation in committing terrorism and not providing assistance by close persons, municipalities, interest groups provided that such assistance is not provided in connection with participation on terrorism.

The last newly-adopted criminal offence is the criminal offence of traveling for the purpose of terrorism, which is to be stipulated in the proposed legislation in the provision of Section 419d of the Criminal Code and shall read as follows: "(1) Who

*travels from the Slovak Republic or through the territory of the Slovak Republic to another state for the purpose of committing one of the criminal offences of terrorism, shall be punished by imprisonment for five to twelve years. (2) As in paragraph 1, a person who is traveling from another country to the Slovak Republic for the purpose of committing one of the criminal offences of terrorism shall be punished.*"[11] The criminal offence of travelling for the purpose of terrorism consists of two basic constituent elements. Interestingly, the legislator omitted, or did not want to change the qualifying constituent element of the criminal offence. The objective of this criminal offence is an interest in protecting society, the individual and the state from terrorist attacks. The constituent element as provided for in paragraph 1 criminalises conduct of an offender consisting of traveling from or traveling through the Slovak Republic for the purpose of committing one of the criminal offences of terrorism (the objective constituent element). From the abovementioned, we can conclude that from the subjective aspect of the constituent element it is an intentional criminal offence where a direct intention is specifically expressed using the term "for the purpose". Also, the term "for the purpose" also expresses the original facultative element of the objective constituent element of the criminal offence, which by being expressed in the constituent element becomes an obligatory element of a criminal offence, namely the purpose of the criminal offence. The subject is general, i.e. a person who, at the time of committing a criminal offence, was sane and of 14 years age. The basic constituent element set out in paragraph 2 is the unlawful conduct of an offender who travels from another country to the territory of the Slovak Republic for the purpose of committing terrorism. The explanations for the first basic constituent element of the said criminal offence can be applied to the subject and subjective constitutive element.

## CONCLUSION

Given the seriousness of the threat of terrorism, it is necessary to react to its constant new forms by a legislation in a timely manner, which will reflect its development and provides the state with legal means of combating it, which will consist primarily in the prevention of its perpetration. The Slovak legislator by the abovementioned amendment of the Criminal Code proposes changes thanks to which the necessary implementation of EU legal acts against terrorism will be executed. The proposed changes can be viewed positively not only because of the removal of the nonsensical and ill-formulated original constituent elements of the criminal offence of terrorism and some forms of participation on terrorism pursuant to the Section 419 of the Criminal Code which was the only one to punish terrorism and its replacement by two comprehensively formulated criminal offences as well as the addition of two new criminal offences that affect terrorist financing and travelling for the purpose of terrorism. These criminal offences are primarily preventive measures to prevent terrorism, whereas on the one hand they limit the financial means for committing it and on the other hand, traveling for the purpose of terrorism, for example due to training etc.

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[3] Specifically the following international legal acts from which obligations for Slovak Republic stem: 1) The Convention on Offences and Certain Other Acts Committed on Board Aircraft (notification No. 102/1984 Coll.); 2) The Convention for the Suppression of Unlawful Seizure of Aircraft (notification No. 96/1974 Coll.); 3) The Convention for the Suppression of Unlawful Acts against the Safety of Civil Aviation (notification No. 16/1974 Coll.); 4) The Convention on the Prevention and Punishment of Crimes against Internationally Protected Persons, including Diplomatic Agents (notification No. 131/1978 Coll.); 5) The International Convention against the Taking of Hostages (notification No. 36/1988 Coll.); 6) The Convention on the Physical Protection of Nuclear Material (notification No. 329/2001 Coll.); 7) The Protocol on the Suppression of Unlawful Acts of Violence at Airports Serving International Civil Aviation; The Convention for the Suppression of Unlawful Acts against the Safety of Civil Aviation (notification No. 346/2000 Coll.); 8) The Convention for the Suppression of Unlawful Acts against the Safety of Maritime Navigation (notification No. 175/2001 Coll.); 9) The Protocol for the Suppression of Unlawful Acts against the Safety of Fixed Platforms Located on the Continental Shelf (notification No. 174/2001 Coll.); 10) The International Convention for the Suppression of Terrorist Bombing (notification No. 382/2001 Coll.); 11) The International Convention for the Suppression of the Financing of Terrorism (notification No. 593/2002 Coll.); 12) The International Convention for the Suppression of Acts of Nuclear Terrorism (notification No. 308/2007 Coll.); 13) Council of Europe Convention on the Prevention of Terrorism (notification No. 186/2007 Coll.); and finally 14) the Additional Protocol to the Council of Europe Convention on the Prevention of Terrorism.

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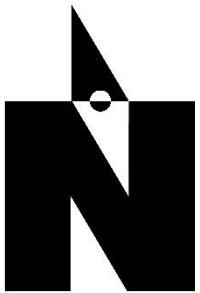
[8] The provision of Section 122 (2) of the Criminal Code reads as follows: "The criminal offence is considered as having been committed in public if it is committed a) through the content of a printed matter or a disseminated written material, through a film, through the radio, television, with the use of a computer network, or using the means of similar effect, or b) in the presence of more than two persons."

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Section POLITICAL SCIENCES



## DIACHRONIC PERSPECTIVE OF THE STATUS OF WOMEN IN ISRAELI POLITICS: SOCIAL-HISTORIC REFERENCES AND EXPLANATIONS

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### ABSTRACT

There is no question that the women's struggle for the right to vote and be elected, was a cornerstone of the establishment of Israel's young democracy. Yet, after the declaration of principles for women's suffrage was affirmed at the Zionist Congress in 1899, women's struggle for political equality, and the subject of their representation in the institutions of power in Israel, was not yet over and remains very much alive till this very day. Furthermore, one significant development in the direction of democratization in Israel that took place during the 1980s – namely, transferring the candidates' selection process for the major parties to the Knesset from the organizing committees to the electoral bodies – did not particularly improve the status of women in politics in Israel. This organizational change did, however, lead to changes in the profile of the Israeli politician (whereas the old model of a politician was Ashkenazi, a veteran, someone from the center of the country and a man; since then a large group of immigrants from Asia / Africa, the children of immigrants and people from the periphery have entered the upper echelons of the parties), but for the most part the characteristic of the Israeli politician remains male.

This article reviews the issue of women in Israeli politics from a diachronic perspective; presents the fundamental sociological reasons for the current situation and finally examines what can be done about it.

**Keywords:** *Women in politics, young democracy, democratization, women's suffrage.*

### INTRODUCTION

History of the status of women in the Zionist political establishment

As early as 1899, the Zionist Congress recognized the right of women to be elected to the emerging Zionist organizations. At that time, this right was not yet customary even in the most reformed Western countries: for example, in Denmark women were given the vote in 1915; England and Sweden in 1918; Germany in 1919 and in the United States not until 1920.

Despite the radical / revolutionary nature of the Zionist movement, changes in social and national attitudes with regard to women were not translated in kind, and they did not share in the Zionist leadership. There was not even one female representative at the first Zionist Congress, and the few women who did attend the Congress were escorting their husbands or fathers. Describing his impressions of the Zionist Congress, Sholem Aleichem wrote: "Much would have been detracted from the Jewish Parliament if not for the participation of beautiful Jewish women,

true daughters of Zion . . . G-d created them to decorate, to beautify, to adorn and to glorify our lives . . . they look like colorful flowers in our Jewish garden, and they provide our Congress with a special charm. What a shame that none of them wants to or is capable of performing on the podium." [3].

According to Elboim Dror [3], at the time when the Zionist Organization was leading the progressive classes - at least with regard to granting women's suffrage - things were different in the renewed settlement in Israel. When Menachem Ussishkin arrived in the Land of Israel in 1903 to establish "the Israeli Organization", opposition arose among the ultra-Orthodox to granting women's suffrage, contrary to opinion of the delegation of the Odessa Committee of Hovevei Zion (Lovers of Zion). Ussishkin surrendered, and the women did not participate in the elections. The question of women's suffrage rose again after the First World War, during the formative meetings prior to the elections for the assembly of representatives held in 1920. The objection of the ultra-Orthodox to granting women the right to vote, which won the support of Rabbi Kook, also pushed the middle eastern Jews to more extreme positions, until a compromise was reached, according to which the ultra-Orthodox voted in separate polling-booths.

The European liberal world of ideas, which led the Zionist Federation at the start, came up against a brick wall in the Land of Israel, where most of the inhabitants during the relevant period were members of the "old settlement" (Jews who had been living in the land of Israel long before the Zionist movement). However, in 1926 the continued struggle by women from different ends of the political spectrum led to a decision by the General Assembly affirming "equal rights for women in all aspects of life in the 'yishuv' (Hebrew settlement) - civil, political, and economic". This declaration was legally validated by the Mandate Government in 1927, but its implementation required many years of struggle [3], [4], [9].

Until the establishment of the State - and throughout the entire British Mandate period (1920 - 1948), the Assembly of Representatives was the elected parliamentary body of the Jewish community in the Land of Israel. Deputies to the Assembly of Representatives were elected on the basis of national / proportional party elections. The representation rate for women throughout the period did not exceed 12%. The Assembly of Representatives, which was a sort of legislative body, elected the National Committee - the executive body which conducted the affairs of the Jewish community in Israel and represented the community versus the British rule until the establishment of the State. After the UN resolution on the partition of Israel, and prior to the Declaration of Independence on the establishment of the State, a National Council was established, from which a selected body was elected, known as the "People's Administration". The Council had 38 members representing the Settlement in Israel and members of the Zionist movement, thirty-six men and only two women: Golda Meir and Rachel Cohen-Kagan. After the Declaration of Independence of the State of Israel (5<sup>th</sup> of Iyar 5708, 14.05.1948) the People's Council became the Zionist Commission and the National Council became provisional government. There was not one single woman among the members of the provisional government.

In accordance with the Declaration of Independence, elections were held for the Constituent Assembly during the month of Tevet **5709** - January 1949. That was

when the residents of the State of Israel went to the polls for the first time to elect their representatives. On the 17<sup>th</sup> of Shvat 5709 the Constituent Assembly became the first Knesset (Parliament) of Israel. In the first Knesset, women accounted for only about 9% of its elected officials. During the first Knesset there was only one Minister - Golda Meir served as Minister of Labor and the People's Insurance (later to become the National Insurance Institute).

**Table No. 1:** *The relative share of women in the Israeli Parliament*

Knesset (Parliament)	The number of women in Knesset (excluding partial terms and male rotation)	The rate of women out of the total number of members of Parliament (in percentages)
First	<b>11</b>	<b>9.1%</b>
Second	<b>11</b>	<b>9.1%</b>
Third	<b>10</b>	<b>8.3%</b>
Fourth	<b>9</b>	<b>7.5%</b>
Fifth	<b>10</b>	<b>8.3%</b>
Sixth	<b>9</b>	<b>7.5%</b>
Seventh	<b>8</b>	<b>6.6%</b>
Eighth	<b>10</b>	<b>8.3%</b>
Ninth	<b>8</b>	<b>6.6%</b>
Tenth	<b>8</b>	<b>6.6%</b>
Eleventh	<b>10</b>	<b>8.3%</b>
Twelfth	<b>7</b>	<b>5.8%</b>
Thirteenth	<b>10</b>	<b>8.3%</b>
Fourteenth	<b>9</b>	<b>7.5%</b>
Fifteenth	<b>14</b>	<b>11.6%</b>
Sixteenth	<b>18</b>	<b>15%</b>
Seventeenth	<b>17</b>	<b>14.2%</b>
Eighteenth	<b>21</b>	<b>17.5%</b>

The data are a sample from the government information site:  
<http://www.knesset.gov.il/mmm/data/pdf/m02446.pdf>

Last Knesset: 12th of June 2014

A review of the table above shows that in the years following the establishment of the first Knesset and through to the Fifteenth Knesset, the majority of the Knesset

plenary contained even fewer women than those in the first Knesset. True, Israel is one of the few countries in the world whose government was led by a woman - Golda Meir (1969-1974). This served, at the time, as an argument justifying Israel's image as a pioneer of equality between the sexes; but now it is clear, beyond any doubt, that Golda Meir's achievement was an extraordinary phenomenon, and there have been Israeli governments which served without any women Ministers whatsoever. It is important to note in this context that precisely during Golda Meir's term as Prime Minister there was neither a female Minister nor a female Deputy Minister appointed.

**Table 2** Sample ranking of countries according to the number of women in Parliament

*Rate of women parliamentarians altogether*

Place in the ranking	Country	The ratio of women parliamentarians altogether, in percentages
1	Rwanda	63.8%
2	Andorra	50.0%
3	Cuba	48.9%
53	Iraq	25.3%
66	Israel	22.5%
71	Greece	21.0%
84	United States	18.3%
149	Qatar	0.0%
"	Micronesia	0.0%

\*The data for this table were taken from the database of the Inter-Parliamentary Union (IPU) which was dependent on the information received from the national parliaments of the countries. The list presented is partial. For the complete list see <http://www.ipu.org/wmn-e/classif.htm> the last entry being 13 July 2014

\*\*In countries that have a two-house parliament the data refers to the lower house only.

This data from around the world is not very complimentary to Israel despite its trending improvement in female representation. Israel is in 66<sup>th</sup> place regarding

female representation in its parliament. Rwanda is ahead of Israel by a large margin with 63.8% representation. Cuba and Angola are also ahead of Israel. Enlightened USA actually trails Israel, even though female representation is recently making headlines due to the candidacy of Hillary Clinton for the office of President.

Trending improvement in female representation in parliaments is not unique to Israel. By the end of 1977 only 13 countries could boast that at least one fourth of their parliament was composed of women. By April 2013 the number of countries whose parliaments were one fourth women was 49. This improvement was not only because of social and cultural transformations but also, as we shall see in part four, because of the adoption of representation quotas[10].

Sociological explanations regarding the status of women in current Israeli politics

Sociologists dealing with the shaky situation of women in Israeli politics offer a variety of explanations when attempting to explain the meaning of the phenomenon. Amongst the many explanations offered there are four that are fundamental:

1. The nature of the traditional religious norms prevalent in Israel
2. The centrality of security issues in Israel
3. Ambivalent messages put forward by educators
4. Activities of male dominated centers of power in Israel

The first explanation analyzes traditional and religious norms as they pertain to women in society [7]. According to the authors, every stage of a woman's life in Judaism is based on her status as a passive persona – as a virgin, as being engaged and as an aguna (unable to remarry because her husband refuses to grant her a divorce). Even the compassion demanded by Judaism for widows and orphans highlights the powerlessness of the woman. She is devoid of all ceremonial religious duties, with the exception of lighting the Sabbath candles. She cannot be counted as part of a Minyan, is not qualified to recite the Kiddush, to read from the Torah in synagogue or to be a witness before the Rabbinate, the Sovereign or the Courts. It is a very short way from here to reach the generalized conclusion that she is not worthy to fulfill public duties in general and governmental duties in particular.

This explanation is supported by the conduct of the Haredi (ultra-orthodox) parties, who have always prevented women from holding any leadership positions. Take, for example, the election of Golda Meir to Prime Minister representing the Labor Party: the religious parties agreed to be part of the coalition government only after they got approval from the rabbis. And even now, as I write these lines, the Haredi parties deny women entry into their ranks. Such tendencies have clear and direct consequences regarding not only the representation of women in Haredi parties, but also indirect consequences regarding the participation of women in various coalition governments that require the participation of the Haredi factions.

The second explanation lays the blame on the centrality of security issues which arise on the public agenda almost on a daily basis, and which more than anything else are identified with the maleness of the security establishment. In this

connection we can envisage a flowchart the purpose of which is to denote accepted areas for female personnel in the army. Accordingly, women do not serve in combat units, do not serve in reserves, and their tour of duty is shorter than that of their male counterparts. As a consequence, structural inequality is created in regards to their assignments, their training and their advancement in the army. This causes gender segregation in civilian frameworks, which view a military career as a prerequisite for success [5].

According to the military service law (Para. 16a – every woman has equal rights to a man in any job having to do with military service) female soldiers can fill a variety of combat and support combat roles such as: flight controllers, simulation instructors, computer officers, paramedics, search and rescue, combat material operations, and more. However the leading roles in a military career are still off limits, and in the higher echelons of command men still have a leading role. Only in 2011 was a woman finally promoted to the rank of general, when she was appointed commander of the human resources division.

The third explanation regarding the predicament of women in politics lays blame at the feet of the agents of education who reinforce stereotypical female images which, in the end, damage the abilities of both women and men to accept women as political figures. An analysis of stereotypes in Israeli textbooks [2], [8], reveals that boys are described as active, resourceful, initiating, clever, curious, brave, and adventuress. Girls, in contrast, are shown as passive, submissive, pretty, maudlin, and helpless. The list of male occupations is long and very detailed. Most of them can be categorized as molding ones environment, creating and controlling material and people. Female occupations are very limited. Women in most cases are mothers, grandmothers or wives. Describing women in a professional capacity is most rare and if done at all is mostly in professions that are traditionally described as women's professions: teacher, nurse or kindergarten teacher.

According to Herzog [6], the political socialization process impairs the aspirations of women to get involved in politics. Women are educated from an early age regarding social expectations: how to fill their feminine roles, what normative ambitions are acceptable, how to divide time between home and career, in what areas they are expected to find fulfillment and what areas are described as completely unfeminine. These kind of unwritten expectations are not compatible with political activity which is mostly perceived as achievement-oriented and competitive, and based on the desire for power and control.

The fourth explanation for the dilemma of women in politics assumes that male centers of power in society that operate in ways to duplicate and reproduce the existing situation are the stumbling blocks to female mobility in politics. These explanations, which are Marxist in essence, describe a system of ruled and rulers: the rulers – those who control the infrastructure – also impose their values and ideas, the entire purpose of which is to justify their rule and to present them as objective ironclad principles. Respectively, since men from the outset 'man' key political positions in the public sphere in general and in the party hierarchy in particular, and as such are interested in maintaining the existing situation that is favorable to them, the mobility of women is impeded and they are unable to breakthrough to leadership positions as if there were a glass ceiling over their heads.

Whatever the accuracy of any of these explanations, the phenomenon must concern anyone who wishes to live in a progressive democratic society. Since women in Israeli society constitute a little more than half of the population (51%) their absence from positions of power and influence constitutes a serious flaw in democratic representation.

Women not only find it difficult to achieve appropriate representation in various official new and legacy frameworks, they also fail to establish women's lists that are attractive for the electorate: this at the same time that various parties in the Knesset represent and have represented various sectors of the population according to ethnic group and class, yet there is no comparable representation for women. The Women's List that was founded in 1997 ran for the Knesset, but also failed.

### **How to overcome the low representation of women in Israeli politics?**

One way to overcome the poor representation of women is for the Knesset to establish a quota. A minimal quota is one way to increase female representation in politics in general, and in parliament in particular. In the 90s especially this method became widespread globally and was so efficient in achieving this goal to the extent that some have branded it "quotas fever".

These quotas strengthened the perception that the political abilities of women are no less than those of men; rather that their abilities are pushed to the margins and cannot be realized in a political system controlled for the most part by men. As of today, more than 30 countries have established representational quotas for women in elections to the national parliament, either by way of amending the constitution or by way of special election laws. In more than 50 countries, representational quotas for parliamentary elections were expressed in the internal rules of the parties themselves [1].

The first step taken in this direction was a law passed by a preliminary vote in the Knesset in 2005, which proposed that parties whose Knesset factions are composed of at least 30% women will receive additional funding of 50% for every woman elected. This law passed by a margin of 53 for and 22 against with 4 abstentions. The relatively large number of those opposed bears witness to the fact that the quota system as a way to correct the distortion of lack of female representation in the Israeli political system has not been fully accepted.

Another approach is proactive action on the part of women's organizations seeking increased awareness of the poor representation of women in Israeli politics and as a consequence want to repair the current situation. Over the past decade, in addition to the ongoing activities of the "Women's Lobby", the Emuna movement (religious women) began to conduct intensive seminars concerning women in politics, with the aim of raising the consciousness regarding their status in politics. "WIZO Israel" initiated an information campaign to promote women in politics under the banner "This Time We Vote Women". The aim was to get women to register, to vote and to be elected within the various parties, according to their own political preference. This was not limited to internal activity in Israel: in 2005, Israeli women's organizations presented the United Nations with shadow reports describing the pathetic picture of lack of women's progress in the public sphere.

The reports were given to the World Committee of the UN dealing with women as alternatives to the official reports provided by the state institutions [11], [12].

## **CONCLUSION**

The women's struggle for their rights to vote and to be elected has, without a doubt, been vital for the building of Israel's young democracy. However, since the statement of principles of women's right to vote and be elected was ratified in the 1899 Zionist Congress, the struggle for women's equal political rights and the issue of female representation in the power centers of Israel still continues.

Only in the 90s, did the Israeli public become conscious and the political elites begin to understand the need to increase equality between men and women. As part of the process in which the consciousness of liberalism and equality within various strata of society became stronger, Israeli society became aware of the desirability for affirmative action, the aim of which would be improving the status of women by way of constitutional and legal means designed to guarantee not only the opportunity for women to be appointed to public office, but to be appointed in actuality [13].

Female representation means, in point of fact, more women candidates and more voters for them on both the national and the municipal level. Wider representation increases the chances that women will influence decisions that affect their lives such as discrimination in the areas of income, resources for daycare centers, maintaining women's rights at work and in other organizations. These and others will receive greater validation in the public discourse when more and more women occupy key political positions.

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# MEDIA CONVERGENCE IN PUBLIC BROADCASTING COMPANIES IN EUROPE. DELPHI STUDY

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## ABSTRACT

This article presents the results of a Delphi survey of 45 experts about public broadcasters in Europe. The starting point of the survey is the unsatisfactory theoretical discourse about the construction of convergence. The findings show what media convergence currently means for planning and journalist players in public media organisations in Europe and in the future. As part of a three-stage Delphi survey, experts from the fields of “Innovation management/Corporate planning”, “Editorial management/Department leadership” and “Science/Research” took part in an anonymous group discussion with a feedback loop. Using a “most different systems” design, Germany, Austria, Slovenia and Hungary were screened as media environments for this study.

In a pan-European overview, the panel views the technical sector as the most important driver of media convergence at the moment. Aspects of use and particularly regulation of convergence will become more significant at the end of the ten-year period reviewed. Public providers then generally aimed to represent their contractual fixed added value by focussing on news-related and regional programmes, own apps and digital platforms became standard outputs.

**Keywords:** *Media Convergence, Public Service Media, Public Service Broadcasting, European Dual Media Systems, USP Public Service Media*

## INTRODUCTION

Our everyday life is the everyday life of the media. We consume content whenever and wherever we want via whatever channels we find it on. In this respect, the boundaries between different types of media have been becoming increasingly blurred for some time now. There are multiple reasons for this media convergence, as it is called – technical, legal and economic, but also equally editorial reasons. Changes to established media landscapes and their description are severe, diagnoses Andy Kaltenbrunner: “We are re-defining the media sector as a result of convergence processes” [1]. Research findings and classifications are supposed to reach the users via different output channels, sometimes in almost identical versions, at other times sufficing as variously edited and traditional representations of forms specific to different types of media (radio, television, online, etc.).

Public service broadcasters (PSB) in Europe above all are leading the way with regard to the future of media convergence. They frequently have at their – proximate – disposal financial resources, and their public service remit binds them to innovation. [2] While private broadcasters in general have their eye on the costs and profits, and tend to undertake convergent experiments rather cautiously, public service providers are resorting to looking for the ideal ways to interweave media.

They are currently doing so without really being able to anticipate if “tri-mediality,” “cross media,” “trans-mediality,” “multi-mediality,” etc. will generate significant savings potential, bind (new) audiences more closely and make established types of media obsolete. Using the obvious synergy effects, the first joint steps are being taken beyond the boundaries of the different types of media, above all in the area of current affairs. PSBs would see themselves forced to leave their traditional engagement in “push” communication and seek alignments with today’s interactive, multimedia world, Karel Jakubowicz explains and proposes a switch in terminology: “The concept of Public Service Media (PSM) can be briefly summed up as ‘PSB + all relevant platforms + Web 2.0’, representing a technology-neutral definition of the remit” [3].

What might sound very unstructured, is rarely so. Fontane’s “broad field” still applies to attempts at media convergence. This is due to a lack of much practical experience, but also equally to a secondary literature whose terminology is often diffuse and usually based on the analysis of individual examples focussed solely on Western Europe and the USA. This may appear to be a dilemma, but is also a spur to have a closer look at the fundamental principles of the phenomenon of “media convergence”.

This paper shows the results of a Delphi survey of 45 experts about public broadcasters in Europe. The survey departs from the unsatisfactory theoretical discourse about the construction of convergence. The findings present what media convergence currently means for planning and journalist players in public media organisations in Europe and in the future. As part of a three-stage Delphi survey, experts from the fields of “Innovation management/Corporate planning”, “Editorial management/Department leadership” and “Science/Research” took part in an anonymous group discussion with a feedback loop. Using a “most different systems” design, Germany, Austria, Slovenia and Hungary were screened as media environments for this study of public service media’s role in a converging space and time.

## **1. EMBEDDING IN THE AREA OF RESEARCH**

As an academic overview, much of what media structures wish to describe are generally formulated as succinct summaries. Scholarship in the areas of communication, the social sciences and economics attempt to clarify what effect the global information age is having on each of our media, our communities, and us and to apostrophize the dual role of users as both recipients and (potential) producers. This option of a role reversal draws on numerous individual analyses, since the secondary literature available generally focuses on only partial insights. Works that pursue universal theory and model building are even rarer. Only a few authors venture into a meta-level and propose handy analytical frameworks in order to explicitly differentiate, for example, the technical and economic content as well as the application aspects of media convergence. In describing media convergence, cultural studies approaches focus on overarching schemata regarding “media”, “society” and “change” in the age of globalisation. However, the majority of these approaches are coupled with a small number of intradisciplinary and transdisciplinary trends, the majority of which are inscribed in philosophical-sociological tendencies. [4] Sometimes media and cultural-oriented positions are

merged in order to outline the geography of global media landscapes and to discuss the possible specifics of "Convergence Culture" [5]. Rarely, theoretical findings are subsequently reviewed regarding political and legal real-world conditions. The latter of these look at other disciplines separately, and without making extensive use of cultural implications. "Most of the literature on the media is highly ethnocentric, in the sense that it refers only to the experience of a single country, yet is written in general terms, as though the model that prevailed in that country were universal" [6]. This is justified criticism by both Daniel C. Hallin and Paolo Mancini about an absolutization of Western theorems as well as models for the description of all potential media systematics, which are still monodisciplinary, and being transdisciplinary is noteworthy. [7]

As far as the literature is concerned, finding a balance remains an obvious need. European media systems are rarely covered in terms of media convergence and a multi-perspectival form. They are categorically compared within their overall spectrum just as infrequently. This may seem like a dilemma, but rather, it encourages the exploration of the "media convergence" phenomenon. It is not only theoretical attitudes that must be dealt with, but first, empirical insights must be included in the business planning and journalistic practice field in order to make the present and future relevance of media convergence recordable in a comprehensive way. Particularly within the context of public sector broadcast operators this study is dedicated, per its social financing and programme obligation, to innovation and the importance attached to this by the European Union (EU) and its member states regarding "their" public sector structures. Tarlach McGonagle points to the legislative position and clarifies by saying, "current regulatory and policy approaches to PSB are placing increasing emphasis on the role of PSM in a reconfigured mediascape". He elaborates further, "its engagement must also remain within relevant parameters set by EU law, e.g. rules and guidelines governing State funding for PSB and the relationship between such funding and PSB mandates" [8]. Many of these regulatory frameworks are currently in an exploratory process.

In order to make the conceptually diffuse and de facto dynamic subject area of "media convergence" methodologically manageable, a study system based on Delphi design is recommended.

## 2. METHODOLOGY

### 2.1. The Delphi study system

The study's approach is a three-level qualitative and quantitative survey of experts according to Delphi's design of "How to identify and qualify the views of a group of experts on a diffuse issue" [9] regarding the guiding research question: *What significance does media convergence have for business planning and journalistic parties at the public sector operators in Europe today? How do the parties assess the future relevance of media convergence?*

A preliminary phase with interviews will explore positions on deductive categories regarding the term "media convergence" gathered from secondary literature, as well as an exploration of technical, economic, content, legal, convergence of usage and the public sector operator organisational structure. The open plan of these guidelines allows for the inclusion of additional aspects in order

to have inductive categories. Using the results of the preliminary phase the questionnaire for the standardised Wave 1 will be generated. These findings are given to the panel in an anonymous and uncommented format of group-response feedback. For the subsequent Wave 2 standardised questionnaire, any arguments that are controversial or that were newly introduced in Wave 1 are presented either again or for the first time. The orientation is detailed in the below chart. The section entitled "Implementation" gives a detailed explanation.

**Table 1: Delphi\_Waves procedure**

### **1 Qualitative interviews with experts (preliminaries)**

- *Form:* Guidelines based interview
- *Objective:* Aetiology of topic areas
- *Next step:* Questionnaire development

### **2 Standardised interviews with experts (Wave 1)**

- *Form:* Online questionnaire survey
- *Objective:* Quantitative and partially qualitative assessments showing interim results on apostrophised topics
- *Next step:* Derivation of an anonymous group opinion from feedback plus possible revisions to the questionnaire

### **3 Standardised interviews with experts (Wave 2) per feedback**

- *Form:* Online questionnaire survey (from enhanced Wave 1, abbreviated catalogue)
- *Objective:* Quantitative and partial qualitative assessments on relevant topics
- *Next step:* Analysis of the collected data

### **4 Evaluation**

- Interpretation of the findings
- Feedback to the participants regarding the anonymised results

Source: Weichselbaumer 2018

The "Delphi tool", which is frequently used in the social sciences and has been used in other disciplines, requires careful conceptualisation and operationalisation in its conditional standardisation in order to generate conclusive findings. These findings cannot claim to be representative beyond the group of experts from which they are derived. Nonetheless, the method and accompanying anonymity offers advantages over other interview based or question based techniques. Any answers regarding "social desirability" or certain kinds of dependency within the subject group can be excluded by utilising anonymised feedback. In a public sector environment, in which internal and international contact among potential experts can be considered a given, other anticipated distortions within this methodical procedure may be minimized as much as possible.

#### **2.2. Selection of experts**

With 36 panel invitees, the study invited a sufficient number of subjects for the research project. [10] Relevant experts from public sector institutions, as well as

equivalently high-ranking representatives (such as directors, editors-in-chief, etc.) from the fields of "innovation management/corporate planning" and "editorial management/department leadership" were selected (12 from each group). The first group demonstrated a profound knowledge of future planning content, including project planning, while arguments and forecasts from a journalistic perspective were stronger among the second group. As an external element, experts from "science/research" supplemented the panel, who did intensive work on the topic of convergence and/or public broadcasting in Europe in the interest of communication and media science. Thus, the selection of experts was divided into three groups that each had different primary "types of knowledge" [11]: Contextual knowledge, business knowledge and interpretation knowledge.

**Table 2:** Selection of experts per planned types of knowledge

Expert groups (each with 12 representatives)	Planned types of knowledge
Science/Research	Experts primarily from the fields of media and communication science create ubiquitous theoretical classifications and produce procedural model references, ergo they offer contextually-based knowledge.
Innovation management/ Corporate planning	The internal experts on public providers primarily have informative operational knowledge.
Editorial management/ Department leadership	These <i>de novo</i> experts contribute their interpretation and combine both practical and contextual knowledge in this practice-oriented link.

Source: Weichselbaumer 2018

In order to have a sufficient sample size of experts for the envisaged area of interest, the study had to focus on its individual service and system promotion. A theoretical overview of the media and communications studies approach, albeit in connection with transdisciplinary orientated approaches to media concepts, media genres, media landscapes, media systems, etc., provided parameters for the national relevance of public media.

### 2.3. Location selection of the samples

Utilising a "most-different-systems-similar-outcome" type of access [12], from a population of ( $n = 72$ ), including members of the European Broadcasting Union (EBU) as a value and a cooperative community [13], four public entities were removed. Initially, in order to make potentially convergent items suitable for contrast examination, the criteria included the organisational involvement of the triad Radio, Television, Online group, which fell under an official public umbrella. The existence of a public sector triad such as this one is not a given in all countries. The progressive selection process moved forward against a backdrop of key indices

(Freedom House, Reporters Without Borders, Transparency International) and the scientific explanation was based on common media theory and media system models. It was divided into three categories:

- Characterisation of the environment-based system for media regulation: Minimalist-liberal versus light touch versus client-based [14]
- *Financing*: Dues/ fee versus government grant versus mixed funding
- *Public structure*: Federal versus centralised versus proportional

Based on this grid, the following four samples could be assembled as a set of widely divergent systems: For Germany there was a focus on the ARD (*Arbeitsgemeinschaft öffentlich-rechtlicher Anstalten der Bundesrepublik Deutschland*), or the consortium of public sector broadcasters in Germany, as a definitively federal structure that was endowed through budgetary expenditures with advertising subsidies serving as marginal sources of funding. As part of a light touch media regulation style, the variety of the programming and its composition is strongly influenced by the "three-step test".

The ORF (*Österreichischer Rundfunk*) in Austria is also similar in that it may be associated with the light touch media regulation style, however, it differs in that it has a single regulator. The organisational structure of the ORF, which is primarily sponsored through advertising, is considered to be very centralised. Slovenian RTV SLO (*Radiotelevizija Slovenija*) operates through royalties and advertising/sponsoring on a pro rata basis. The organisational structure is one in which there is a significant core of federal satellite channels, and the traditionally narrow portfolio of programming is a reflection of this. RTV SLO operates in a client-based media regulation landscape. Likewise, Hungary's MTVA (*Médiaszolgáltatás-támogató és Vagyonkezelő Alap*) is also part of this client-based media environment, with de facto centralisation and state financing.

For each national location, there were three experts within each defined knowledge group including ("Science/research", "Innovation management/Corporate planning", and "Editorial management/department leadership"). The Delphi study was divided into a guideline-based first round of interviews, which deduced from the theoretical categories in the preliminary work that was done (definition of terms, technical, economic, content, legal and convergence of use, public organisational structures) and inquired about other essential points. The result was the standardised questionnaire for Wave 1 and the development of Wave 2. The exact sequence is explained below.

### **3. Procedure**

The qualitative preliminary round conducted in January/February 2017 selected a cross-section of 15 of the 36 total participants. One participant from each of the three chosen groups participated at each location nationwide. For the two public-internal groups "Innovation management/Corporate planning" and "Editorial management/Department leadership" three representatives, who work closely with EBU partners in their professional milieus and are therefore appropriate in a EU-level discussion, were recruited from different sample locations. The individual interviews focused on the deductively based topics regarding the definition of terms, types of convergence (technical, economic, content, legal convergence and

usage thereof) as well as on public service organisational structure. Indirectly, additional fields of public legitimacy and future consensus for social systems grew. As per the preference of the participants, the discussions took place in German or English. The two languages were sufficient for the questionnaire.

The standardised Wave 1 was a quantitative online questionnaire with 18 items from the guideline topic discussions deductively set up and inductively collected in the guideline. 30 participants provided assessments between June and August 2017. Future horizons that were to be assessed were divided into two parts. Assumptions were made for the next two to five years, and forecasts for the time span of six to ten years were treated differently. This enabled potential trends and disruptions to be accounted for. Without assigning weighting and in anonymous format, the results of Wave 1 were included in a feedback sheet that was made available to the whole panel before the creation of the questionnaire for Wave 2. Wave 2, (from August to September 2017) which was also standardised, indicated 10 items within the topics of definition of terms, types of convergence (technical, economic, content, legal convergence and usage) as well as public organisational structures, legitimacy and regulation. Thus, the second questionnaire was evaluated by the experts in Wave 1 either as contestable points or as requiring additional or repeated elements. 22 volunteers participated in this round, who would be queried again at intervals of two to five and six to ten years in the future.

#### **4. Methodology evaluation**

The option of a non-response answer for the field, "I do not know" for a specific question, as well as the possibility of self-assessment per one's professional background (corresponding to the demonstrated methodical expert groups), expertise in the different convergence areas, (technical, economic, content, legal, convergence usage) and knowledge of national media environments of the given sample, all served to ensure a discussion at the highest possible level. The majority of interviewees were transparent regarding their knowledge in these areas.

It was not possible to maintain the plan of keeping the panel consistent over all three phases - initially as a cross-section in the preliminary round and then combined in Waves 1 and 2. Few participants had to be recruited over the course of the study. In a multi-stage Delphi procedure, the panel attrition rate and the time availability of the experts should be taken into account methodically and in the analysis. Again, it should be reiterated that a Delphi study does not ultimately claim to create a generalisation, but rather it allows the opinion within an expert group to be put forth.

#### **5. RESULTS AND DISCUSSION**

Based on the entire panel, 17 theses were collected to create a conceptual definition, technical, economic, content and legal convergence, those of usage, public organisational structure, legitimacy and a "USP (Unique Selling Proposition) public sector operators". In most cases, the assessments gathered from the groups "Science/Research", "Innovation management/Corporate planning" and "Editorial management/Department leadership" were not clearly divisible from one another. In many cases, the CVs and the experts' fields of knowledge meshed: Public-sector journalists and managers who worked in similar areas at a university, or academics who had journalistic experience before their scientific careers.

On the other hand, in the areas of "legal convergence" and "public organisational structure" in particular, the differences were quite noticeable. First and foremost, rigorous evaluations of the respective national implementations of EU framework directives were done, and less frequently, these were examined at a pan-European meta-level, e.g., the topics of "technical" or "economic convergence". At the same time, particularly internal test subjects closely linked the public organisational structure to the corporate culture of ones' employer. The theses from the Delphi survey will be discussed in a condensed form.

Thesis 1 ("Definition"): "Media convergence" is useful as a conditional and flexible semantic concept in order to describe a complex phenomena in transition. However, even here this dynamic requires clear positioning and the naming of reference objects.

Alternative levels of abstraction allow for the term to be sufficiently malleable.

Thesis 2 ("Definition"): Over a two to five year time period, "technical media convergence" is the most noteworthy factor, other than "Legal convergence/Regulation", in terms of media changes in Europe. In the longer term, the latter category will overtake the former and become a decisive factor. "Convergence of use" will also take precedence over "technical convergence". "Convergence of content" fails and is deemed to be controversial in its meaning.

Thesis 3 ("Technical convergence"): Linear and non-linear offerings should be considered two separate phenomena each with their own specifications, which must fall under the jurisdiction of the European public sector and not only in cases where the programming mandate includes the general public as an audience. The volume of programming is still notably expanding in a non-linear manner, recalling the convergence in terms of usage factor.

Thesis 4 ("Technical convergence"): Based on multimedia focused academic and in-company training, public broadcasters in Europe will have to develop experts for individual channels and formats in addition to all-rounders. Newcomers are still possible.

Thesis 5 ("Technical convergence"): Europe's public sectors explore technical orientation and updates, primarily in the form of an exchange, be it in the EBU network or bilaterally. In addition to cooperation with entities in the open economy, cooperation with government agencies provides significant technical potential for creation.

Thesis 6 ("Economic convergence"): Media convergent processes will slightly increase production costs in the public sector in the next two to five years, or remain as they are currently, but over the next six to ten years they will decrease. Start-up financing, reconfigurations, changes in product and platform portfolios, and technical acquisitions have an impact at present, but this impact will be reduced by the end of the decade.

Thesis 7 ("Economic convergence"): With the intention of both preserving things that are tried and tested and also trying new things, Europe's public providers will seek to maintain established channels of access, while keenly striving to grow and expand alternative platforms and independent digital brands. Personnel and production costs are lowered in this pecuniary countermove and license and legal purchases are reduced, as are event reporting (sports, shows, etc.) and certain productions (film, experimental radio, etc.)

Thesis 8 (“Economic convergence”): Europe's public sector operators will seek funding through contributions or device-based fees. A small expansion of advertising income is to be assumed, if anything, a tertiary exploitation or programme revenue. State subsidies remain controversial and the public sector will not claim a reported tax requirement.

Thesis 9 (“Content convergence”): Over the next decade, public sector organisations in Europe will determine their multimedia departmental and editorial content. In this process, guaranteeing domestic diversity will be a given. This is to safeguard varying opinions on topic selection and reporting, which represent both a public sector requirement as well as value based on programming.

Thesis 10 (“Content convergence”): Large and live events are less featured in public sector offerings. Monomedia premiere broadcasts subsequently in multiple use, or adaptations for other outlets, outweigh the approaches of multimedia storytelling. News reporting and regional focus will define format development in the public sector. It will be less about establishing programming patterns such as fact checking, but rather about finding and operating proprietary platforms.

Thesis 11 (“Utilisation convergence”): Although public sector providers in Europe will increasingly incorporate user-generated content and open up a dialogue with the public, they will create separate platforms, formats or environments that will increasingly be taken care of by “social media experts”. Journalistic competence, as a high-quality, professional public sector value add, either as compared to or along with original usage, will be evident.

Thesis 12 (“Utilisation convergence”): Public sector providers in Europe have different motivations regarding varying advertising requirements, and most importantly regarding the necessary legitimacy of the public system with society as its sponsor, and the task of gaining a new, growing public audience. Subcultural, social, demographic etc. components in fragmented environments gain varying usage preferences for multimedia sectors to rapidly gain relevance.

Thesis 13 (“Legal convergence frameworks”): Public sector issues in Europe are, first and foremost, regulated by national bodies where the EU acts as a framework.

There will be a need for regulation, primarily with regard to multinational media corporations and international competition law in general. Copyrights will also be discussed by regulators.

Thesis 14 (“Public sector organisation structure”): Europe's public sector will restructure its organisational charts. Established structures are reluctantly abandoned, with new ones implemented in a parallel format (rather than as a substitution) before they ultimately replace obsolete ones. Multimedia responsibilities initially appear in editorial contexts without completely overpowering monomedia outlets. It is debateable whether committee cuts will be done in lockstep or at a slower pace. Outsourcing will particularly affect technology and facility management, while administration will be less affected. New corporate building blocks contributing to the establishment of separate social media departments and research and development departments are increasingly expected. The regional element as a part of organisational chart modification will play a more significant role in the near term as opposed to in the long term.

Thesis 15 (“Public sector organisation structure”): In the coming decade, the exchange of individual programme products in Europe's public sector will increase.

On the other hand, joint program creation and the establishment of shared organisational structures, as well as anything more than peripheral development of common platforms, will remain unlikely.

Thesis 16 (“Public sector legitimisation”): Europe’s public sector will closely align its efforts to safeguard legitimacy with the respective programme mandate on topics and opinions that are to be included. In so doing, a balanced and pluralistic opinion will be essential to break down the demands on regional positions and realms of experience, which in turn indirectly support the public image via media products. Metacommunicative legitimisation approaches via public value reports or discussion events remain marginalised.

Thesis 17 (“Public sector USP”): Europe’s public sector operators will try to anchor their USP, particularly through parameters such as “trust” and “reliability” in order to be viewed as bodies that represent a certain level of “quality”. Firstly, this argument will continue as a result of the explicit link to the programming mandate and the resulting multi-value in the media system. It is less likely that Europe’s public sector operators will get involved in a discussion about political independence or lack thereof in order to define themselves as being bound by both internal and external norms.

When condensed, these theses create a clear picture regarding the future of public sector providers in Europe in relation to media-convergencies or media converging times, especially the reflection of the designated programming. Its reliable and audience-effective implementation formed the core of public sector operators’ future strategy, according to the Delphi panel. Requirement fields must be designated in the technical, economic convergence sector, and increasingly, those of use and regulation and legal settlement as well. But the means of measurement is and will remain: What do European public sector providers do for “their” respective societies? At this point, the panel was given feedback on content related convergence spectra, which would be used both in traditional linear, and increasingly, in non-linear formats as well. However, organisationally, they developed gradually and within thematic journalistic areas. However, the test persons were much less against the restructuring of public sector bodies in the coming decade according to patterns of content.

Continuing examinations will be necessary, and they will in turn examine this interfacing societal mandate and public sector self-definition, as well as the implementation of this mission and societal perception. Media convergence as part of a change in media will certainly be an essential component, as well as the exploration of a what is currently being virulently discussed in certain countries: why public sector broadcasting should exist in Europe. Another task within the research will be to develop and test methods of media investigation that provide robust empirical results in this highly dynamic environment. Similarly, it will be appropriate to counter this theoretical dynamic and model formation more consistently and more strongly than was done so before.

## CONCLUSION

The current Delphi study predicted paths in a media-convergent era that can and will probably exceed Europe’s public service broadcasters. The analysed time frame is not excessively long. Two to five and six to ten years were highlighted as

intervals. The participants estimate that there will be rich periods, conversion, change, re-orientation with a simultaneous attempt to preserve the tried and test and take a chance on new things. “Reliability” and “trust” coined as a USP to satisfy the programming mandate concluded within the interest of society – and with their financing – will presumably form an imaginary nucleus that must be secured. Linked to a *most different system* approach and recruited from the public reference areas, ARD (Germany), ORF (Austria), RTV SLO (Slovenia) and MTVA (Hungary) in the expert judgements of this Delphi study have crystallised many common denominators. Whether political accesses or concerning their prevention, economic weightings, legal requirements – Europe’s public service broadcasters will have to work together on EU-level in the next few years. However, they will also have to be responsible for providing “public cultural sovereignty areas” that are relevant to society.

Media convergence in terms of terminology will be a generally accepted driver and a challenge. “Media convergence is like teenage sex”, is a quote by Danish chief editor Ulrik Haagerup that has continued to be used since 2002: “Everybody thinks everybody else is doing it. The few who actually doing it aren’t very good at it” [15]. The public service broadcasters in Europe will have to grow up in this process in a clever and level-headed manner. And passion for games should be maintained more than before. Monolithic medial lord of the manor mastery is no longer viewed as an option by this Delphi study. However, innovative and patent public-law vitality as the zest for survival is an option.

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# PRESIDENTIAL SUSPENSIVE VETO DECISION-MAKING PRACTICE IN LATVIA: VALDIS ZATLERS AND ANDRIS BĒRZIŅŠ

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## ABSTRACT

This paper integrates situational leadership and rational choice approaches to investigate the presidential interaction with the parliament in Latvia. The focus is on the State president Valdis Zatlers (2007-2011) and Andris Bērziņš (2011-2015). The research is about the decision-making process on revised laws. It analysis standard operating procedures from returning laws to the parliament until proclamation of laws. Cross sectional sequential research design analyses and evaluates semi-structured elite interviews with State presidents' and their legal advisers to reflect on the nature and purpose of revised laws. Study concludes about the necessity of close interaction between the State president and the Parliament for reaching the agreement on the quality of laws. It shows that the State president have tried to impact the quality of laws during the presidency.

**Keywords:** *State president, decision making, network governance, suspensive veto*

## INTRODUCTION

Latvia is a parliamentary democracy with a 100-member unicameral parliament (*Saeima*), which is elected under a proportional system for a four-year period. The *Saeima* elects the President by a secret ballot. To be elected, candidates must win at least fifty-one votes. The President serves for a term of four years and is limited to two consecutive terms. A presidential candidate must be a citizen of Latvia and must be at least forty years old. A person with dual citizenship may not be elected President. The functions of the President are determined by the Constitution (*Satversme*) of the Republic of Latvia.

One of the most powerful functions of the President is the right to initiate legislation, proclaim or veto laws passed by the *Saeima* and grant clemency [1]. The President proclaims bills passed by the *Saeima* no earlier than the tenth day after the bill has been adopted and no later than the twenty-first day. A law comes into force fourteen days after its proclamation unless a different term has been specified in the law. The President may use the suspensive veto power within ten days of the adoption of a law by the *Saeima* by means of a written and reasoned request to the Chairperson of the *Saeima*, requiring the law to be reconsidered. If the *Saeima* overrides the law, the President then may not raise objections a second time. The President has the right to suspend the proclamation of a law for a period of two months if so requested by not less than one-third of the members of the *Saeima*. This right may be exercised by the President, or by one-third of the members of the *Saeima*, within ten days of the adoption of the law by the *Saeima*. The law thus suspended shall be put to a national referendum if so requested by not less than one-

tenth of the electorate. If no such request is received during the two-month period, the law shall then be proclaimed after the expiration of such period. A national referendum shall not take place, however, if the *Saeima* again votes on the law and not less than three-quarters of all members of the *Saeima* vote for the adoption of the law. Should the *Saeima*, by not less than a two-thirds majority vote, determine a law to be urgent, the President may not use suspensive veto rights and request reconsideration of such law, it may not be submitted to national referendum, and the adopted law shall be proclaimed no later than the third day after the President has received it.

The main role of the President is to promote the prosperity of Latvia and its inhabitants. This article analysis the usage of suspensive veto of State President Valdis Zatlers (2007-2011) and State President Andris Bērziņš (2011-2015). During the presidency of Valdis Zatlers thirteen times the President have used the suspensive veto power. President Andris Bērziņš have used nine times the suspensive veto power.

To date, research on Presidential suspensive vetoes and the subsequent reconsideration of vetoed laws in Parliaments around Europe are mostly focused on override. Presidential decision-making has been discussed in literature about veto power, political leadership, political elite study. Previous case studies of Presidential leadership in parliamentary countries focus on presidential behaviour. There are management studies about leadership development, legal studies about Presidential political responsibility and presidential impeachment procedure. Political scientists have studied and described presidential power via presidential duties.

In Latvia the research on suspensive veto and how decision-making is exercised has not been done and that assigns novelty to this study of State presidents after regaining of independence, Valdis Zatlers and Andris Bērziņš.

The aim of the research is to find out the most important reasons for Presidents of Latvia to use suspensive veto.

The research questions are:

1. What are the reasons for President Zatlers and President Bērziņš to use the suspensive veto?
2. How does the *Saeima* react on suspensive veto? To what extent does the *Saeima* take into account the objections of the President in the written and reasoned requests?
3. Is the standard operating procedure (*SOP*) for revised laws respected?

Article analysis how the decisions for suspensive veto have been taken. Whether situational leadership of State president and rational choice approach have led to the interaction with *Saeima* and revision of laws. The essence of rational choice is that “when faced with several courses of action, people usually do what they believe is likely to have the best overall outcome” [2]. Rational choice arose as part of the behavioural theory in 1950s and 1960s to examine how individuals behave. It depends on what we feed in by way of assumptions, and the questions we pose [3]. Rational choice explains individual actions and the outcomes, it takes individuals

preferences, beliefs and strategies. Rationality was established in the analysis of decision-making by Max Weber. He invented three types of legitimate rule: legal-rational, traditional and charismatic. The types of authority change over time, when citizens are no longer satisfied with the system [4]. Herbert Simon's work on bounded rationality is central to the analysis of rationality in decision-making. He stresses that human rationality is limited, in terms of, the incomplete and fragmented nature of knowledge; consequences that cannot be known, so that the decision-maker relies on a capacity to make valuations; limits of attention; human beings learning through adjusting their behaviour in line with purposive goals; limits of the memory; human beings as creatures of habit and routine; human beings with limited attention; human beings as limited by their psychological environments; initiated behaviour and attention; decision-making as bounded by the environment [5].

During the decision-making process, the modern governance approach, network governance, is one of the key drivers of taking that decision. Starting in the 1990s, the term network was increasingly used in the literature to capture the complexity and opacity of emerging forms [6], [7], [8], [9], [10], [11]. In this research network governance is understood, how self-organizing interorganizational networks function to discuss ideas [12]. It focuses upon the importance of informal relationships between organizations and groups, and how these organizational dynamics can set the context for more formal and specific processes of decision-making. Networks are designed to involve more actors in process of governing and to involve them in governing on a continuous basis. The network models of democracy depend upon the involvement of the full range of interests and individuals in society. Knoke classifies five basic types of interorganizational relations, each of which have a network structure: (a) resource exchange, (b) information transmission, (c) power relations, (d) boundary penetration and (e) sentimental attachments [13]. Networks are predictive of policy outcomes. Decision making in parliamentary democracy is made following legal constraints. That does not mean the decisions are high-quality, but they are made. Making decisions in the networks do not have a clear decision-rules. Without ex ante rules, governance is likely to produce no decisions and some alternative hierachal control is needed. High level impact networks are associated with the high impact on decision making, low level is more focused on policy implementation.

Nevertheless, as the State president decides on usage of suspensive veto, network decisions allow to broaden the questions and make the revision of the suspended law more precise and qualitative.

## METHODOLOGY

Research relies on general quantitative analyses of State President Valdis Zatlers and State President Andris Bērziņš vetoed laws (July 2007- July 2015). Laws are categorized by when and how often presidents have used their suspensive veto power; the timeframe from received motivated request in *Saeima* and further actions; by the responsible commissions, policy area and policy field; by the reasons of return – legal contradictions, inability to reach the stated objectives, inaccurate terminology, insufficient balance, lack of evaluation, disproportion of restrictions,

network request, leadership message and by the reaction of *Saeima* – accepted, partly accepted, never reconsidered, does not change the law.

There are theoretical, empirical and data processing methodology used in this research.

The theoretical analysis of scientific literature on decision making and network governance has been made, as well as the analysis of the written and reasoned requests and the theoretical analysis of the President's legislative functions to characterize and evaluate rational choice in decision-making. Network governance has been conceptually based as the most appropriate approach for decision-making, involving experts and groups of the public with different opinions, that stimulate the discussion and the State President, according to his knowledge and competences, makes a decision.

Empirical analysis of revised law new proposal tables of *Saeima*, the transcripts of *Saeima* sittings regarding vetoed laws have been analysed. Cross sectional sequential research design analyses and evaluates semi-structured elite interviews, gathering primary data, with State Presidents, legal advisers and experts. Interviews have been executed to collect the important evidence. Gathered data is processed analysing morphological hull ([http://nosketch.korpuss.lv/run.cgi/wordlist\\_form?corpname=vestules](http://nosketch.korpuss.lv/run.cgi/wordlist_form?corpname=vestules)), which has been created for this research via Optical Character Recognition tool (OCR). Using SPSS data analysis tool, the reasons for the suspensive veto have been gathered, as well as *Saeima* reaction and classification of the policy areas and fields. The standard operating procedures (SOP) established in the *Satversme* of the Republic of Latvia and the Rules of Procedures of the *Saeima* have been analysed to understand whether the procedure has been respected between the suspensive veto process, consideration and acceptance or deny of the law and promulgation [14].

The research sample, in this case, census, reflects the entire population, as all written and reasoned requests of Valdis Zatlers and Andris Bērziņš are analysed.

## RESULTS

Valdis Zatlers was State president of Latvia from July 8, 2007 until July 7, 2011. During his presidency, 1474 laws and amendments have been proclaimed. President Zatlers used his suspensive veto power 13 times.

Andris Bērziņš was State president of Latvia from July 8, 2011 until July 7, 2015. During his presidency, 1133 laws and amendments have been proclaimed. President Bērziņš used his suspensive veto power 9 times.

Above mentioned total number of laws adopted by *Saeima* include also urgently adopted laws. The President proclaims them in accordance with the procedure established by *Satversme*, without any opportunity to express the reaction. This regulation restricts the promulgation of high-quality legislation. However, in such a case, the President has the opportunity to address the Constitutional Court, which assesses the compliance of the adopted laws with the *Satversme*. In Valdis Zatlers presidency he used once this power on the Amendments to the Public Procurement Law in July 2009.

Research results discover the reasons of suspensive veto for each case and the reaction of the *Saeima* during State president Valdis Zatlers (VZ) presidency:

VZ1. Amendments to the Amendments to the Law on Border Guard were prepared by Cabinet of Ministers. *Saeima* accepted Presidents request. The return reasons were that the law does not meet the stated goals, insufficient balance, lack of evaluation, disproportion of restrictions. President submitted recommendation for the improvement of amendments.

VZ2. Amendments to the Law on the Integration of the Society were prepared by Cabinet of Ministers. The law was not reconsidered by *Saeima*. Parliament proposed to submit proposals by May 23, then postponed it to June 19, but at the same time on June 4, declared another amendment as urgent and adopted them on June 12. The State president was forced to proclaim the law. The return reasons were that the law does not meet the stated goals and disproportion of restrictions. President submitted recommendation for the improvement of amendments.

VZ3. The Law on the Prevention of Laundering of Proceeds from Crime and on the Financing of Terrorism were prepared by Cabinet of Ministers. *Saeima* accepted Presidents request. The return reasons were that the law does not meet the stated goals, legal contradictions, inaccurate terminology, insufficient balance, lack of evaluation, disproportion of restrictions, network request. President submitted recommendation for the improvement of law.

VZ4. Amendments to the State Civil Service Law were prepared by *Saeima* commission. The law was not reconsidered by *Saeima*. The return reasons were that the law does not meet the stated goals, inaccurate terminology, insufficient balance, lack of evaluation, disproportion of restrictions.

VZ5. Amendments to the Law on the Expropriation of the State and Local Government Property were prepared by *Saeima* commission. Amendments were accepted by *Saeima*. The return reasons were that the law does not meet the stated goals, insufficient balance, lack of evaluation, disproportion of restrictions. President submitted recommendation for the improvement of amendments.

VZ6. Amendments to the Public Procurement Law were prepared by Cabinet of Ministers. *Saeima* does not change the law. The return reasons were that the law does not meet the stated goals, lack of evaluation. President submitted recommendation for the improvement of amendments.

VZ7. Amendments to the Alcoholic Beverages Circulation Law were prepared by *Saeima* commission. *Saeima* accepted Presidents request. The return reasons were that the law does not meet the stated goals, insufficient balance, lack of evaluation, disproportion of restrictions. President submitted recommendation for the improvement of amendments.

VZ8. Amendments to the Immigration Law were prepared by Cabinet of Ministers. *Saeima* partly accepted Presidents request. The return reasons were legal contradictions, lack of evaluation, disproportion of restrictions, network request. President submitted recommendation for the improvement of amendments.

VZ9. Amendments to the Law on Ports were prepared by Cabinet of Ministers. *Saeima* partly accepted Presidents request. The return reasons were insufficient

balance, disproportion of restrictions, network request. President submitted recommendation for the improvement of amendments.

VZ10. Electronic Media Law were prepared by *Saeima* commission. *Saeima* partly accepted Presidents request. The return reasons were that the law does not meet the stated goals, legal contradictions, inaccurate terminology, insufficient balance, lack of evaluation, disproportion of restrictions, network request. President submitted recommendation for the improvement of law.

VZ11. The Insolvency Law were prepared by Cabinet of Ministers. *Saeima* partly accepted Presidents request. The return reasons are legal contradictions, inaccurate terminology, lack of evaluation, disproportion of restrictions, network request. President submitted recommendation for the improvement of law.

VZ12. Amendments to the Law "On Prevention of Conflict of Interest in the Activities of Public Officials" were prepared by MP's. *Saeima* accepted Presidents request. The return reasons are legal contradictions, inaccurate terminology, lack of evaluation, disproportion of restrictions, network request. President submitted recommendation for the improvement of amendments.

VZ13. Amendments to the Law on Budget and Financial Management were prepared by *Saeima* commission. *Saeima* does not change the law. The return reasons were legal contradictions, network request. President submitted recommendation for the improvement of amendments.

Research results discover the reasons of suspensive veto for each case and the reaction of the *Saeima* during State president Andris Bērziņš (AB) presidency:

AB1. Amendments to the Civil Procedure Law were prepared by *Saeima* commission. *Saeima* accepted Presidents request. The return reasons were legal contradictions, disproportion of restrictions, network request. The President submitted recommendation for the improvement of amendments.

AB2. Amendments to the Law on the State Border of the Republic of Latvia were prepared by *Saeima* commission. *Saeima* accepted Presidents request. The return reasons were insufficient balance, disproportion of restrictions, network request. President submitted recommendation for the improvement of amendments.

AB3. Amendments to the Law "On Referendums and Proclamation of Laws" were prepared by Cabinet of Ministers. *Saeima* partly accepted Presidents request. The return reasons were legal contradictions, disproportion of restrictions, network request. The President submitted recommendation for the improvement of amendments.

AB4. Amendments to the Law "On Referendums and Proclamation of Laws" were prepared by Cabinet of Ministers. *Saeima* overrides the law and votes against with 53 ballots. Later *Saeima* declares the amendments as urgent, adapts it and the President is forced to proclaim the law. The return reasons were legal contradictions, insufficient balance, disproportion of restrictions, network request. President submitted recommendation for the improvement of amendments.

AB5. Amendments to the Protection Zone Law were prepared by Cabinet of Ministers. *Saeima* partly accepted Presidents request. The return reasons were legal

contradictions, insufficient balance, lack of evaluation, disproportion of restrictions, network request. President submitted recommendation for the improvement of amendments.

AB6. Amendments to the Law on Scientific Activity were prepared by *Saeima* commission. *Saeima* accepted Presidents request. The return reasons were insufficient balance, lack of evaluation, disproportion of restrictions, network request. President submitted recommendation for the improvement of amendments.

AB7. Amendments to the Civil Procedure Law were prepared by Cabinet of Ministers. *Saeima* accepted Presidents request. The return reasons were insufficient balance, lack of evaluation. President submitted recommendation for the improvement of amendments.

AB8. Amendments to the Immigration Law were prepared by *Saeima* commission. *Saeima* accepted Presidents request. The return reasons were that the law does not meet the stated goals, legal contradictions, insufficient balance, lack of evaluation, network request. President submitted recommendation for the improvement of law.

AB9. Amendments to the *Saeima* Election Law were prepared by Cabinet of Ministers. *Saeima* partly accepted Presidents request. The return reasons were that the law does not meet the stated goals, legal contradictions, insufficient balance, lack of evaluation, disproportion of restrictions, network request. President submitted recommendation for the improvement of law.

In Latvia there is a standard operating procedure that the request should be sent to the parliament within a period of ten days of the adoption of a law by the *Saeima*. If the President, in accordance with the provisions of Article 71 of the *Satversme*, has requested a law be reconsidered, the *Saeima* at its next sitting, without holding a debate, forwards the President's reasoned objections to the responsible committee and to other committees and sets the deadline by which proposals may be submitted and the law reconsidered (Rules of procedure of *Saeima*). When the law is being reconsidered, the provisions for considering a draft law in the third reading applies, and only the objections raised by the President and the proposals related to these objections are considered.

During the Presidencies of Valdis Zatlers and Andris Bērziņš standard operating procedures have been always taken into account. Laws have been passed to responsible commission as of the same day when vetoed to 21 days (next *Saeima* sitting) since Presidential request.

In two cases, during Valdis Zatlers presidency *Saeima* did not reconsider laws. These laws were: Amendments to the Law on the Integration of the Society (March 2008) and Amendments to the State Civil Service Law (September 2008). In two cases *Saeima* did not change the law: Amendments to the Public Procurement Law (June 2009) and Amendments to the Law on Budget and Financial Management (June 3, 2011). The interaction between the State president and the *Saeima* achieved the critical point and President Zatlers dismissed *Saeima* in May 28, 2011.

During President Andris Bērziņš presidency the interaction between the President and *Saeima* could be considered as good. There were nine laws on which

suspensive veto power were used, but as from the interview, the cooperation with *Saeima* during the law-making process was successful which led to the proclamation of qualitative laws. On one occasion *Saeima* overrode the Amendments to the Law "On Referendums and Proclamation of Laws" with 53 votes against. That has been the only vote since regaining of independence with majority voting against President's suggestions.

## CONCLUSION

Based on the analysis of the motivated written and reasoned Presidential requests, the reasons for the use of suspensive veto have been discovered. The most frequent reasons are: legal contradictions, inability to reach the stated objectives, inaccurate terminology, insufficient balance, lack of evaluation, disproportion of restrictions, network request. Usually State Presidents' attach the recommendation for the improvement of law.

Rational choice has an in-built conservative bias, it reflects public choice variant and in combination with the network governance political leaders who want to be able to steer effectively might use that as one of the simplest approaches, as networks are following the decision-making process and when asked for advice are ready to detect problems and create solutions. It is a possibility to communicate with citizens.

Neither *Satversme*, nor *Saeima* Rules of Procedure determines the standard operating procedure for reviewing the vetoed laws. However, since only laws that are not recognized by *Saeima* as urgent might be vetoed, it is not reasonable to propose a specific time which should be from the law-making commission to the review and adoption of the law, if the usefulness and the specific situation determines the time period reviewing the law. For example, if the in-depth research is needed to improve the law, it takes longer to come to a qualitative solution.

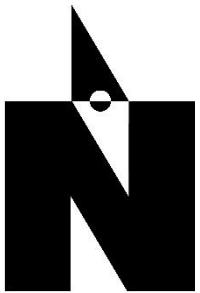
This leads to a conclusion of the importance of cooperation between President Chancellery and the Parliament. As more State president influence the decision-making process during the legislation process, during the first and second reading, as less the President needs to use suspensive veto power. The President reshape the contours of the legislative landscape to pave the way for change and quality of legislation. This research methodology might be used not only studying Presidents' of Latvia suspensive veto power, but any parliamentarian republic president's legislative functions.

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Section URBAN STUDIES,  
PLANNING AND DEVELOPMENT

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# FUNCTIONING OF LATVIAN DETENTION INSTITUTIONS SAFETY SYSTEM IN CASE OF TECHNOGENIC DISASTER THREAT

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## ABSTRACT

In both the world and Latvia, people who are serving sentences and are in places of detention for the committed criminal offenses occupy a special place in society. There are 12 places of imprisonment in Latvia where people who have committed criminal offenses are serving punishment and Latvian statistics show that in 2017 there were 3,765 people in detention [1]. Most of the people in prisons are 30-35 years of age, they are potentially part of the economically active population. Latvian society is interested that these people after having served their sentence in detention places return to society and promote the country's economic development. The study was carried out to identify what deficiencies exist in ensuring the safety of detainees in detention places in case of a technogenic disaster outside the prison area, whether the safety system established in Latvia ensures the human right to safety while in detention. The article reviews the mechanism of technogenic safety and civil protection based on the analysis of national legislation, which is necessary to ensure a maximum security at detention places, as well as the provision of necessary resources from the state. The security of prisoners in Latvia is based on national laws and the Cabinet of Ministers regulations containing the security norms and methods, of which use allows the responsible authorities to react quickly, promptly and comprehensively to dangerous situations in external environment. The outcome of the present study is a general review of the technogenic safety system of Latvian detention institutions and identification of shortcomings, based on a comprehensive analysis of Latvian legislation.

**Key words:** *prisons, hazard, prisoner, civil protection, disasters.*

## INTRODUCTION

The objective is to identify what drawbacks exist in ensuring the safety of detainees in the event of a technogenic disaster outside the prison area in Latvia. The subject of the study is the review of regulatory enactments governing the safety. This issue is topical in not only Latvia but also all over the world where there are practically no studies on the safety mechanism in the event of emergency in detention institutions. Indeed, only a handful of studies have focused on prisons and prisoners in disasters and emergencies [9]. This study provides a possibility to review the structure and regulation of the safety system of Latvian detention facilities as well as to identify the drawbacks. The following study has been carried out in the world in 2017: “**Disaster risk reduction and emergency management in prison: A scoping study from New Zealand**”. It explores the exposure of

prisons and identifies vulnerabilities and capacities of prisoners as well as the related policies and practices for disaster risk reduction and emergency management [2]. This study showed the topicality and importance of the issue in the context of global natural and technogenic safety; it was concluded that the deficiencies of the safety system were also applicable to other countries of the world, including Latvia. Most of Latvian detention institutions are located close to technogenic sites, such as railways and motor roads by which dangerous cargoes are carried every day, and there may be also hazardous areas identified in the vicinity of stationary high-risk objects; in total there are 69 such objects in Latvia, some of them are located near places of imprisonment. The work of Latvian detention institutions is strictly regulated and some of the documents have a restricted access status, therefore in the course of this study the free accessible regulatory enactments were summarized. Prisons and correctional facilities are like small cities in that they provide food, shelter, health care and other basic needs, and must be prepared for all types of emergencies, including natural disasters. Just as cities must create emergency preparedness and response plans based on their geography, prison officials must do the same. Those plans often involve the local community [8].

## **PRISON AND GENERAL WORK ORGANIZATION IN LATVIAN STATE DETENTION INSTITUTIONS**

We start with the review of what means prison and for whom it is intended. Prisons are “segregative institutions designed to punish, typically for criminal offences. Prisons are usually strictly regulated and tightly surveyed environments, to which offenders are confined for varying lengths of time, and sometimes for life”. Prisons are therefore places of exclusion at the margin of the society. They are secluded territorial entities which gather those people who are banished from social life for the crime they have committed. Imprisonment is therefore a spatial and social form of punishment [5].

Since 2004 Latvia is a member state of the European Union (hereinafter - the EU) and is bound by EU legislation. Article 2 of the European Convention on Human Rights states that every person's right to life is protected by law. This convention is one of the most important documents stating that any person has the right to life not depending on whether a person is in a place of imprisonment or not. The basic Latvian document, which defines the basic structure of the state, is the Satversme (Constitution) of the Republic of Latvia. The Satversme defines the fundamental human rights, including the right to life, as well as stipulates that no one may deprive or restrict freedom except in accordance with the law. Based on the Satversme, the laws have been issued and one of the basic laws determining the institutional system of the state administration subordinated to the Cabinet of Ministers and the basic rules of the state administration is the law On the State Administration Structure. Based on this law, the Prisons Administration Regulation has been issued, which establishes the functions of the prison administration: detention as a means of security and deprivation of liberty as a criminal penalty execution. This regulation provides for a number of functions performed by the prison authorities in order to ensure compliance with the regime, as well as compliance with the rules and rights of prisoners, and the proper fulfillment of duties. Separately, in order to ensure the operation of the Prisons Administration in

compliance with the principles of legality and human rights, the Prisons Administration Law was issued in 2003. The Prisons Administration Law states that the Prisons Administration Office consists of: remand prisons, closed prisons, semi-closed prisons, open prisons, correctional institutions for juveniles. All of these detention places have their own conditions for keeping inmates, depending on punishment imposed by the court, which depends on the degree of the committed crime and the prisoner's danger to the society.

According to the aforementioned documents, it is strictly stated that a safety system has been established in Latvia, which is responsible to care about human life and health no matter where the person is located.

### **MECHANISM FOR OVERCOMING EMERGENCY SITUATIONS IN PRISONS**

A multilevel civil protection system has been established in Latvia, which provides for care about residents in the event of a catastrophe or a threat thereof. Let us take look at how the term "resident" is interpreted by the Latvian Academy of Sciences: a citizen of Latvia or a person registered in the Office for Citizenship and Migration Affairs of the Ministry of Interior of the Republic of Latvia, who has a permanent residence registration in the Republic of Latvia and who has been assigned an individual and unchanged personal identification number, which is indicated in identity documents, or has received a permanent residence permit [7]. It should be noted that a resident is any natural person who is assigned a personal identification number, thus a person who is in a detention place is also considered a resident.

In 2016, the Civil Protection and Disaster Management Law came into force, which aims to establish the legal and organizational principles of the civil protection system operation and disaster management in order to maximally ensure the safety and protection of people, environment, infrastructure and property ([vugd.gov.lv](http://vugd.gov.lv)). The civil protection system includes a timely prediction of disaster threats, planning and conducting the restoration measures, and providing the community with the minimum essential needs in case of catastrophe or catastrophic hazard. The system also defines the rights and tasks of the State, local governments, legal and natural persons. The coordination of disaster management is based on the risk assessment. Based on the risk assessment, sectoral ministries and local authorities, in cooperation with other institutions, should identify preventive, preparative, responsive and consequences mitigating measures, develop relevant documents, and identify and plan resources for disaster management. It should be noted that persons being in detention places are residents while the local government is responsible for the evacuation of residents, this being a deficiency in the law since the municipality has no right to evacuate the arrested persons because a special legal regime is applied to them. Based on the above, the evacuation measures in detention institutions should be ensured by the administration of these facilities. The Civil Protection and Disaster Management Law provides for obligations of certain entities to develop a civil protection plan for the facility, which includes the safety and evacuation measures, but the mandatory requirement is not applicable to all facilities in Latvia. Such obligation may be imposed by a sectoral ministry

responsible for the order and safety of its subordinated facilities. At present time, no such obligations are established for the prison administration.

The Cabinet of Ministers Regulation No. 423 "The Internal Rules of Detention Institutions" of 2006 establishes the internal order in detention places, including the regime requirements for detainees, as well as the standards to be ensured for observance of human rights. In view of this, in the event of evacuation of a detention institution, the prisoners should be placed only in such facilities where there is the possibility of implementing certain regimes relating to places of detention, that is, only in other prisons. Regarding the Civil Protection and Disaster Management Law, the Prison Administration should take into account the requirements for necessary planning and implementing the activity required for a continuous operation of a state institution in the event of a disaster or catastrophe threat, which primarily may be also applied to cases associated with the implementation of evacuation measures in a place of detention. In addition, the Cabinet of Ministers Regulation No. 238 "Fire Safety Regulations" of 2016 stipulates that the responsible person shall ensure the development of a fire safety manual for a public facility and the fire safety manual is a set of fire safety requirements corresponding to the purpose of use of the public facility. These regulations provide to define an action in the fire safety manual for the case of fire, including a procedure for evacuation of people. Notwithstanding that the fire safety manual only applies to the case of a fire, the essence of its implementation is also applicable to other types of disasters or to cases where the evacuation from a facility is to be carried out and the accommodation places are provided to be other detention places in Latvia, with which the cooperation agreements should be concluded.

With regard to the use of transport in the event of evacuation, the prison administration shall apply the same requirements as those implemented in the Cabinet of Ministers Regulation No. 499 of 2015 "The procedure for the transportation and guarding of the convicted or arrested person during the receipt of a health service at a medical treatment institution outside the detention institution". This regulation provides for a special procedure of transferring a patient from a prison to a hospital outside its territory. The regulation establishes that the transportation and security of a prisoner is a package of measures taken by an official to prevent a prisoner from attempting to make a jailbreak or commit an action that endangers the safety of the official, the prisoner himself or another person, to ensure the protection of the official and the prisoner against unlawful actions of other person. The transfer procedure is very long lasting since there are provided many measures to be taken by an official before moving. Prior to the transfer of a prisoner, an official of the same gender carries out a complete inspection and check of the prisoner's clothing, body and kit in order to remove items, articles or substances that are prohibited from being brought in, used or held in the detention place and that can be used for attack, for causing personal injury to themselves or another persons or for another unlawful activity. Prior to the search, the prison officer invites the prisoner to voluntarily hand in the prohibited items. When a prohibited item is found during the search, the official shall prepare a report (in one copy) on the prisoner's search, which together with the prohibited item is handed over to the duty assistant governor of prison (hereinafter referred to as the duty assistant). This procedure due to lack of time may only be valid for everyday

individual events where there is no need to transport large numbers of detainees who may be potentially at risk in the event of a technogenic disaster. The system established in the country for the transfer of prisoners does provide the detention institutions with the transport for the transfer of all detainees since the probability of evacuating all of them together is not considered. The prisoner is transported by the prison's emergency vehicle, the saloon of which is equipped with one or more lockable compartments, by another prison's service vehicle or by the Ambulance vehicle. When analyzing the statistics, it is ascertained that very few such special vehicles are at disposal of detention institutions, average two at each detention institution, where up to 10 people can be accommodated.

As reviewed above, the evacuation of prisoners is a very time-consuming issue to comply with all requirements of law and the detention institutions are not provided with a specialized transport for the transfer of all detainees.

Larger municipalities in Latvia often have their own bus fleets for everyday carriage of passengers, which are not intended to carry the prisoners since it would not meet the requirements of the aforementioned system. As a result, the municipality has no possibilities to provide a specialized transport for carriage of prisoners in the event of a technogenic disaster, as well as the municipality should first take care of and evacuate its own declared residents who are not in the detention places. By now, no Latvian municipality is capable with its own resources to move all the residents from the endangered place to the evacuation place, therefore the prison administration should search for resources elsewhere. Within the framework of the Civil Protection and Disaster Management Law, the cooperation between the prison and the local government is severely restricted by the requirements of laws and the Cabinet of Ministers Regulations. In cases that relate to the provision of transport in case of evacuation, the detention institutions should plan the evacuation with their own forces. The exclusion may only apply to the open prisons as well as to the correctional institutions for juveniles where less dangerous prisoners are serving their sentence. The prison administration should assess whether evacuation of prisoners will meet all requirements of the special regime and a sufficient security will be guaranteed if services of the public transport will be used, and whether it will not create additional risks of security and order.

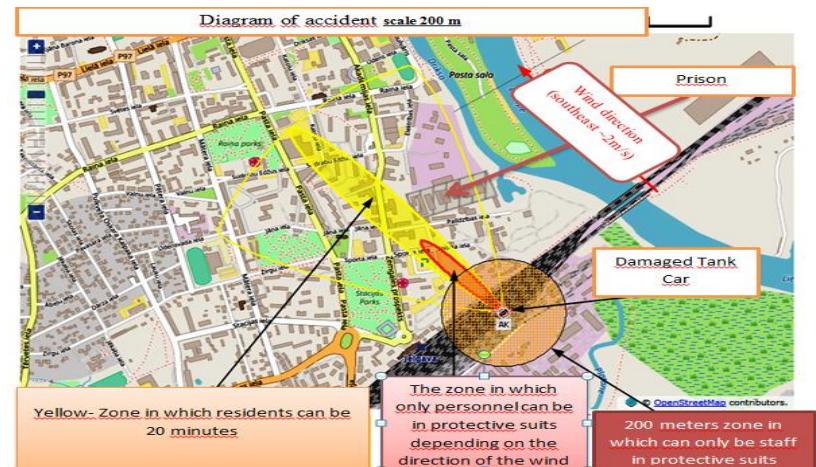
## **ASSESSMENT OF TECHNOGENIC THREAT TO A DETENTION INSTITUTION**

The Jelgava Prison is located about 200 meters from Jelgava Railway Station. The Jelgava railway station is designated as a national scale high-risk facility (hereinafter referred to as HRF). It was historically allowed and turned out so that this detention place is close to this type of HRF; in the event of an accident with a discharge of ammonia from 60-ton railway tank-car at the HRF, of which situation diagram is shown in Figure No.1, it is found that with the south-east wind direction the detention place will be affected together with 321 [6] prisoners. This HRF is included in the State and Jelgava Municipality civil protection plans since the accident could affect residents outside the territory of the facility. Adverse consequences of threat to Jelgava railway station can be defined according to the Seveso III directive. The Seveso III Directive was developed after the "red mud" disaster in Hungary in 2010. In accordance with requirements of this directive, the

HRF management shall develop a safety report and a civil protection plan. These documents shall identify the probabilistic scenarios and necessary state and municipal resources to overcome this accident. In Latvia, the legislator has not determined the criteria for calculation of risk areas; usually the HRF management itself chooses and uses one of methodologies most recognized in the world, most often the US-developed programme ALOHA or Dutch Coloured Books.

The lives of inmates in any prison are dependent on the ability of the prison administration to take emergency measures properly and respond promptly to an emergency, as the incarcerated persons as well as other state prisoners are not allowed to move freely and have no free access to the personal and collective protective equipment, which would need to be used in the event of such a threat. This situation is aggravated also by that in prisons there may be persons who have poor physical and psychological health and need extra time to be evacuated. Efficient operation of the evacuation systems is also affected by more security systems, such as doors, bars, checkpoints, etc.

In all Latvia prisons, a fire safety manual has been developed as provided by the Cabinet of Ministers Regulation No.238 of 2016 “Fire safety regulations”, to which according the prison management shall plan the evacuation procedure with involvement of all officials and provision of assistance. The manual provides actions for quick evacuation of prisoners, what doors to open, which stairs should be used. The manual can work efficiently on condition of safe presence in the territory of the detainment institution since the evacuation is intended to place the prisoners over the territory but in case of chemical pollution the action algorithm is different because it is more secure to remain inside the premises using personal protective equipment or collective means of protection – sealed premises, such as a bombshelter, where local ventilation systems are built or efficient air filtration is provided. If such system is not built, then the accepted practice is to disable ventilation devices, to seal the windows and doors, thus maximally preventing the noxious air from flowing into the premises. Examining these options, it should be noted that the prison must have a self-contained safety system designed to provide a high level of safety in the event of a technogenic accident, since evacuation by buses to another detention place in such cases is very risky as usually this kind of accident can be localized rather quickly but the evacuation will take more time than finding a safe place inside the prison. Examples in New Zealand and elsewhere indicate that prisoners can play a key role before, during and after disaster, including for providing health care and first-aid support, firefighting, clearing debris, fund raising post disaster and offering informal counselling to other inmates [4] [8]. Compared to experience of other countries, prisoners in Latvia are in a helpless state although they also can be trained how to act in case of emergency situation. Prisoners are, however, not helpless when facing natural and other hazards. They also possess capacities or intrinsic knowledge, skills and resources used to deal with both hazards and disasters [3]. For most informants, prisoners are valuable resources that can be mobilized in time of disaster and emergency. DoC staff emphasize that involving prisoners in DRR and emergency management provides them with the opportunity to gain a small salary as well as relevant skills useful for their rehabilitation [2].



**Figure 1. Diagram of accident**

## CONCLUSIONS

In the result of the study it was found that in case of technogenic disaster in proximity of a detention institution in Latvia the everyday regime would be affected and the personal of this institution would be threatened as well as the prisoners. A fire safety manual should be developed for a detention institution in Latvia, which is intended for evacuation of personnel and prisoners of the detention institution when there is no sufficient transport means for carriage of these persons. The transportation procedure in case of technogenic disaster is time consuming since the same action is provided as for people transportation to a hospital in more stages. No individual procedure is developed for evacuation in case of external threat. Participation of prisoners in case of disaster is restricted since no special training is carried out where the prisoners could help the others to be evacuated faster, for example, help the inmates with musculoskeletal disorders. The Prison Administration is not provided with personal or collective protective equipment that could be used in case of chemical contamination thus avoiding the need to evacuate the prisoners immediately but making possible to wait for transport in safe conditions. The established civil protection and disaster management system as well as laws regulating the system of detention institutions need to be amended in order the detention institutions could use transport unaccommodated for the special regime.

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## LANDSCAPES OF PERMANENT TEMPORALITY: THE REFUGEE CAMPS

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### ABSTRACT

The article concerns selected refugee camps that have been functioning for more than 5 years and due to the number of temporary residents can be compared with a small town or settlement with some features of sustainability. The subject of analysis are city-forming functions, which are crucial for the settlement processes, as well as the landscape elements of an inclusive nature that facilitate integration in the new community and acceptance of the place. In this respect, authors evaluate various types of camps, comparing them with the architectural and urban projects aimed at improving the situation of refugees in the transitional period, in which they wait for the opportunity to return home or fully assimilate in a new cultural environment. The phenomenon of permanent temporality affects millions of people mostly in Africa and Asia, where migration crisis has continued and intensified for many years. Problems of the asylum seekers are solved more efficiently in Europe and therefore are not the main focus of this paper. Nevertheless, they evoke many contradictory emotions, pointing to the need for education and research.

***Keywords: refugee camps, refugee landscapes, rooting landscapes, island-like landscapes, landscapes of permanent temporality.***

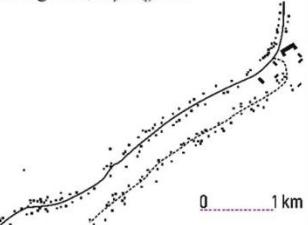
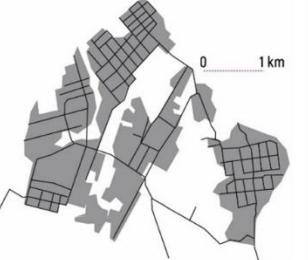
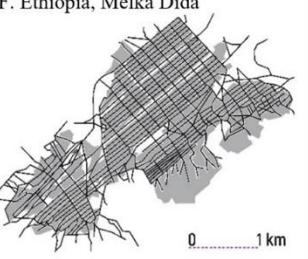
### INTRODUCTION

City-shaping mechanisms are often triggered by crisis situations: wars, uprisings and rebellions against systems and hierarchies. In case of refugee camps we are dealing with spatial transfer of this process: the cause comes from a different political, social and spatial dimension (the source of exile) and is introduced as a foreign structure in a homogenous environment (the hosting space). A new type of a settlement, created this way, is placed ‘outside’ – and locked ‘inside’. Its extraterritoriality is doubling the exclusion from homeland by the insulation from new locality [1]. The triangle of dependency between the humanitarian actors, the hosting governments and the subjective position of refugees [2] is shaping mentioned spaces into ongoing, however temporarily designed, living situations. At the same time, the place does not offer any new meaning or quality. It provides permanent existence in an empty, outer-space [1], which lacks basic infrastructure and hinders, if not entirely blocks, the development and stability. In the light of the forecasted climate change, mass migration and associated conflicts, as well as the highest on record global refugee population [3] it is very likely that previously described refugee camps will remain the crucial spatial response to the forced exile. Let us take a deeper look at the perceptual inherency of forced migrations in the landscapes, remaining somewhere between the exclusion and the hospitality, stagnation and self-organization, no-place and all-place.

To the authors' best knowledge, there is no commonly available summary of globally operating refugee camps and settlements and the total number of current camps is unknown. However, overt databases of main humanitarian organizations dealing with the forced migration issues, such as UNHCR, IOM, UNRWA etc., provide basic information on particular locations. The data of the Relief Web (Table 1.A, 1.C, 1.D), Migration Data Portal (Table 1.A, 1.B, 1.C, 1.D), UNRWA (Table 1.E, 1.F) as well as local governments (Table 1.B - Ministry of Disaster Management and Refugees, Republic of Rwanda) resources have been selected as the research base for the purpose of this article and supplemented by other resources if needed. As a result, about 160 refugee camps and settlements, operating longer than five years, have been explored. As they vary considerably, it was necessary to carry out a pre-study of measurable cognitive parameters defined by the presence of the main discourse of the city-forming functions, which are crucial at the settlement processes: the location, capacity, size, operating time, type and form, as well as additional, socially and sustainably oriented features. Complementary literature studies and analysis led to the premise that the inherency of refugees in the urban-like landscapes does not represent any of the common, functioning structures. As some general shaping elements may be determined, analysed areas have been classified by their features into four main criteria-groups: type (form of a settlement), shape (urban form), inclusive infrastructure (socio-creative elements of space) and parametric features (size, capacity, existence, etc.). The cross-sectional results based on this approach are presented in Table 1.

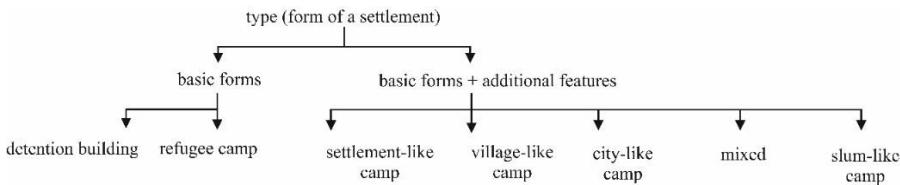
**Table 1. Juxtaposition of selected refugee settlements. By Agnieszka Wierzbicka**

Country, camp name	Type	Shape	Parametric	Infra-structure
A. Jordan, Mrajeeb Al Fhood	refugee camp	rectangular grid	capacity: 6.844 area (ha): 34 nearest: settlement (km): 10 camp (km): 20 year: 2013 operating time:5y	supermarket; school; playground; playing field; religious facility
B. Rwanda, Kigeme	settlement-like camp	concentric, natural grid	capacity: 2.004 area (ha): 34 nearest: settlement (km): 6 camp (km): 40 year 2012 operating time:6y	market; school; religious facility;

C. Uganda, Kyangwali		village-like camp	linear /organic street	capacity: 51.797 area (ha): 36 nearest: settlement (km): 30 camp (km): >100 year: 1960 operating time: 54y	school; market; religious facility;
D. Kenya, Kakuma 1,2,3,4		city-like camp	clusters of axial and rectangular grids	capacity: 185.449 nearest: settlement (km): 25 camp (km): >100 Year: 1992 operating time: 26y	school; market; labour market; religious facility; cinema;
E. Jordan, Irbid		slum-like camp	rectangular grid	capacity: 8.000 area (ha): 13 nearest: settlement (km): 0 camp (km): 40 Year: 1968 operating time: 50y	school; shops; services;
F. Ethiopia, Melka Dida		Mixed: village-like camp settlement	rectangular grid, fenced households	capacity: 44.023 area (ha): 179 nearest: settlement (km): 20 camp (km): 5 year: 2010 time of existence: 8y	school; religious facility;

Six model landscapes of camp-like situations (Table 1.A.-1.F) may be compared with features of a small town (settlement) with some factors of sustainability and serve as distinctive examples of provided research. Main perceptual and functional feature of refugee camp-like situation, essential for landscape assessment, is its spatial type. Proposed pre-typology is illustrated in Fig.1. The perceptually simplest refugee living situation is a singular built-up area represented by a detention centre, such as constructions in Spanish Ceuta and Melilla. The building alone is not a landscape, nevertheless, it should be mentioned that its features, enclosing and detaching from the neighbourhood, imply Augé's 'non-place' in urban landscape [4]. Due to the dominant importance of the building structure and meaningless surrounding, detention centres have been excluded from further analysis. Next form worth noticing is a refugee camp, defined as a group of shelters with some additional, basic infrastructure. Usually, it is a completely controlled, fenced area

of containers or tents. Exemplary Mrajeeb Al Fhood in Jordan is a homogenous, rhythmic network of identical boxes on the sandy ground. Still, most widely represented are various combinations of a refugee camp and some additional, habituating features.

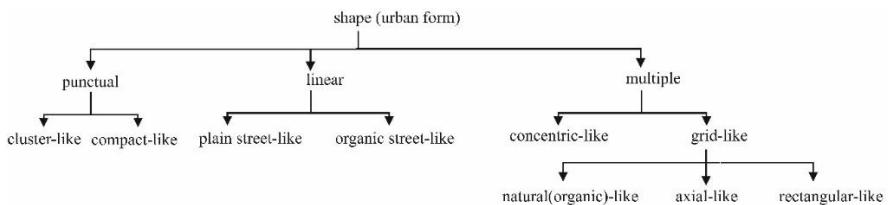


**Figure 1. Inherency of refugees in urban landscape - preliminary criteria (desk studies): forms of settlement. By Agnieszka Wierzbicka.**

Kigeme in Rwanda is a perceptual representation of a settlement-like camp. Tents and containers, characteristic for a refugee-camp, are replaced by clay huts divided into smaller areas on the steep hill between trees. Additional infrastructure is, however, very limited, as it mostly consists of a school, health facility, food distribution centre and sanitary infrastructure. As majority of this kind of structures, Kigeme is spatially detached from the local neighbourhood. The analysis indicates cohesion between the type of the refugee settlement and the time of its operation: the ones with the longest history have often managed to acquire some features of self-sufficiency and development, and they represent more advanced-like forms based on long-term activity: village-like camps (in rural areas), and slum-like camps or city-like camps (in urban areas). A village-like camp differs from a settlement-like camp in having additional agricultural features. A city-like camp is the most advanced form. Exemplary Kakuma consists of four districts and has own, although small, labour market, services and shops. The opposite type of a camp and a city combination is represented by slums, which, due to their location in urbanised areas, are an example of extremely dense and crowded structures. There are also forms that may be variously defined. Melka Dida in Ethiopia has an urban and functional form of a camp-settlement, however, its shelters are divided into fenced groups resembling micro-farms.

## THE INTERNAL URBAN-LIKE LANDSCAPES CREATED BY THE PRESENCE

In opposition to refugee-camp typology, which is based on the expanding of a simple structure, urban shapes of camps seem to simplify the common schemas. It is difficult to distinguish camps from each other, as their discriminating feature is usually only the main layout of the place, identical in microscale. There is a lack of infrastructure, the tendency to transparency and planned temporality, which result in unilateral, infinite landscapes.



**Figure 2.** Inherency of refugees in urban landscape - preliminary criteria (desk studies): urban forms of refugee-settlements. By Agnieszka Wierzbicka.

As follows from the Fig.2., landscapes are shaped in various patterns: punctual, linear or multiple. Multiple urban forms are reminiscent of grids or, less often, concentric shapes. Rectangular, axial or natural configuration depends mainly on the origin of the settlement: planned and fenced camps are usually based on the rectangular grid, while spontaneously created and less controlled areas reflect natural landscapes in organic streets. Mrajeeb Al Fhood, Irbid and Melka Dida are organised into plain, rectangular grids, Kigeme radiates out from the main street and Kyangwali stretches along an organic path. However, they all represent monotonous, dense and homogenous surfaces of identical shelters, with no visible division into public, semi-public or private zones. There are no elements shaping the socio-urban space, such as squares, green areas, or other meeting places and the accompanying infrastructure is limited to necessary services.



**Image 1, 2.** The lack of well-organised public and semi-public meeting spaces is manifested by the appearance of meeting points, electricity sources and warming spots. The Moria Refugee Camp, Lesbos, 2015/2016. By Agnieszka Wierzbicka.

Therefore multiple, bottom-up, substitute forms of public spaces appear in camps. People gather next to the sources of water or electricity, points of distribution, advertising poles, shops, food spots, or at the entrances. As can be seen from the Image 1 and 2, the absent spatial infrastructure in the Moria Registration Camp is replaced by the occurrence of groups next to the mobile charging spot and the braziers. The surrounding is ascetic with only one pre-planned feature: some extra space. In general, dominating, precisely determined and homogeneous plan of

the camp stops social development and is unable to respond to dynamics of the users' needs. In contrast to the contemporary landscapes of cities defined as everlasting process of balancing between the top-up planning and bottom-up emerging structures, the landscapes of refugee camps are characterised by the lasting pop-up appearance of people in empty spaces between the homogenous structures.

## **THE ISLAND-LIKE LANDSCAPES**

The above analysis also points out to the characteristic spatial separation of all recognized urban forms from its human surrounding. Refugee camps are the reflection of the local hospitality, which may be defined as a balance between the moral obligation to welcome newcomers in the need of protection, and the right to preserve autonomy. This process is strongly dependent on the previously described shape and form of a camp, which determine the features of inclusivity: the accessibility, connectivity and locus in reference to the neighbouring area. For the process to be initiated, the space must allow the meeting. Therefore, the other essential feature for landscape assessment is the distance between the camp and the local neighbourhood. The analysis of all 160 objects has determined three main types of distances and led to the following conclusions: the range over 20 km exceeds daily walking distance; the range between 20 km and 5 km gives the possibility of getting there and back within a day; the location not further than 5 km away from the nearest urban centre represents a neighbouring environment. The occurring social accessibility may be defined as a micro-connectivity: singular, noted spatial interactions are reflected in partial access to public road and transport, elimination of fencing, and easier access to labour market, local economy and community due to smaller radius between spaces. The majority of the camps represent only singular attributes of these features, with no guaranteed common access. A visual form of interaction may be observed in the case of Irbid, a long operating camp in Jordan: as the tents are being replaced with brick dwellings (United Nations Relief and Works Agency for Palestine Refugees in the Near East, Irbid Camp, access: 10.06.2018, source: <https://www.unrwa.org/where-we-work/jordan/irbid-camp>) the outer boundaries are blurring and the camp is 'resembling some of the urban quarters in Irbid'[5]. However, despite sixty seven years of existence, Irbid still remains an urban island-like camp, instead of a city-quarter.

## **THE LANDSCAPES OF (NO)ROOTING**

Refugee camps may be as well defined as 'camp-islands' in terms of suspension between 'from' and 'to where'. In the world of exile the rooting is no longer connected with the place of origin, but with the territorial recognition of the place of being [6]. Out of preliminarily analysed 160 refugee settlements, c.a. 30% is placed on Google Maps and described as a camp. This represents some degree of legitimization, and, somehow, confirms the inevitable process of camp identification. Nevertheless, most of analysed sites are anonymous, without direct neighbourhoods, as they are located in rural, borderland, or other uninhabited areas. Refugees grow their roots in non-recognised, non-existent places with no reference to any identified community.

## CONCLUSION

The main purpose of this paper was to draw attention to city forming features of refugee landscapes. The conclusions from the analysis are to a great degree consistent with the major trends observed in contemporary research on forced migration. The inclusivity of a refugee camp is understood in a simplified manner and reduced to the minimum, if not at all ignored. As far as sustainable planning is concerned it is only possible to mention places that require such intervention and not visible actions. Isolated location, lack of accessibility and openness determine almost all aspects of analysed areas. If we compare this to the basic forming features of human habitat settlement, we will not reach any of the minimal requirements, as there is a planned lack of main socio-shaping elements, such as labour market, refugee-oriented administration, local economy and services, as well as meeting areas. Allport has listed four situational requirements for an effective contact: 1) equal status of groups, 2) daily cooperation, 3) common goals, 4) authorities and law support [7]. In case of refugee camps none of the above seems to be present. The location and its third dimension – context – determine the camps as spatial non-places visible from the outside, and spatial all-places visible from the inside. This incoherence is evident in the contrast of perception. The permanent temporality of refugee settlements incites the emergence of pseudo-urban landscapes with huge spatial deficiency and island-like features, resulting in lack of connectivity and the rooting of refugees in non-existent places. Paradoxically, the temporality and mobility may be sustainable solutions. Image 3 gives an example of a refugee-settlement in the central part of Hamburg. Location of interim settlements in degraded, however socially valuable locations, can be a good solution in the first stage of starting a new life by refugees, as it is in the case of HafenCity. This solution is an example of a space organization that facilitates contact between newcomers and residents, offering the former a better chance of becoming a member of society.



*Image 3. The location of a temporary refugee settlement in HafenCity, Hamburg, as a part of sustainable city planning. By Agnieszka Wierzbicka. 2018.*

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## **TRANSFORMATION OF TOWNS LOCATED IN AREAS ANNEXED BY THE THIRD REICH (SELECTED EXAMPLES)**

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### **ABSTRACT**

After forces of the German Wehrmacht entered Poland, on the 8th of October 1939, the chancellor of the Third Reich – Adolf Hitler – issued a decree by which a certain part of the western territory of the Polish state as to be incorporated into the administrative borders of Germany. They were called "annexed eastern lands". Due to their value and significance to the occupants they were not damaged as badly as other areas during wartime operations. On the contrary. They were areas from which the Polish population was to be expelled, with a plan to have it settled by Germans. They had to be appropriately prepared for the arrival of the new residents. Hence, plans of the expansion and redevelopment of many cities and towns started to be developed at regional construction offices. There were plans to demolish current building tissue, or even to reorganise extant urban layouts. New industrial plants and public buildings, such as schools and police precincts, were being designed, with the intent to have them used solely by the soon-to-arrive German population. The article discusses the problem of the transformations that were associated with this and which took place either within urban tissue or that were architectural changes—such as the redevelopment of existing buildings or the construction of new ones. Three towns from the borderlands of Silesia and Lesser Poland—areas that have been a part of the Polish state since time immemorial and that have Polish roots—were selected as examples. It was decided to investigate the then-planned and, of course, carried out transformations in the area of Szczakowa, Chrzanów and Jaworzno. Not all of the development projects that had been planned were carried out. Some of them remained only on paper, because of the retreat of the German Wehrmacht and the end of World War II did not allow for their realisation. The location and temporal framework were, in this case, a chance to preserve historical urban tissue. Other projects were carried out only partially and were sometimes continued after wartime operations had ceased, due to their value to the public. Some of them are in use to this day. It cannot be denied that the spatial transformations that were induced during that period within the urban tissue of the cities located in areas that had been annexed into the administrative borders of the Third Reich are a form of post-war heritage, whose impact can frequently be observed to this day.

During the investigation of the subject the author studied current literature and performed archival research, including research at the State Archive in Katowice or the archive of the Museum of the City of Jaworzno or the Irena and Mieczysław Mazarak Museum in Chrzanów. Afterwards, the author performed on-site visits and comparisons of previously obtained materials.

**Keywords:** *history of architecture, planning, Jaworzno, Szczakowa, Chrzanów*

## INTRODUCTION

On the 1st of September 1939 forces of the German Wehrmacht entered Poland. Defensive operations were being carried out for the next several weeks with the intent to drive away the enemy's forces. A period of the German occupation of Polish lands took place after they had ceased. This lasted until the end of the Second World War in 1945.

According to a decree signed by the chancellor of the Third Reich – Adolf Hitler – on the 8th of October 1939[1], the conquered territories were divided into the so-called General Government (*Generalgouvernement für die besetzten polnischen Gebiete*) with a capital in Krakow and in which power was in the hands of general governor Hans Frank, as well as into so-called eastern areas (*eingegliederte Ostgebiete*). The latter were directly incorporated into the administrative borders of the Third Reich (*Das Dritte Reich*), also called Nazi Germany. These included the territories of Pomerania, the Poznań Voivodship, most of the lands of the pre-war Łódź Voivodship, the western part of the pre-war Krakow Voivodship, the northern part of the Warsaw Voivodship and the augustowski and suwalski *powiats* (counties or districts). Due to their worth and significance to the occupant (due to, for instance, their degree of industrialisation), they were not destroyed during wartime operations. According to the policy carried out by Hitler, which was based on providing Germans with "living space" (*Lebensraum*), these were areas from which the Polish population was to be expelled, with plans to settle Germans there in its place[2].

The areas incorporated into the Third Reich included, among other territories, the western part of the pre-war Krakow Voivodship. It was incorporated into the Katowice administrative district (*Regierungsbezirk Kattowitz*) of the Province of Upper Silesia (*Provinz Ober-Schlesien*). Chrzanów, Jaworzno and Szczakowa also found themselves in this area. During the period of German occupation they constituted a part of the Chrzanów rural district (*Landkreis Krenau*), which was located adjacent to the border with the General Government.

The German occupants were well aware of the economic significance of this industrialised western part of the Krakow Voivodship. This was proven by, among other things, the course of the fighting and assaults by German forces, which circled the area from the north and south. In this manner, all of the industrial plants and mines, as well as the historical urban layouts and the entire infrastructure, got into the hands of the occupants without sustaining damage[3],[4].

The conviction of the Germans that they were going to permanently stay in these areas was very strong. Due to this reason plans of expansion or redevelopment were being developed at regional construction offices for many of these cities and towns. It was planned to demolish existing urban tissue or even to reorganise existing, historical urban layouts. New industrial plants or public buildings were being redeveloped or designed, with the intent of being used solely by the arriving Germans.

For Chrzanów, Jaworzno and Szczakowa, the German occupation began already at the very start, during the moment of the annexation of these areas by the Wehrmacht on the 3rd and 4th of September 1939. After the military forces entered the towns, the first act was the changing of all of the names of streets and squares, signs, inscriptions and coats of arms to German ones.

This article has the goal of becoming familiar with and analysing the planned and actually implemented changes within urban tissue, as well as transformations of selected individual buildings in Chrzanów, Jaworzno and Szczakowa – cities located in areas incorporated into the Third Reich – during the German occupation of Polish lands during the Second World War.

## STATE OF THE ART AND RESEARCH METHODS

There is a sizable body of well-documented scientific literature describing the events that took place in Poland and across Europe during the Second World War. Information about Chrzanów and Jaworzno can be found in scientific monographs and numerous articles that were written on their subject. We should mention, among others, *Ziemia chrzanowska i Jaworzno* written in 1969 under the editorship of Janina Lewandowska, *Jaworzno: Zarys dziejów w latach 1939-1990* from 1996, under the editorship of Jerzy Zawistowski or *Chrzanów – studia z dziejów miasta*, volume II *Chrzanów współczesny* part I from 1999. Szczakowa, most probably due to its incorporation in 1956 into the administrative limits of Jaworzno as a district, does not possess a document that would provide a complete account of its history. Information concerning it appear in the abovementioned monographs, as well as in articles published by the Museum of the City of Jaworzno (Muzeum Miasta Jaworzna) in the form of the publication *Zeszyty Historyczne Miasta Jaworzna* (*Historical Bulletin of the City of Jaworzno* in English). We will find here a manuscript of *Monografia Szczakowej* by Adolf Tatarczuch, published by the Museum. Despite its immense factual value, it is not a work that meets the rigours of a scientific document. Nevertheless, it constitutes a very good starting point for conducting further research. A similar role can be played by *105 lat – historia Szczakowej*. It is a small publication of the Society of the Friends of the City of Jaworzno – Szczakowa Club (Towarzystwo Przyjaciół Miasta Jaworzna – Koło Szczakowa), a document under the editorship of Stanisław Łazarz from 2002.

During the investigation of the subject, the author familiarised herself with current literature and performed archival research. It was performed at, among other locations, the State Archive in Katowice (Archiwum Państwowe w Katowicach) or the archive of the Museum of the City of Jaworzno (Muzeum Miasta Jaworzno) and the Irena and Mieczysław Mazarak Museum in Chrzanów (Muzeum w Chrzanowie im. Ireny i Mieczysława Mazarakich). The State Archive in Katowice houses, among other volumes, the Records of the city of Szczakowa (Akta miasta Szczakowej). In a section concerning the Mayor of the city of Szczakowa (Burmiastrz miasta Szczakowej) (*Der Bürgermeister der Stadt Schakowa*), in the General Section (Dział Ogólny) and in the Construction and Housing Section (Dział Budowlano-Mieszkaniowy), can find highly interesting archival materials about the plans of the redevelopment of the city. In the archive of the Museum of the City of Jaworzno we can find materials about the construction of the power plant. Information concerning the redevelopment of the building of the *Polskie*

*Towarzystwo Gimnastyczne "Sokół"* ("Falcon" Polish Gymnastic Society in English) building into the *Haus der Deutschen Heimat* is located at the Museum in Chrzanów.

Simultaneously to the research work at the archives, the author performed on-site visits. The pieces of information that had been gathered were compared with each other, as well as with available aerial photographic materials.

## CHRZANÓW

For Chrzanów, the period of Nazi occupation began on the 4th of September, at noon, when the German forces of general Ernst Busch's VIII corps took the city. The city along with its surroundings was incorporated into the Krakow country district and put under the supervision of the occupying military authorities. In 1941 the name Chrzanów was changed to Krenau. During the same year the administrative councillor dr Cantner became the commissioner Landkreis head of administration. He commenced with the germanisation of the external appearance of the city. In order to highlight the achievements of the German government and to divert attention from charges of neglecting Polish municipal administration, efforts were made to redevelop or adapt some of the buildings to public needs. Two large, then-modern buildings taken from Jews were adapted into a city hall, while another into a police precinct. The municipal slaughterhouse was expanded, while the water and sewerage utility networks were extended, in addition to the improvement of street surfaces and fitting street lighting.

Among the notable buildings that were transformed is the redevelopment of a building of *Polskie Towarzystwo Gimnastyczne "Sokół"* ("Falcon" Polish Gymnastic Society – a Polish organisation founded during the period of the partitions focusing on the propagation of physical education, sports and a healthy life style) into the *Haus der Deutschen Heimat* at Poststrasse 24 (contemporary Sokoła 24 street). Its official opening took place on the 1<sup>st</sup> of August 1942. The *Haus der Deutschen Heimat* played the role of a representative centre of German cultural and social life. It also featured a hotel section meant for German guests and tourists, as well as a restaurant. The appropriate amenities made it possible for Nazi party meetings to be hosted there[5]. Wedding and birthday receptions were held there, in addition to holiday parties or national and state celebrations, such as Wehrmacht Day (*Tag der Wehrmacht*).

The author of the redevelopment of the "Sokół" building into the *Haus der Deutschen Heimat* was Karl Laabs – an architect fulfilling the role of the head of the city's construction department. The original facade of the building completely lost its character. The visually light form, which was composed of brick decorations and

a sculpted image of a falcon in flight, was replaced with a massive, heavy form featuring ornamentation cut into plaster, on which there was a swastika, a stylised coat of arms of the Third Reich, human figures and an inscription that read "*Haus der Deutschen Heimat*". The ground floor of the building featured, among others, a restaurant, an auditorium with a stage and a kitchen. The first floor featured guest rooms and residential spaces. All of the rooms were furnished in accordance with German standards and ideas. The *Haus der Deutschen Heimat* functioned until the

moment of the departure of the Germans from Chrzanów on the 19th of January 1945[6],[7].

## JAWORZNO

The German occupation administration in Jaworzno was directed by mayor Reder. According to Göring's ordinance of the 1st of November 1939, all Polish property was seized by the *Grundstücksgesellschaft*, a real estate fund. Factories, mines and all of the larger industrial plants of the entire region were placed under the supervision and authority of the General Trust Agency "East" in Berlin. Direct supervision of the industrial plants of Jaworzno and Szczakowa was performed by the mine inspector and factory leader (*Betriebsführer*) SS-Obersturmbahnführer Begman.

In 1940 all of Jaworzno's coal mines were placed under the management of the „Energieversorgung Oberschlesien Aktiengesellschaft” (EVO) stock company in Katowice. It was founded in order to expand the Silesian power plant, which was to provide electric power to the light metallurgy military production plant which was being built near Vienna. It constituted an important element of increasing German military capability. Care was taken of Jaworzno's mines in order to provide a stable supply of fuel for the energy plant. Some development projects from before the start of the war were completed, the mines were fitted with iron envelopes, while the usage of gutters and air and electric windlasses increased, with underground horizontal transport becoming electrified. Due to defeats on the frontlines towards the end of 1942 and in 1943 more serious plans, such as the construction of new mining levels or the installation of goaf equipment, were not carried out. From that moment on the occupants limited themselves to overexploitation[3].

Efforts to increase the power output of the existing power plant near the „Friedrich-Augustgrube” mine were made in March 1943. Afterwards, construction of the new "Wilhelm" power and heating plant (Kraftwerk), with an output of 300 thousand MW, was started (current name: Elektrownia Jaworzno II – Jaworzno II Power Plant). The forests located to the southwest of the city were selected as the site of its construction. According to plans, the first stage of construction was to be completed on the 1st of October 1944, while the entire power plant was to be finished in 1946. The slave labour of a branch of the Auschwitz concentration camp – "Neu-Dachs" – was used in the construction. Of the entire project, the Germans managed to complete the drainage of the site, he excavation work and the footing of the main building, as well as the footing of two concrete smokestacks. [8],[9], [14].

The "Neu-Dachs" camp was established in order to provide cheap labour to the energy industry in Jaworzno. The prisoners were put to work in, among other places, the local mines or in the construction of the power and heating plant. The complex of several dozens of timber and masonry bunkhouses, surrounded with a double barbed-wire fence, was built on land belonging to the commune of Szczakowa, between Dąbrowa Narodowa and the "Jan Kenty" ("Dachsgrube") mine. The site near the intersection of the Jaworzno-Katowice road with the one running between Jaworzno and Mysłowice not only provided good circulation, but was also located only a short distance away from the power plant that was being built. In November 1943 construction was finished on 14 bunkhouses, a hospital, a

kitchen, a clothing warehouse, a boiler house, a laundry house, toilets and baths, workshops and a foodstuffs storage building. The 6,6 ha site was surrounded by a double fence of electrified barbed wire. The camp's 8 guard towers were equipped with machine guns. A gate with the inscription "Neu-Dachs" led inside. Outside of the walls of the camp there were three buildings which fulfilled the function of barracks for the SS, a fire safety water reservoir, as well as garages and a guard house. The "Neu-Dachs" camp was established on the 15<sup>th</sup> of June 1943 and officially existed until the 17<sup>th</sup> of January 1945[3], [10].

## SZCZAKOWA

Szczakowa was also entered by the German Wehrmacht on the 4th of September 1939. Hans Zollna, who had been assigned as its mayor, arrived already during the same month. He focused a sizable part of his attention on the implementation of the Nazi nationality policy, particularly in terms of the settlement of Germans and so-called *Volksdeutsche* in Szczakowa. (In 1943 a group of 200 Germans was moved to Szczakowa from Bukowina for resettlement). For the purposes of propaganda, among other things, he reinvented the history of Szczakowa – as that of the town of Schakowa, with German roots.

In order to create the best possible conditions for the German population that was to arrive, the new mayor ordered a plan of the expansion of Szczakowa at the Katowice construction office. The new city centre was placed on a hill near the church. A central square with radially diverging streets was to be constructed there. There were plans to build a town hall, a post office, a municipal library, a cinema and an open-air swimming pool. The industrial plants were grouped in the eastern part of the city. The south-western areas were assigned for urban built-up areas. The old part of Szczakowa, due to the majority presence of Jewish houses, was assigned for demolition – green squares and lawns were to take their place. Plans were also made for the train station and the railway line, which were planned to be expanded towards the north, while the building of the station was to be remodelled in the direction of a more German character. Fortunately, the end of the Second World War put an end to the resettlement plans. The plans commissioned by Zollna were not carried out. He had only managed to demolish the buildings of the Jewish religious community. Two monuments: the Grunwald Monument and the Tadeusz Kościuszko Monument, were destroyed. The building of the former "Sokół" Gymnastic Society was converted into a restaurant. The cinema screening room, which had had a capacity of 200 seats, was remodelled and modernised [11].

Among the archival materials stored at the State Archive in Katowice there are design drawings. These include the plan of the redevelopment of the cinema of 1944-1945 by the architect R.W. Haase, as well as a design of 1942 of the mayor's official apartment. We can also find drawings associated with the modernisation of the local industrial plants there[12].

Due to increased cargo traffic (as a result of military operations), the Germans remodelled the Szczakowa railway station in the years 1940-1944, but only to a small degree. The remodelling included, among other elements, the construction of a new engine shed in the western area, a classification yard hump and new tracks.

The Germans resided in Szczakowa up to the middle of January 1945. Around the 15th of January they evacuated their families, while on the night between the 17th and 18th of January they fled the city in a state of panic[13].

## CONCLUSION

During the Second World War Chrzanów, Jaworzno and Szczakowa were located in the areas of eastern territories that were directly annexed into the administrative borders of the Third Reich. This was most probably caused by their economic significance. As it can be seen from the findings presented above, there was a very strong belief on the part of the German occupants that they were going to remain in the area forever. This is why numerous projects associated with adapting these centres to the new authorities were being planned. Not all of these plans were carried out. In order to germanise Chrzanów, Jaworzno and Szczakowa, the names of streets, squares, signboards, inscriptions and coats of arms were changed to German ones already at the start of the occupation, including the name of the town of Chrzanów to the German version – Krenau – or of Szczakowa to Schakowa.

In the case of Chrzanów the transformations were based primarily on changing forms of use, redevelopments or extensions of structures expropriated from the local Polish and Jewish population. Examples of this include the expansion of the no longer existing building of the municipal slaughterhouse and the redevelopment of the building of the *Polskie Towarzystwo Gimnastyczne "Sokół"* ("Falcon" Polish Gymnastic Society in English). On the scale of the entire city these small transformations and the changes of the forms of use of buildings made it possible for the historical tissue and layout of the cities to be preserved. In Jaworzno, due to the presence of numerous industrial plants, their extension was put into focus. Initially, these efforts included the modernisation of the mines along with a planned construction of a new power and heating plant, using the prisoners of the branch of the "Neu-Dachs" concentration camp as labour. The German occupants later limited themselves solely to overexploitation. The power and heating plant, built only partially during the occupation, was finished after the war on the basis of new plans due to its significance, which led to the further industrial development of the centre. In Szczakowa, despite individual changes, such as the demolition of the buildings of the Jewish religious community, the redevelopment of a cinema hall and converting the building of the "Sokół" Society into a restaurant, there were plans to redevelop the entire urban structure. The plan of the redevelopment of the city was meant to completely alter its layout and appearance. Thankfully, the end of the war brought an end to the German occupation, which prevented the existing historical tissue of the city from being destroyed.

The examples of Chrzanów, Jaworzno and Szczakowa that have been presented above show that the transformations of cities that took place in areas annexed by the Third Reich were of varying scale and character. Their location and the time limit in these cases were a chance for the preservation of the historical urban tissue. Other development projects were completed only partially and were sometimes continued after the cessation of wartime operations due to their value to the public. Some of these buildings are still used today. It cannot be denied that the spatial transformations that took place in this period in the urban tissue of cities located in

areas that were incorporated into the administrative borders of the Third Reich are a form of post-war heritage, whose impact can often be observed to this day.

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