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## FROM THE EDITORIAL COMMITTEE

We are giving you the next 26th (1/2019) issue of the Scientific Journal of the Faculty of Management at the Rzeszow University of Technology entitled “Humanities and Social Sciences”.

The aim of the Publisher is to raise the merits and the international position of the quarterly published by the Faculty of Management, that is why we are still developing the cooperation with foreign team of reviewers, as well as an international Scientific Council. The Editors have also attempted to apply for international databases; currently the quarterly HSS is indexed in **Index Copernicus Journal Master List, The Central European Journal of Social Sciences and Humanities (CEJSH) and ERIH PLUS**.

The Journal has been also included in the list of projects qualified for funding under the **“Support for scientific magazines program”**.

The articles published in this publication are devoted to the broader issues of the humanities and social sciences. They are the result both of theoretical and empirical research. The subjects covered vary considerably and reflect the interdisciplinary nature of the Journal. We do hope that the papers published will meet your kind interest and will be an inspiration to further research and fruitful discussions.

On behalf of the Editorial Board of “Humanities and Social Sciences” we would like to thank the Authors for sending the outcomes of their research. We would like to express particular gratitude to the Reviewers for their valuable feedback that greatly contributed to increasing values of the scientific publications.

With compliments  
*Editorial Committee*



Tamás ANTAL<sup>1</sup>

## **SOURCES OF LAW OF THE MODERN AGE URBAN HISTORY IN HUNGARY (1848–1990)**

The main goal of the author is to present a summary of the legal development of towns and cities in Hungary from the middle of the 19<sup>th</sup> century up to the end of communism in 1990. This article is not a political study but a history of the Hungarian public law, focusing on the local governance or its lack and the features of the public administration during the so-called bourgeois and socialist eras. It also contains a catalogue of the most significant Hungarian authors who published articles or monographs on this topic in the second half of the 20<sup>th</sup> century and in our time. The institutions mentioned in the text can be informative and comparable for many researchers of the states of East-Central Europe.

**Keywords:** legal history, public law and administration, Hungary, municipalities, local councils, 19–20<sup>th</sup> centuries.

### **1. INTRODUCTION**

I undertake to give a short overview of the history of Hungarian self-government institutions from the chapters of modern age, the aim of which is to present the most important sources of law and competencies. For reasons of space, it is impossible to strive for completeness; therefore I am trying to focus on the two great periods before 1990: the most crucial features of the bourgeois and the people's democratic (communist) eras. I am going to present the public law related and functional frameworks by using rules and council regulations either published, or to be found in archives, based on the example of self-governing (self-managing) organizations that came into existence on a territorial basis but were partially different in terms of content (villages, towns, capital city, privileged districts, and counties). In the course of working on the topic – referring also to the already published sources and publications – my aim was to make an image that might be appropriate to provide an overall picture on the change of self-government autonomy or the restricted autonomy in the last one hundred and fifty years not only in relation to one town but extending to more as well.

Within the research of the history of the Hungarian urban management of the indicated one and a half centuries, I consider it important to highlight the following monographies of history of law and their authors – without attenuating the merits of other authors. Researches commenced at the turn of the 19th and 20th centuries, in the glory days of positivist history

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writing by urban history monographies, among the authors of which such prestigious exemplars can be found as Szeremlei Sámuel (Hódmezővásárhely), Reizner János (Szeged), Szűcs István, Zelizy Dániel (Debrecen), Iványi István (Subotica) or authors and the famous editor Borovszky Samu of the series published between 1896 and 1914 under the title *Magyarország vármegyéi és városai*<sup>2</sup>. As a lawyer polymath, Ereky István was also a law historian. The comprehensive pioneer books on – public law history – researches, using these as sources after 1945, were firstly written by Csizmadia Andor (Csizmadia, 1940; Csizmadia, 1968a; Csizmadia, 1968b; Csizmadia, 1976), then Sarlós Béla analyzed the Hungarian public administration of the Dual Monarchy from the point of view of the power politics of the late 19th century (Sarlós, 1976). Ruzsoly József had his unavoidable works published (Ruzsoly, 1984; Ruzsoly, 1993; Ruzsoly, 1999; Ruzsoly, 2002; Ruzsoly, 2004; Ruzsoly, 2006b; Ruzsoly, 2016) within the framework of his lifelong work dealing with municipal and county local governments – called as “new Hungarian constitutional history” taken from German analogy by him. Apart from different university course books, the book of studies edited by Bónis György and Degré Alajos still represents an important overview of the past of domestic self-governance (Bónis, Degré, 1971). Hentz Aurél disserted on the personnel of the civil administration and the periods of domestic spatial planning (Hentz, 1973). Similarly to Bónis and Degré, there were several persons who mainly dealt with other subjects on history of law or history of politics, however, their works provided valuable additions to this field as well; without aiming to give an exhaustive list: e.g. Gerics József, Varga Endre, Eckhart Ferenc, Maday Pál, Sarlós Márton, Hajdú Lajos, Both Ödön, Horváth Pál, Szegvári Katalin, Vargyai Gyula, Pölöskei Ferenc (Stipta 2015; Kovács, Máthé, Hernádi, 1983).

Among the currently publishing authors *at the level of monographies*, Kajtár István researched the relations of the 19th century domestic urban self-governance in this field (Kajtár, 1992; Kajtár, 2003; Kajtár, 1998), while – among others – Stipta István researched the legal political background of the civil transformation of counties (Stipta, 1995b; Stipta, 2005) and in detail the operation of the Hungarian public administration court, which also affected the civil transformation of municipalities. Apart from the history of courts and infringement law, Máthé Gábor deals with other public administration and public law phenomena, too (Csizmadia, Máthé, Nagy, 1982, 2000, 2002; Gergely, Máthé 2000;

<sup>2</sup> Borovszky Samu published the data of the following towns in the 26 volumes of his classic series [*Counties and Towns of Hungary*] (Budapest, 1896–1914): Košice (Kassa), Gönc, Jasov (Jászó), Vel'ká Ida (Nagyida), Moldava nad Bodvou (Szepsi), Szikszó, Štós (Stósz), Turňa nad Bodvou (Torna), Subotica (Szabadka), Novi Sad (Újvidék), Senta (Zenta), Sombor (Zombor), Baja, Levice (Léva), Nová Baňa (Újbánya), Kremnica (Körmöcbánya), Oradea (Nagyvárad), Esztergom, Rijeka (Fiume), Rimavská Sobota (Rimaszombat), Rožňava (Rozsnyó), Dobšiná (Dobsina), Jelšava (Jolsva), Revúca (Nagyróce), Győr, Eger, Gyöngyös, Hatvan, Heves, Pásztó Tiszafüred, Krupina (Korpona), Šahy (Ipolyság), Banská Štiavnica (Selmecebánya), Komárno (Komárom), Balassagyarmat, Lučenec (Losonc), Nitra (Nyitra), Nové Zámky (Érsekújvár), Skalica (Szakolca), Kecskemét, Cegléd, Kiskunfélegyháza, Kiskunhalas, Nagykőrös, Szentendre, Újpest, Vác, Kalocsa, Bratislava (Pozsony), Trnava (Nagyszombat), Modra (Modor), Pezinok (Bazin), Sväty (Szentgyörgy), Kaposvár, Nyíregyháza, Nyírbátor, Kisvárd, Nagykálló, Carei (Nagykároly), Baia Mare (Nagybánya), Baia Sprie (Felsőbánya), Satu Mare (Szatmárnémeti), Bela Crkva (Fehértemplon), Vršac (Versec), Timișoara (Temesvár), Zrenjanin (Nagybecskerek), Velika Kikinda (Nagykikinda), Pančevo (Pancsova), Szombathely, Kőszeg and Sátoraljaújhely.



Máthé, 2004; Máthé, 2017). Schweitzer Gábor wrote a book on the capital municipalities (Schweitzer, 2010), while Varsányi Attila (Varsányi, 2013) and Varga Norbert revealed the institutions of the urban lieutenancy (prefecture) with municipality rights in the bourgeois era, and the latter author also analyzed other transformations of the mid-19th century Hungarian public administration (Varga, 2006; Varga, 2010). Horváth Attila examined the people's democratic (socialist) administration (Horváth, 1992; Horváth, 2010), while Blazovich László – along with his medieval urban history works – edited volumes on the operation of the local committees (boards) of Szeged (Blazovich, 2010; Blazovich, 2007), and Szilágyi György worked out the 20th century institution history of the same city (Szilágyi, 2003). Perhaps the writer of the present paper published monographies in the widest spectrum on the history of public administration of the past one and a half centuries, since – based on many archives researches on the legal institutions – he published a book on each of all the three subsystems: the pure people's democratic representation, the bourgeois public municipality and the Soviet council type management (Antal, 2011; Antal, 2010a; Antal, 2010b; Antal, 2009; see also: Antal, 2012a).

Hereinafter, I am going to provide an overview on the institution history of the civil period and the “existing socialism” of the Hungarian self-governments on the basis of publications which were made through *extensive archives researches*, by using or publishing numerous archives resources, in order to make the real content of urban self-government autonomy known not only from the background of legislation but also from the operating public administration.

## 2. SOURCES OF LAW OF THE BOURGEOIS ERA (1867–1948/49)

From the point of view of settlement public administration, the historic period following the Austro-Hungarian Compromise lasted until 1949, when the Constitution Charta was passed, which projects for the researcher a major organisational stability, the core of which in the all-time area of the country was not broken even by the Peace Treaty of Trianon (1920) [see the most authentic summary of the then Hungarian State in a foreign language: Csekey, 1944; also Máthé, 2017 (with Szabó I.)]. Only the first years, the half a decade between 1867 and 1872 was an exception, when the acts of 1848 were temporarily in force until the coming into force of the first Public Municipality Act, i.e. Act XLII of 1870, which can be considered as the beginning of an era.

The urban management of democratic representation, based on the revolutionary legislation of 1848, was a specific, transitional period of the 19th century Hungarian public administration history: self-government rights entitling free royal towns had not been so widespread and autonomous either before or after as in those couple of years examined. As a matter of fact, that freedom which – in spite of the previous drafts of 1843/44 and 1847/48 (Antal, 2011; Antal, 2013a) – described the urban (and the parallel township) public administration in the era of the laconic Act XXIII of 1848 did not recur until the present self-government system introduced in 1990. No such law has been passed up to now which – within a single “town act” – would have dealt consistently with the inner administration of townships and towns. However, the so-called April laws *separated* the types of territorial self-governments: decentralised public administration relations of counties, free royal towns, villages and districts with autonomic status (Hajdú, Jászkun, Fiume), which is a major merit even if all of them were planned to be temporary by the Parliament (Varga, 2012).

Narrowing the attention to the autonomous public administration of *free royal towns*, the three short periods of the implementation of Act XXIII of 1848 were the civil reformation of 1848/49, the constitutional attempt of 1861 and finally, the years until the coming into force of the reforms of regional public administration and the judicial matters, from the 1867 Compromise to 1872. Periods between them passed under the total or partial suspension of the constitutionality of the Hungarian state, which I am not going to analyse here (Ruszoly, 2002). The years also called the period of “pure people’s representation” were the closest to the understanding which was the most agreeable with the late order (feudal) traditions and with the democratic values worded in the 19th century in relation to local self-governance.

Since the deliberately wide decentralisation, which was the guiding principle in 1848, was not in the interest of the all-time governments (Sarlós, 1976; Stipta, 1995b) in 1867 and thereafter, the centralisation intentions – in other words: the nationalization of the public administration (Csizmadia, 1976; Sarlós, 1976) – were constantly present in the operation of the regional administration bodies of the country. Act XLII of 1870 was passed with this in mind, which served as the basis for our *unified county and urban public municipal system* (Stipta, 1995b; Stipta, 2005) existing until 1949, and so was Act XVI of 1871 on inner organization of villages and small towns with ordered councils. It was only the capital about which the Parliament consistently passed independent acts from time to time. Special committees dealing with administrative and self-government administration assignments, the *public administration committees* formed at each municipality operated from 1876, and in the same year 47 free royal and/or municipal towns were submitted to counties and the reformation of the still existing special districts (Acts V, VI, XX, XXXIII of 1876) was also completed. Following long preparation and procrastination, all these were modified by the new organisational and disciplinary law acts: Acts XXI, XXII and XXIII of 1886 – maintaining the core of the structure, strengthening the institutions underlying centralisation, in the origin of which there were lord lieutenants (prefects) (Varsányi, 2013; Varga, 2006; Stipta, 1995a) and virilism<sup>3</sup> from the beginning. In the long run, these latter laws formed the backbone of the regional administration, however, it is necessary to emphasize that the huge numbers of legal norms with different levels coming into existence in the administration and organs filled them with real content for public service (for the complete list of public administration organs see: Meznerics, Torday, 1937). These – and the rising subsystems of administration – are indicated the most transparently by the local organisational and operational rules, the passing of which was a right and at the same time an obligation for the municipalities.

*Virilism* was debated in its own era, but it was a frequent phenomenon in the second half of the 19th century in Central Europe; it came into the legal system of Hungary on the basis of Prussian and Austrian models after the 1867 Compromise, but there were also earlier examples from before 1848 of ambitions enabling those who paid the most taxes to have *public law privileges* in those regions of the country on which the German national legal solutions of the reform era (*Vormärz*) had a greater impact (e.g. Upper Hungary) (Stipta,

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<sup>3</sup> Virilism (*virilizmus*) was an institution introduced in 1872 modelled on the example of Austria, it gave direct influence and board membership of their own right to the persons who paid the largest taxes to county and town/village local governments according to the tax registers compiled annually (Act XLII of 1870, Act XXI of 1886). The boards in question were: municipal board (*törvényhatósági bizottság*) and town/village assembly (*képviselő-testület*).

2005; Antal, 2013a; Grünthal, 1982). The representativity of municipal boards organised partly on this basis was compatible with the then definition of democracy, since parliamentary, regional and self-government voting devoid of censuses did not exist in other countries of Europe either: country-wide and local forms of representation were almost everywhere influenced to a certain extent by the amount of tax paid by the citizen or real property ownership (Antal, 2010a; Woodward, 1939; Pollmann, 1985; Brandt, 1987; Kühne, 1994; Eöttevényi Nagy, 1913).

In the wake of diversified public law reforms commenced before the turn of the century and continued thereafter, the intention to further nationalize the county and township administration existed, but due to the non-passing of the obstructed bill in this field in 1891, all this could be constructed only *in principle* in Act XXXIII of 1891, which was not changed by the modifying Act XXVI of 1892 on public municipalities, either; moreover, an important amendment had been passed back in 1886, according to which municipality membership would have risen from six years to ten years following the newer national census. However, it did not come into force, and no change happened in this field until 1929 (Csizmadia, 1976; Antal, 2010a). Act LVIII of 1912 on urban development and assisting urbanisation could not be implemented due to the outbreak of the World War, although it could have assisted urban planning efficiently. It is strange, but history repeated itself: later, the provisions of Act VI of 1937 with a similar subject ended up the same way.

From the point of view of the topic, the Horthy era (1919–1944), named after the Governor, can be divided into two, well distinguishable parts: the decade after the first World War was a unique provisory period, since neither the necessary normative municipal reform, nor the general elections and the renewal of positions were carried out, although by the ratification of the peace treaty the state of war came to an end in 1921, and the other conditions of emergency regulation ended as well in 1923. In the public law stabilization, the government did not want to destroy the structure and operational principles of regional public administration, for this reason the correction had to be awaited until the end of the decade. Finally, Act XXX of 1929 and its implementing decrees brought seemingly important changes into the local level public administration as a kind of synthesis supported by the institutions of the previous municipality system and the modern science of administration – especially by changing the composition of municipal boards, by establishing petit assemblies, by extending the rights of lord lieutenants, and by modifying the disciplinary liability and the system of remedy (Csizmadia, 1976; Antal, 2010a; Antal, 2013b).

In spite of this, these laws *did not change the institutional basis*, only softened or aggravated the heritage of dualism. Village administration was not influenced relevantly either, which resulted in the system of urban public administration remaining normatively split: the 11 biggest towns were integrated into the municipal system at the same level as the counties, while the 45 towns with ordered councils (with the attribute “county” from 1929) gained legislation in the village laws (Hajdú, 2005), while keeping their “free royal town” title until 1945 – referring to the old days. Due to the fact that the Parliament did not overrule the (second) Municipality Act of 1886 but maintained its major part in force, and also because the act of 1886 did not affect all the provisions of the (first) municipality code of 1870, a unique, “multigeneration” legal survival and coexistence chain developed within the public administration of the local self-governments – county, municipal town and village. However, it was not only temporal continuity, but a more and more complicated structure, since regulation based on authorisation and government and ministerial level regulation predominating in the era made the otherwise cumbersome system of law sources

even more complex (Antal, 2015; Antal, 2016). Act XVI of 1933 aimed to divide the competences of the petit assembly and the municipal board and would have affected the system of administration bodies if it had come into force. However, this did not happen, in the end the reform of the administrative courts was not incorporated into the text, and the ongoing nationalization of the policy administration also prevented clarity within the institutions.

One of the main tasks of the so-called *wide coalition governance* following the Second World War was to recreate the regional public administrations, which was in the interest of both the left and right wing political forces. Parallel with the temporary appearance of the local organs of the Hungarian National Independent Front, the *national committees* (Csizmadia, 1968a; Ruszoly, 1993; Ruszoly, 2006b), the temporary national government issued regulations (decrees No. 14/1945 M.E. and 1030/1945 M.E.) in order to *transform self-governments* in the areas of the state which were not under the power of fascist leadership any more. These laws abolished, for example, virilism, which had been preserved in a so-called “mild” form in an anachronistic way in 1929, the position of old *iudex nobelium* (Pétervári, 2018a; Pétervári, 2018b) was reorganized into the position of chief notary, and the town council eliminated in 1929 was re-established again (Csizmadia, 1976; Máthé, 2017; Ruszoly, 2006a). The regulations of local administration having force of law were modified or substituted by decrees again, since the Communist Party gaining a leading role in the narrowing coalition planned a concept totally different from the traditional Hungarian one: organizing the Soviet-type council system.

### 3. LEGAL SOURCES OF THE PEOPLE’S DEMOCRATIC ERA (1949–1989/90)

Following the year of passing the Constitution of 1949 based on the Soviet model, the first Hungarian Councils Act, i.e. Act I of 1950 came into existence and reflected its era’s – called the decade of dictatorship of the proletariat – ideological, state and public administration theoretical features in all respects. The act was laconic: it consisted of one preamble, seven chapters and 66 articles within. According to its starting point, its aim was to place the best of the “liberated people”: industrial workers, working farmers and reliable intellectuals into the practice of the *unified state power*, via seemingly elected emissaries. It contained the public law institution taken over from the Soviet councils: the partially imperative mandate, by means of which the recall of the members of the council and the executive committees was made possible in theory (Toldi, 1977; Bihari, 1963; Kovács, 1959). The people’s democratic state concept was based on the principle called *democratic centralism*, which was in relation with the public law thesis according to which no branches of powers exist in the socialist states, there are only state functions and several bodies organized for practicing these functions (Máthé, 2017; Antal, 2009; Antal, 2012b).

Local governments fitted into the new type of state organization in a *hierarchical order*: until 1971 there were three levels in a subordinated and superordinated relationship with each other (county, district, settlement) and they were *de jure* subordinated to the Hungarian Parliament, the Presidential Council of the People’s Republic (quasi head of the state) and the council of ministers until 1954, then until 1971 mostly to the line ministries, then jointly to the government and the ministries. Following the recurring reorganisation of agriculture, district councils were abolished in 1971, only specialised agencies remained, however, in 1984 these also ceased their operation. Sections of Article 27 of the above-mentioned Councils Act set forth the execution of the laws and “upper regulations” regarding the *competence of the local councils*, the management and supervision of the subordinated bureaus of

state and government bodies, the protection of the order and public assets of the people's democracy, the protection of the rights of "workers", the issuance of mandatory orders to councils at lower levels, the annulment and the alteration of their ordinances or decisions, as well as the approval of the election and the recall of the members of lower level executive committees. Within the framework of their *economic leading activity*, they were expected to deal with the following assignments: the acceptance of local economic plans and budgets, the inspection of their execution, furthermore, the support of cooperative societies, and in the first years the management of the collection of crops (Beér, Szamel, 1951; Nagy, 1954).

The changing of the differentiated legal status of towns is to be noted as regards the *organisation of public administration*: placing them at the same level as districts and sometimes subordinating them to districts. Special positions in the former municipality system were abolished: up to 1954, even such big cities as Szeged or Debrecen had to get integrated into the county settlement network. The only exception was Budapest; the highlighted nature of the capital was not disputed, however, an independent act – like previously – was not passed in relation to the capital. Based on the "one village – one settlement" principle, local councils had to be established at each settlement, except for settlements with less than 500 inhabitants, which could establish joint village councils (Antal, 2009; Antal, 2010b).

The first Councils Act introduced the institution of *council executive committees*. In fact, in the previous city municipalities it was not unusual since their executive organ became a one-member institution only in 1929, when the mayor replaced the former collegial town council (Antal, 2015; Antal, 2016; Antal, 2012a). It was reasoned – which in fact was true – that in the previous structure, a large number of independent, parallel offices operated independently at each level and all this made the public administration chaotic and bureaucratic. By abolishing these, the aim was to achieve a more increased unity of local administration and the political manageability thereof. For example, the boards of guardians were simply abolished, their competencies were taken over partially by executive committees and partially by courts. The previously independent, specialised agencies, such as the municipal engineering, the urban management or the tax office, were incorporated into the inner departments of executive committees (Sári, 1979; Antal, 2012a). The uniformization of the public servant sector was to promote the standardization of the vertical separation of powers: the differences between self-government staff and state staff were not acknowledged either (Kajtár, 2003).

Considering the experience of the first years and regarding de-Stalinization (directives of the 3rd Congress of the Communist Party), the Parliament passed a new Councils Act (Act X of 1954) and at the same time new laws were made for regulations on the election of members of the councils. The *second Councils Act* set a sharper line separating the competencies of the two main bodies, highlighting the primacy of the council as a board, and the authorisation with which the executive committee generally replaced the council in between two of its sessions was omitted; thus it emphasized the different features of the executive committee and the plenary powers of the council, according to which the former was a governing unit while the latter was a *state power unit* (Nagy, 1954; Antal, 2012a; Beér, 1962). In the meantime, the councils of towns rose to the same level as district councils, while from economic and urbanisation points of view some towns were declared to have county rights and were thus directly subordinated to the Presidential Council and they – Pécs, Szeged, Debrecen, Miskolc – were taken out of the authority of county councils (Beér, 1962; Antal, 2009).

Before the reform of the constitution in 1972, the advantageous effects of the new economic mechanism<sup>4</sup> urged the leaders of the party to have the Parliament accept a *new Councils Act* (Act I of 1971). This was followed by the decision of the 10th Congress of the Communist Party, according to which the independency of local councils and the professionalism of their activity should increase, and at the same time their central management should become effective, deriving from the natural political concept that local interests can exist, however, only the central legal management had the entirely independent decision-making power. Nevertheless, along with the appreciation of self-governance, the state administration character remained highlighted, which was complemented by the main aims to increase the professionalism of office work, to enhance the personal liability of public servants and to abolish unproductive bureaucracy (Balogh, Izsák, 2004). Differently from the previous practice, significant emphasis was put on settlement development and fiscal policy: the new economic management presented an opportunity to provide the necessary funds and to manage resources in a more flexible way. The new allocation of materials meant the recognition of the differentiated development of council types: besides investments, more appropriations were planned to be provided for new services, commerce, educational and health issues. However, the status of cities with county rights was abolished and the affected towns remained only “county towns”, which was a change not only in the name: the possibility of becoming relatively independent from the counties was not granted for major provincial towns any more (Szilágyi, 2003; Hencz, 1973; Antal, 2009).

A major amendment of the third Councils Act was carried out in 1983, within the framework of Act II of the same year on the modification of the constitution, by law-decree Nr. 26 of the Presidential Council, finally followed by Act IV of 1985. In that respect, the district administrative level, which had operated without a representative feature after 1971, ceased to exist. The election of the members of the council within this period was carried out case by case or on the basis of amended laws, in other words no lasting permanent act on election existed. In the end, in the flow of change of public law and political transformation, Act XXXIV of 1990 upheld the existing local councils until the first democratic municipal elections (Szabó, 1991); it is an interesting twist of fate that not long before, by 1989, the draft of the fourth Councils Act was ready (see also the problems of legal transformation in a comparative view: Gábriš, 2018; Józsa, 2011).

Nevertheless, it is important to emphasize that in the era of “existing socialism” the main reason for the democratic deficiency of local (county, municipal, town/village) self-governance should primarily be searched for not in legislation, but in the constant presence of the *analogue one-party organisation*, which could aggravate or prevent the freedom of choice to a greater or lesser extent by means of extrajudicial mechanisms. Restriction took effect in some cases, in others it did not.

Briefly *evaluating the public law framework* of the activity of the Soviet pattern councils, I think that those who created this kind of central administration basically did not have an incorrect organisational viewpoint at the beginning of the 20th century; however, it is

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<sup>4</sup> The new economic mechanism was a modernization progress between 1968 and 1975. It was based on a complicated system of the mixture of socialist and traditional Hungarian economy, which finally made a remarkable take off in the domestic industry and agriculture. The similar plans became blocked in Czechoslovakia by the intervention of the member states’ army of the Treaty of Warsaw in 1968 (commonly called: “Prague Spring”).

necessarily true that it was not planned to be democratic. This statement is confirmed by the fact that in spite of changing to or returning to the self-government system, several institutions are still similar to the ones which existed during the council era (Antal, 2009). This is supported by Act LXV of 1990 on local self-governments itself (Petri, 1991), the structure of which exactly follows the structure of the third Councils Act (Act I of 1971) mentioned, and when reading the two texts (as they are in the official gazette), a lot of analogies or at least similar rules can be found. However, there is a thought-provoking difference in the concept: in the last two decades of the council era there was a successful effort to give up the principle of “one settlement – one council”, while the above-mentioned self-government act returned to the “one settlement – one self-government” organising principle, which is nowadays a disputable system (see for summary: Pálné Kovács, 1992; Pálné Kovács, 2011; Józsa, 2018).

#### 4. SUMMARY

The edification of the development of the Hungarian urban management of the *bourgeois era* is summarized by Kajtár István as follows: “the legislation of 1848 created a framework regulation, and in the decades following its creation it was highly exposed to the changes of direction in large-scale politics. In spite of the fact that Act XXIII of 1848 was always referred to among the values of 1848 when returning to constitutionality, the development of dualist urban law took a different route in 1870/72 and in 1886: with urban law divided into three categories, with restricted social-public law foundations, with strong government supervision, but with highlighted municipal-communal independence: with administration, assets, own legislation and independent symbols” (Kajtár, 2003). This valuable legal norm survived between the two World Wars along with an even tighter governmental tutelage, which was hallmarked by the institution of the lord lieutenant (prefect) – Bonapartist and French in its approach – the public administrative committee and an Austrian-Prussian patterned virilism.

By taking over the *Soviet-type councils*, a truly new chapter started in the history of local management. Its core – according to the cautious interpretation of Csizmadia Andor – was that the gentry of the township opened the gate wide for the representatives of a broad range of people in the meeting hall of county and urban virility. This system found new ways not only in relation to its organisation but also regarding its operation. Officers of the organisation and other workers came from amongst the people, operation got close to the working people, the supervision of which was ensured by laws. If there were any difficulties along the new roads, the roads themselves led forward (Csizmadia, 1976).

According to the then lawyers and ideologists, these councils fulfilled the highest level of state administration by combining the unity of state power and customary self-governance, which was restricted both politically and legally – for this reason it was made *de facto* into a type of self-management, this is what real democratic centralism became. At the same time, in contrast with the pleased, “official” approach of the scholars of the people’s democracy, the reasoning of Act XLV of 1990 – the first self-government act after the constitutional turn – had a *totally different* approach:

In 1949 it was historical disorientation that in Hungary the self-government type local organisations with century-long experience had to be abolished. The Hungarian council system, similar to the solutions of the Soviet-type state organization, became the local server

of the over centralised social organization and economy organisations favouring administrative systems. Over centralisation provided little space for local independence. Leaders of local actions were actually not the elected bodies, but the leaders of the councils, who were supposed to be directed manually by upper state bodies and who were subordinated to the local organisation of the monolithic state party directed from above as well (Official Reasoning of Act LXV of 1990 on Local Self-Governments (general part, par. nr 2).

One thing is certain: in the reviewed one hundred and fifty years, the urban self-governance autonomy was the widest between 1867 and 1872, in the short era of “pure people’s representation” based on the foundations of 1848, which was consistently narrowing until it disappeared during the time of the 1950 and 1954 Councils Acts. Following that, it was growing again, but it fully played its role again only in 1990. The question is whether the functional and not the theoretical balance of this current legal and political fulfilment will be so positive from the future as well.

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## **BEGINNINGS OF AN APPLICATION OF ART. 209 PENAL CODE IN THE PENAL CODE OF 11 JULY 1932 AND OF 1969**

**Abstract:** The subject of this article was to show when the current Article 209 of the Criminal Code was applied for the first time and what changes took place in its application until 1969. In the article a number of judgments that have been issued since the introduction of the notion of non-alimony in the penal code in 1932 were discussed. It was also described the form of committing a crime of non-alimony and the premises that should be fulfilled in order to be able to assign the perpetrator of a non-alimony offense; whether it was possible to assign a crime after fulfilling all the conditions currently in force to one parent or both parents (in the case when the maintenance obligation was imposed). Differences in formulations such as, for example, malice persistence, and an inability to satisfy the basic life needs of the person for whom the maintenance obligation was pronounced, were assessed. The profiles of authors working on the codification of criminal law including the non-alimony offense before 1932 and in 1969 were presented. It was shown who was involved in the crime of non-alimony and on whose behalf it could be committed. It was also presented the penalty for committing crimes in 1932. It was also cited which chapter remained unchanged from 1932 to 1982 (chapter on minors) repealed on October 26, 1982 after the introduction of the Youth Act.

**Keywords:** penal code from 1932, changes in the penal code from 1969, beginnings of application of art. 201 of the Criminal Code of 1932, penal code of 1969, article 201 of the old previous code.

### **1. INTRODUCTION**

Considering the importance of the current art. 209 of the Penal Code should be referred to its source, i.e. to its beginning when the penal code was first applied in the Act. No doubt the current art. 209 of the Penal Code was introduced for the first time by the Ordinance of the President of the Republic, Ignacy Mościcki, dated July 11, 1932, Journal No. 1932, No. 60, item 571 (Rozporządzenie..., 1932; Komisja Kodyfikacyjna..., 1930) of the penal code in chapter XXXI Crimes 0077 Against Care and Supervision under the article then 201 Penal Code. The Code entered into force on September 1, 1932.

Works on the creation of a criminal law project was entrusted to specially selected faculty members and then to the Criminal Law Codification section composed of ten people first and then 12 including eight professors and three judges from the Supreme Court and two MPs to the Sejm. Among these people there were: (1859–1924) president of the Criminal Chamber of the Supreme Court, president of the Criminal Section of the Codification

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Commission, Edmund Krzymuski (1851–1928) prof. JU Vice-president of the Criminal Division, Juliusz Makarewicz (1872–1955) vice-president of the Criminal Section of the Codification Committee, prof. JU, then prof. JKU., Aleksander Mogilnicki (1875–1956) secretary of the Criminal Division, Emil Stanisław Rappaport (1877–1956) judge of the Supreme Court secretary general of the Codification Commission, secretary of the Criminal Section of the Codification Commission, Wacław Makowski (Makowski, 1933) (1880–1942) prof. UW Vice-president of the criminal law section, clerk of the criminal law project, Adolf Czerwiński (1852–1937) retired president of the Court of Appeal in Lviv, Henryk Ettinger (1852–1929), lawyer in Warsaw. The Code had 295 articles contained in 42 chapters. This code was called the Makarewicz (Makarewicz, 1932) code from the name of one of the committee members (Juliusz Makarewicz, lawyer, senator, codifier, lecturer, educator, social worker).

The Code was distinguished by uniform, modern systematics. Written in a concise and transparent language, it was considered a masterful work. It should be noted here that the first work on the draft criminal code commenced in 1915 and then it was corrected in 1916, however, the first acceptance took place in 1922. Evasion of the obligation to maintain family members was a crime already in the penal codes of the partitioning powers and also found in art. 201 of the Criminal Code of 1932. The wording of this article differed significantly from the current content as well as from the content from 1969 to 2017, and from the current content revised in 2017, however some forms were preserved unchanged until 2017.

The then art. 201 of the Penal Code had the wording of § 1 (Kodeks karny..., 1932). Who, by malicious evasion of the obligation to pay for the maintenance of a close person, maliciously deprives the person of his or her deprivation of poverty or the need to receive support is punishable by imprisonment of up to 3 years or arrest up to 3 years, § 2 (Kodeks karny..., 1932) it is punishable by the perpetrator of the act specified in § 1 against another person, if the obligation to maintain it was confirmed by a final decision of the Court, § 3 The prosecution takes place at the request of the victim, and in case of death, caused by the offense specified in § 1 or § 2 – ex officio.

## 2. THE ANALYSIS OF CHANGES

When analyzing the first paragraph of art. 201 of the penal code of 1932 (Rozporządzenie..., 1932), it can be noticed that the form of malice contained in it and then persistence was preserved until 2017, which means that no crime could be attributed to this behavior. This is of course the first form but very basic, which required criminal liability. This responsibility was directed to the closest person and so it should be understood that the person cannot maintain himself or the child. In connection with the provision of art. 201 we find in the explanatory memorandum of the Codification Commission the following remarks: a society based on the institution of marriage and the family cannot take on those duties which by their nature fall on a smaller social group, called family. Society, on the other hand, cannot look indifferently at neglecting the fulfillment of such duties, negligence dangerous directly for the neglected person, and indirectly for the whole society. The essence of such a reprehensible act is the fact that the perpetrator is obliged to make a property payment to the victim, and the perpetrator of this duty does not fulfill it".

The original concept of the Codification Commission was more general, threatening to punish the failure to pay for the maintenance of another person, regardless of what occurred

between the perpetrator and the victim, as soon as such a duty arose for any reason. The Penal Code limits criminal liability for failure to pay for up to two accidents only. The first concerns such an obligation towards the closest people. The description of people closest to you can be found in art. 91 § 1. The second case requires that an obligation to pay for the maintenance of any person was found by the court with an appropriate ruling. In both cases, there must be a legal basis for the obligation. The condition of liability, mentioned in the instruction of art. 201 of the Penal Code is that the negligence of the obligation leads the person concerned to poverty or the need to use support, in other words, in addition to the funds received from the perpetrator who fails to fulfill his duty, the victim did not have other necessary means of subsistence. The second condition, in an act that is not mentioned, but which is understood by itself, is that the perpetrator can satisfy the needs of the aggrieved party. The concept of providing for subsistence covers the satisfaction of life's needs in relation to the normal life of both parties, i.e. the debtor and the aggrieved party. It is also worth mentioning here the voice to the Judgment of August 22, 1968:

The fact that the obligation to pay maintenance for children from the first marriage established a new family, and therefore has fewer opportunities to comply with the maintenance obligation imposed on it by the court, does not deprive him of the proceedings, consisting in paying alimony in a lesser amount than the sentence awarded, the features of the offense under art. 201 § 1 d.p.c. (Glossary: Wanatowska W. Glosa to the judgment of the Supreme Court of 22 August 1968, V KRN 444/68 and to the Supreme Court resolution of 18 June 1966, VI KZP 10/66).

Regarding the interpretation of the concept of "poverty", in the judgment of April 11, 1953 (IV K 356/52 OSN No. 1 of 1954, item 12), the Supreme Court recognized that it was tantamount to the concept of "deprivation" and to fulfill the child's situation deteriorates as a sign of a crime of not feeding. By order of the Supreme Court of February 2, 1952, Ko 416/51, the Court ruled that the notion of poverty was well known in the capitalist system that existed in 1932. Currently, at the time of this resolution in 1952, such a concept cannot be known and used because the People's Poland abolished the capitalist system and thus eliminated misery. At that time, the Supreme Court recognized that it was enough for someone to find themselves in poverty and not wait until they fall into poverty. Thus, the Supreme Court at that time believed that the system of the time guaranteed protection of a man in the moment of deprivation and not only at the moment of poverty.

At that time, the Supreme Court recognized that it was enough for someone to find themselves in poverty and not wait until they fall into poverty. Thus, the Supreme Court at that time believed that the system of the time guaranteed protection of man in the moment of deprivation and not only at the moment of poverty. According to the above, Article should be 201 p.c. interpret it broadly because it measures in a father who maliciously leads to the fact that his child's state falls below the level at which then the People's Poland had the right to demand that the parents maintain and raise their child. Another issue raised by the Supreme Court was issued on February 11, 1956. III Penalty 78/56 the decision of the Supreme Court as a result of an extraordinary review by the Prosecutor General of the People's Republic from the final judgment of the District Court in Elbląg of June 28, 1953 regarding the offense under art. 201 § 2 of the Penal Code. This position was changed by the Supreme Court after a few years by accepting that the mark "poverty" cannot be replaced by the term "scarcity" (resolution of the Supreme Court of July 27, 1959. IV KO 78/59 OSN

No. 11 of 1960, item 18). The initial form of malice, which was later replaced by persistence, concerned a particular behavior, i.e. malice or intentional action not resulting from reasons not dependent on the obligee and characterized by the desire to inflict on the next person a material harm, so that the closest person was brought to misery and thus to use with the help of other people or State Institutions. The concept of poverty at that time was the first and innovative term adapted to the then times and meant (as one would suppose at the moment) the same as satisfying basic life needs. This issue was recognized for the first time by the Supreme Court by issuing the Judgment on April 11, 1953. (IV K 356/52 OSN No. 1 of 1954, item 12) recognizing this concept and calling it "shortage" meaning a much worse situation of the child than before and thus before this state of affairs was created and thus for the purpose of fulfilling the features of the crime of not feeding, it was enough for the child's situation to deteriorate. This situation must have arisen, of course, only from ill will and not due to independent reasons, i.e. the obliged person had to lose his existing earning or living abilities and, not worsening his previous earnings, deteriorate the life of the person or people obliged to pay for maintenance. This behavior must have been malignant, and for a long time and as it was commonly accepted, a long time meant at least three months. The perpetrator by his behavior causes an unlawful state and maintains it for a long time (the so-called legal unity of the act). Therefore, in each case it should be examined whether there were real possibilities at a given time, i.e. whether the perpetrator could fulfill the obligation to pay maintenance and regularly pay the dues. The mere fact of not fulfilling a specific duty is not tantamount to evasion. In a situation where the obliged child does not pay them due to the lack of earning opportunities, for example, is completely unable to work because of sickness or disability and no material means, or the funds are sufficient to cover treatment and food, then we will not be they were dealing with abandonment, and thus there will be no question of evading the alimony obligation. Of course, this period did not mean in practice obligatory crime, because often obliged to show that despite earning income they do not show malice and ill will because the income only covers their keeping, of course, excluding health situations, i.e. this applies to healthy people and able to work. This situation lasted from 1932 to a virtually unchanged form until 2017 (only the amendment of the Penal Code in 2017 made that demonstrating persistence is irrelevant and it suffices that the period of non-payment of maintenance obligations would be three months). The first "change" of malice occurred during the amendment of the Penal Code Act of April 19, 1969, when the meaning of the word malice was changed, replacing it with the word persistence, and thus leading to inability to meet the basic needs of life. This situation must have arisen, of course, only from ill will and not due to independent reasons, i.e. the obliged person had to lose his existing earning or living abilities and, not worsening his previous earnings (Wyrok..., 1953; Wyrok..., 1956; Uchwała..., 1957; Uchwała..., 1959), deteriorate the life of the person or people obliged to pay for maintenance. This behavior must have been malignant, and for a long time and as it was commonly accepted, a long time meant at least three months. The perpetrator by his behavior causes an unlawful state and maintains it for a long time (the so-called legal unity of the act). Therefore, in each case it should be examined whether there were real possibilities at a given time, i.e. whether the perpetrator could fulfill the obligation to pay maintenance and regularly pay the dues. The mere fact of not fulfilling a specific duty is not tantamount to evasion. In a situation where the obliged does not pay alimonies due to the lack of earning opportunities, for example, is completely unable to work because of sickness or disability and no material means, or the funds are sufficient to cover treatment and food, then we will not be they were dealing with



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This form lasted until 2017. Next, it should be noted in paragraph 2 of the Penal Code of July 11, 1932, which stipulated that criminal liability was imposed on anyone who committed the act described in paragraph 1 in relation to another person, if the obligation to pay for it was confirmed by a final decision of the Court. The Supreme Court, by virtue of a resolution of November 14, 1957, stated that a person was convicted of an offense under Art. 201 of the Penal Code, it was necessary to make determinations that as a result of malicious evasion of the alimony obligation, the aggrieved party fell into actual poverty or was forced to use financial support. By the same resolution, the Supreme Court in its justification did not share the position regarding issued rulings of the Supreme Court especially (ZO 44/52, OSN 10/53 and 12/54) giving a broadening interpretation of art. 201 p.c. in terms of "poverty" and "the need to use support" in the present political and economic conditions of Poland, it should be dropped. In particular, the position (ZO 44/52) cannot be ruled out that misery was completely wiped out in the People's Poland, and that it was not only poverty, but the shortage of the person to whom the obligation to pay for maintenance was to be fulfilled, at that time brought criminal responsibility according to art. 201 p.c. on the malicious evasion of this obligation. The fact that the person entitled to alimony was in a shortage, i.e. in a situation where he has insufficient means of subsistence, only raises the civil liability (Ustawa..., 1932; Ustawa..., 1969; Bereźnicki, 1969) of the obliged person (Article 73 of the code). Criminal liability (Orzeczenie..., 1962) begins where there has to be a serious deprivation, already having the features of poverty or necessitating the use of support. The ruling of the Supreme Court dated June 5, 1962 states that "it is sufficient for" accepting scarcity that the means of the rightholder are not sufficient for self-subsistence, but it is not necessary to establish that the right holder did not have any means of subsistence at all".

Because the first of the above-quoted judgments of the Supreme Court uses (in the sense of the reference system in determining the nature of deprivation) the notion of justified needs. There is a consensus in the civilian literature that "justified needs should be determined individually, according to age, health status, location and other circumstances of each specific accident. Justified needs include, in particular, measures necessary to secure housing, clothing, meals, care in the event of illness, etc., as well as means of upbringing in children. "This paragraph was amended in the Penal Code of 19 April 1969 by specifying its definition and thus adding to its content that the prosecution of an offense under paragraphs 1 and 2 takes place at the request of a victim, social welfare authority or social organization Previous content was limited to the victim and in case of death caused by the offense specified in § 1 or § 2 – ex officio. This meant that the original version was solely the responsibility of the victim and other institutions took only legal steps in the event of

death, which occurred as a result of an offense specified in paragraph 1 or 2. This meant that the State Institutions took steps only when result of the lead to the misery of the person for whom he was obliged and then as a consequence to death. The condition was the death of the injured only because of bringing her to misery. The first amendment to the Act of 1932 was made by the Act of 19 April 1969 Dz.U. 1969 no. 13 item 94, which entered into force on January 1, 1970 and lasted until August 31, 1998. Chapter XI of the Penal Code of 1932 (Articles 69–78) on minors remained in force until the adoption of the Law on the Treatment of Juveniles on October 26, 1982. The Makarewicz (1932) Code was replaced by the Adrejev's Code.

As in the case of Makarewicz, Igor Anrejew was also a co-author of the penal code of 1969 and also a member of the International Association of Criminal Law AIDP and the chairman of this association in the Polish section. He was also the Honorary Vice President of this Association until 1989, when he was deprived of this title at the request of the Polish delegation at the General Assembly of AIDP, after revealing his participation in the case of General Fieldorf. He was also excluded from the Scientific Council of the Institute of Criminal Law. The so-called Adrejev's code provided for a fine, a penalty of restriction of liberty, lasting from 3 months to 2 years, imprisonment for a period of 3 months to 15 years, a penalty of 25 years imprisonment, life imprisonment (introduced from November 20, 1995) and the death penalty (suspended for 5 years from November 20, 1995), imposed for the most serious crimes committed by hanging or by shooting against soldiers. The death penalty could be imposed by the court interchangeably with the penalty of 25 years imprisonment and the penalty of life imprisonment (from November 20, 1995). Turning to the assessment and changes that took place in the penal code of 1969, it can be noted that the previous art. 201 of the Penal Code was changed and after 1969 he appeared under art. 186 p.c. Of course, this was only a numerical change, however, at that time it was impossible to find case law under Art. 186 of the Penal Code as an article on non-alienation. In the penal code of 1969, art.186 of the Penal Code was given the wording of paragraph 1 on Important noticeable changes. Whoever stubbornly evades the obligation to pay for the maintenance of a child, parents or other close person, and thus exposes them to the inability to meet basic life needs is punishable by imprisonment of up to 3 years, paragraph 2. The same penalty is imposed on who the act specified in paragraph 1 is admitted in respect of a person whose obligation to pay for maintenance was established by a valid or enforceable judgment of the Court, paragraph 3, Prosecution takes place at the request of the aggrieved party, social welfare body or social organization. Considering further the changes applied in art. 186 of the Penal Code immediately changes the paragraph 1 (the short changes to paragraphs 2 and 3 of the 1969 Code are discussed above), namely its content has been improved by adding "who persistently evades" by replacing the existing form of "who by maliciously evading" . The word malice has been replaced by the word persistence. From 1932 to 1969, the established case law and judgments by the courts stipulated that making changes to art. 201 p.c. it is necessary and raises the need to change its disposal. The project, based on the premises of criminality developed by case-law, replaces the previous determination of the effect to others, more adapted to the needs of criminal prosecution under conditions in which neither misery nor the need to use support are typical phenomena. The project also resigns from the subjective premise, which according to art. 201 p.c. there is malice. The further wording of paragraph 1 is clearly marked and extended by mentioning that a child, parent or other close person can be brought (Uchwała..., 1973; Wyrok..., 1994; Bojarski,

1994). There is no doubt that the persistent evasion of the obligation to pay for its maintenance actually harms the family, hindering or even preventing its proper functioning (see the Supreme Court ruling: OSNKW from 1971, item 111, from 1974). , items 45 and 1976, item 151.) The previous considerations concerned one parent, usually a father of children, who persistently or maliciously evaded the duty imposed on him, but the case was also expressed in the case-law concerning two parents who exposed their child. In this regard, the position was taken by the Supreme Court in the judgment of August 23, 1973 VI KZP 25/73 stating that the parents also have an obligation to meet their life needs when the children were placed in the State Orphanage on the basis of The provisions of the Juvenile Department Court by applying the then a The Supreme Court took the position that placement of a child or children on the basis of the family and guardianship code does not release parents from the maintenance obligation and it does not stop. If the court ordered the parents to pay the costs related to the maintenance of the child at the Children's Home, the parents were obliged to do so and, without complying with that obligation, they were subject to criminal liability under art. 186 of the Penal Code. Exposure to the inability to satisfy basic life needs (The basic needs include in particular the need for food, clothing, housing and necessary learning. When, as a result of a persistent failure to perform the maintenance obligation, it is necessary to provide – without a corresponding parental allowance – benefits by an educational institution or other persons in order to meet the said needs. The circumstance, therefore, that the educational institution fully provides for the maintenance of the child cannot be a reason for the fact that the child has not been exposed to the inability to satisfy basic needs. Of course, with the fulfillment of two elements persistent evasion of the obligation to pay for the maintenance of the child and exposing him to the inability to satisfy basic life needs. These two elements taken together form the basis for the penalisation of the act specified in art. 186 § 1 p.c. (Ustawa..., 1969; Wyrok..., 1995). In this form art.186 of the Penal Code survived until 1997, where it was amended by the Penal Code of 6 June 1997 and Art. 186 of the Penal Code was registered under art. 209 p.c.

### 3. CONCLUSION

The changes that have been made are positive, the legal situation in this regard is expected to improve in the future. Through this novelisation Poland positioned itself among the best examples of the European law in this regard.

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## **THE ATTITUDE OF THE PEOPLE'S REPUBLIC OF CHINA TOWARDS THE ANNEXATION OF CRIMEA BY THE RUSSIAN FEDERATION IN THE CONTEXT OF ATTACHMENT TO THE PRINCIPLES OF FOREIGN POLICY**

The aim of the article is to present and evaluate the attitude of the People's Republic of China towards the annexation of Crimea by the Russian Federation in the context of attachment to the foreign policy principles of the Middle Kingdom. The introduction shows Beijing's approach to the Five Principles of Peaceful Coexistence that are China's foreign policy doctrine. In the following parts was presented the reaction of the Chinese authorities to the annexation of Crimea by Russia and the most important circumstances conditioning it. The analysis was intended to answer the question whether Beijing's attitude during the Crimea crisis was a manifestation of embezzlement with the basic principles of the PRC's foreign policy? The answer to this question is positive. By annexing Crimea, Russia broke all the Five Principles of Peaceful Coexistence. Despite this, Pekin did not criticize it. On the contrary, it tried to justify Moscow's actions. During the crisis, Beijing wanted to achieve the greatest benefits and behaved according to a pragmatic approach, which is characteristic of the contemporary PRC's foreign policy. This confirmed that the Five Principles of Peaceful Coexistence are treated instrumentally by the Chinese authorities. When important circumstances speak for it, they are ready to dissent from these principles. This negatively affects the sincerity of Beijing's intentions on the international forum, and raises the question of its policy in the future, after China reaches a dominant position in the world.

**Keywords:** The People's Republic of China, annexation of Crimea, Russian Federation, principles of foreign policy, Five Principles of Peaceful Coexistence.

### **1. INTRODUCTION – PRINCIPLES OF PRC FOREIGN POLICY**

In the year of the annexation of Crimea by Russia has passed 70 years since the wording of the Five Principles of Peaceful Coexistence by the leaders of the People's Republic of China which are the basic principles of the foreign policy of the Middle Kingdom. These principles are mutual respect for sovereignty and territorial integrity, mutual non-aggression, non-interference in each other's internal affairs, equality and mutual benefit, and peaceful coexistence (Nathan). The conceptualization and adhering to the above principles by Beijing for decades resulted from several key factors. First of all, China has for centuries

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been the victim of external colonial interference, which has established its sense of humiliation in these activities. Second, Beijing aims to unite all lands considered Chinese and to preserve territorial integrity in the face of growing autonomous tendencies. Thirdly, competition for influence in individual countries between the USSR and the US caused the risk of another World War and at the same time limited the possibilities of China's international influencing. Fourthly, China promotes the concept of a multipolar world, thereby opposes to the US hegemony. American unilateralism poses a threat to China's security, and their interference in the internal affairs of states has a negative impact on the globalization of the interests of the PRC. Fifth, China is now one of the last constitutionally socialist states, and therefore it opposes the spread of democratic values by the West. The leaders of the Communist Party of China believe that each state should determine its own social and political system and the way of economic development. Sixth, China is creating itself as the leader of the developing world and promoting the concept of "South-South" cooperation. In contrast to the West, it is ready to cooperate with any political regime and tries to convince its partners that will not impose its beliefs on them.

The aim of the article is to present and evaluate the attitude of the People's Republic of China towards the annexation of Crimea by the Russian Federation in the context of attachment to the foreign policy principles of the Middle Kingdom. The main research problem is the answer to the question whether the attitude of China towards the Crimea crisis was a manifestation of misappropriation of the Principles of Peaceful Coexistence? The current administration of the PRC claims that China invariably acts internationally in line with these principles. China's attitude to the annexation of Crimea by Russia, however, denies this position. It can be assumed that the above principles are only of moral character. However, the PRC's foreign policy is not idealistic. On the contrary, it is highly pragmatic and conditioned by strategic determinants. It fits most into the paradigm of structural realism of an offensive type. Therefore, when strategic interests speak for it, Beijing is ready to betray these principles.

Most often, Beijing respects the Five Principles of Peaceful Coexistence, if the situation concerns remote regions, for which it has no significant geopolitical interests, going beyond standard economic cooperation. The further from China's borders, the easier it is for Beijing to combine the rhetoric of the above principles with promoting its own interests (Nathan). Referring to the above moral indications most often goes hand in hand with the interests of the PRC. For China, it is positive when other powers don't interfere with the internal affairs of states. This may lead to the consolidation of their influence at the expense of China. The interference with the use of military force is particularly harmful, because it can destabilize the region and hinder China's economic cooperation.

Beijing usually refers in its foreign policy to the Five Principles of Peaceful Coexistence. It does so even during internal conflicts that generate major humanitarian crises. In recent years, Beijing has blocked the decisive actions of the international community against dictators, for example during the crises in Kosovo, Sudan, Zimbabwe or Burma (Duggan, 2016). It should be emphasized that there was a wide-scale violation of human rights and even ethnic cleansing, war crimes or crimes against humanity. Therefore, it was justified to refer to the concept of "Responsibility to Protect" and conduct military operations to defend civilians residing in threatened areas. Although China formally supports the legitimacy of this concept, in practice it blocks the possibility of its implementation. The exception to this rule was Beijing's abstention during the adoption of resolution 1973, which sanctioned the introduction of a no-fly zone in Libya and the protection of civilians from the government

forces of Muammar al-Gaddafi. Under the pressure of the countries of the region, China did not use a veto and thus allowed NATO to carry out air operation in that country. However, when Beijing saw that it was moving towards a change of the political regime, they began to criticize those activities (Junbo, Zhimin, 2016). Also the PRC's attitude towards the civil war in Syria was significant. Beijing praised the effectiveness of the bombings carried out by Russia, because they were executed with the consent of the Bashar al-Assad government. This was despite the fact that it did not focus on attacks against terrorist groups from the so-called Islamic State, but against forces of anti-government rebel groups. At the same time, only between 2011 and 2017, Beijing and Moscow vetoed six times UN Security Council resolutions on Syria. In this way, they opposed to the imposition of sanctions on the criminal regime of Syria, even when it used chemical weapons against civilians (Zhou, 2017). On the other hand, China did not agree on activities in Syria of anti-terrorist coalition under the US leadership. It was afraid that it would lead to the overthrow of the existing government and the emergence of new authorities favoring the USA and the West.

## **2. RESPONSE OF THE PRC TO THE ANNEXATION OF CRIMEA BY RF**

Since the beginning of March, Russian soldiers in uniforms without emblems indicating their origin were illegally staying in the Crimea. They occupied or blocked Ukrainian military facilities (Macaskill, 2014). On 16 March 2014, a referendum was held on the territory of the Autonomous Republic of Crimea and Sevastopol. According to official results, 96.77% of voters were in favor of joining Russia. Two days later in the Kremlin, President Vladimir Putin signed an agreement with the chairman of the Verkhovna Rada of Crimea, Vladimir Konstantinov, prime minister of Crimea Sergey Aksyonov and mayor of Sevastopol Alexey Chaly on the entry of the Republic of Crimea and Sevastopol to the Russian Federation. The Chinese authorities have kept abstinence from this event. They abstained from criticism, even though it clearly undermined the Five Principles of Peaceful Coexistence. It was a consequence in relation to earlier events. During the disputes between Russia and Ukraine over the transmission of gas in 2006 and 2009, Chinese authorities and state media refrained from criticizing Moscow's actions, even though they undermined the sovereignty of Ukraine. Also, later hybrid attacks by Russia in Donbas were not openly criticized by Beijing. The Chinese authorities consistently presented a restrained and moderate attitude towards Russia's actions in Ukraine (Arduino, 2017). Beijing even tried to defend Moscow by pointing out that its policy was a consequence of the "historical prerequisites" existed between Russia and Ukraine. It also said that the West was partly responsible for the events in eastern Ukraine. This was the reference to the interference in the internal affairs of Ukraine, by supporting anti-Russian color revolutions (Lanteigne, 2016).

The Western powers tried to condemn the referendum in Crimea in the UN Security Council and its subsequent annexation by Russia. It was obvious, however, that these actions were blocked by a veto from Moscow. Beijing decided to refrain from voting on resolutions. Also during the vote on UN General Assembly resolution 68/262 on the territorial integrity of Ukraine and the Crimean crisis, China abstained. Beijing did not even issue an official statement regarding the work on resolutions on the Crimea in both UN bodies. When journalists asked a representative of China at the UN Li Baodong about the issue of Crimea, he replied: "We are paying very close attention to the situation in Ukraine" and "We hope all parties can calmly maintain restraint to prevent the situation from further escalating and worsening. Political resolution and dialogue is the only way out". (Reuters,

2014) China did not decide to vote against its strategic partner, which is Russia (Junbo, Zhimin, 2016), but on the other hand it did not want to support it, because it would be an outright strikethrough of the Five Principles of Peaceful Coexistence. Pekin was also afraid that such action would mobilize separatist movements in China, mainly in Tibet and Xinjiang province, and contribute to consolidating the separateness of Taiwan. It also did not want the recognition by the international community of the annexation of Crimea to strengthen separatist movements in different parts of the world.

During the Crimean crisis, Beijing did not want to engage politically more significantly. In the conflict between Russia and Ukraine and the West Beijing was pretending to be a neutral observer. However, China was interested in avoiding the escalation of this conflict. Therefore, it opposed the economic sanctions imposed by the West on Russia. Beijing argued that such sanctions would be ineffective and would in no way bring the parties closer to resolving the crisis. China was most concerned about the intensification of military activity in Ukraine and possible military support to it by NATO states. Therefore, it wanted the conflict to be solved through diplomatic channels. For this reason, Beijing proposed a three-point de-escalation plan for the conflict. It postulated for the establishment of an international mechanism to reduce tensions, restraint of all parties to the conflict and focus on regional economic assistance (Lanteigne, 2016).

As previously mentioned, Beijing signaled an understanding of Russia's attitude towards Ukraine, pointing to its historic causes. This has made it easier for China to tighten political, economic and military relations with Russia. At the same time, Beijing expressed its willingness to maintain friendly cooperation with Ukraine as well. It tried to convince the authorities that it respected the independence, sovereignty and territorial integrity of this state (Reuters, 2014). Such an attitude can be regarded as a policy of evasion or a specific manifestation of hypocrisy or even diplomatic schizophrenia. In fact, China's attitude to Russia's actions in eastern Ukraine was one of the most serious violations of the Five Principles of Peaceful Coexistence. Beijing rejected the possibility of condemning Moscow for annexing Crimea and later supporting the rebel forces fighting in the Donbass (MacDonald, 2016). Thus, it undermined the sincerity of its intentions towards the international community and respect for the principles of sovereignty, independence, territorial integrity, equality of states, non-aggression and non-interference in internal affairs.

The symbolic presentation of a different approach of China and Western countries towards Russia's activities in Ukraine was the celebration of May 8, 2015 in Moscow, the 70th anniversary of the victory over Nazi Germany. For President Vladimir Putin, this was an opportunity to demonstrate Russia's strength by organizing a great military parade. The guest of honor of this ceremony was Chinese President Xi Jinping. The leaders of China and Russia together admired the display of individual elements of Russian military equipment. It could have been read as China's consent to Russia's militaristic policy towards Ukraine. In contrast to Beijing, Western leaders boycotted participation in the celebrations due to the Russian annexation of Crimea and military operations in Donbass (Tharoor, 2015).

### **3. CIRCUMSTANCES OF THE ATTITUDE OF THE PRC TOWARDS THE ANNEXATION OF CRIMEA BY RF**

It should be emphasized that China has significantly benefited from the international consequences of the annexation of Crimea by Russia. First of all, it positively affected the



position of the PRC in strategic rivalry with the USA. Russia's actions forced the United States to focus more on Eastern Europe. Washington has engaged in efforts to support the political and military reinforcement of NATO's eastern flank. This has, to some extent, diverted its attention from China's key East Asian region, particularly Southeast Asia, in which the PRC is trying to consolidate its influence. After the annexation of Crimea in the US security strategy and strategic documents of NATO, the destabilizing actions of Russia in Eastern Europe were described as the main strategic challenge for the West (MacDonald, 2016). Somehow it softened the "Pivot" to Asia announced in 2011 by President Barack Obama. It is worth noting that the attitude of Moscow and Beijing towards the West differs significantly. Despite the structural weaknesses and the limited development perspectives, the Russian authorities decided to pursue a tough policy, the main manifestation of which are actions towards Ukraine aspiring to the West. In this way, Russia wants to show that the West must reckon with it (Snetkov, 2017) and respect its sphere of influence. In practice, however, the deepening conflict with the West has accelerated the economic weakening of Russia. China presents a much more prudent and restrained attitude towards the West, including the US. Beijing realizes that the American turnaround towards Asia is primarily focused on stopping China's expansion. Nevertheless, the Chinese authorities have not reacted aggressively to the US policy of containment in the region (Kai, 2017).

It should be emphasized that China and Russia have a common strategic interest, which consists in counteracting the hegemony of the United States and the dominant NATO military position in the world. The Russian authorities see the growing power of the PRC, which is gradually starting to compete with the US for the role of the world leader. For Russia, it is important that, unlike in the United States, China is in favor of a multi-polar international environment. Russia is interested in influencing the formation of a new world order, which can be ensured by close cooperation with China. The Kremlin is convinced that with the world's leading role of China it will be able to gain a much better position for Russia than with the leadership of the West (Leichtova, 2016). Tensions between Russia and NATO caused by the annexation of Crimea encouraged Russia to work more closely with China on the defense issues. This mainly applies to joint sea exercises. In Russia's Black Sea port of Novorossiysk the joint command center for the exercises has been set up. On May 20, 2014, the third major joint naval exercises began – "Joint Sea Drill" 2014 in the East China Sea (Lin, Singer, 2014). The "Joint Sea Drill" exercises 2015 took place for the first time in the Mediterranean Sea, and "Joint Sea Drill" 2017 in the Baltic Sea (Higgins, 2017). This cooperation is clearly aimed at the domination of the United States and NATO in these waters. In recent years, the question of arms trade between Russia and China has changed significantly. For decades the USSR and later the Russian Federation was the main supplier of military equipment to the PRC. Currently, China practically no longer needs arms from Russia. It can copy virtually every Russian military equipment and has itself become an important arms exporter (Donaldson, Noguee, Nadkarni, 2015). Nevertheless, in March 2013, China ordered 24 Su-35 multi-role fighters and four submarines from Russia (Bitzinger, 2015). Despite the growing cooperation in the field of defense between China and Russia, it can't be assumed that these countries will establish a lasting military alliance. They are still competing with each other, which primarily concerns the Central Asia region. In addition, it is possible that growing in power, overpopulated and in need of energy resources China will also have rising geopolitical aspirations for unpopulated and resource-rich Siberia and the Russian Far East (Black, 2015).

Also in the economic area, China has become the main beneficiary of the Crimean crisis. The sanctions imposed on Russia by the West have significantly depleted the possibilities of its trade cooperation with the European Union and the United States. This forced Russia to intensify cooperation with other partners. The neighboring China has become a natural direction (Copper, 2016), with which in 2011 Russia signed an agreement on strategic partnership. In addition to the geographical proximity, a number of other factors speak in favor of the strengthening of economic relations. Above all, the PRC has significant budget surpluses that allow it to implement large-scale foreign investments. In addition, it is a dynamically developing economy in need of energy resources, which are in turn the main export commodity of Russia. Russia, in turn, is a large, absorptive market, which gives Chinese entrepreneurs significant export opportunities for industrial goods. Closer economic cooperation between countries, with a deepening difference in potentials and a specific resources-commodity structure of trade, means that Russia is beginning to be perceived as a "junior partner" of China (Copper, 2016).

The diversification of oil and gas supplies by the European Union countries resulted in a reduction of Russia's budget revenues. Moscow tried to quickly fill the deepening gap, which is why it was looking for other recipients, ready to make bigger negotiation concessions. Russia was particularly flexible towards the Chinese proposal to lower prices for energy imports and get access to upstream development projects. The most serious undertaking was signing a USD 400 billion worth, 30-year-contract between Gazprom and the China National Petroleum Corporation for the purchase of Siberian natural gas by China. Previously, the Siberia-Daqing project was unsuccessfully negotiated for 19 years. The Crimea crisis and Western sanctions against Russia led to a quick finalization of negotiations. China has also obtained permission for direct investments in Vankor oil and gas fields in eastern Siberia, as well as into the Arctic Yamal LNG project. Exploitation of new natural gas and crude oil deposits in eastern Siberia and the construction of gas and oil pipelines from Russia to China gives the prospect of long-term export of energy resources to the Middle Kingdom (Perovic, 2009). In May 2014, China and Moscow also signed a number of other agreements, including the areas of financial assistance, trade, infrastructure and agriculture. In the Memorandum of Understanding, Beijing pledged, among others, to grant a loan of USD 6 billion for the construction of high-speed railway (Arduino, 2017).

At the end of 2013, President Xi Jinping presented flagship international economic projects, i.e. "One Belt, One Road" initiative called "New Silk Road" and Asian Infrastructure Investment Bank. For Russia, these projects posed a risk of further strengthening of China's economic position in Asia, also at its cost. However, the conflict with the West caused that Russia supported both initiatives and expressed its willingness to join them (Wan, 2016). Moscow recognized that enhanced cooperation with China could be a panacea for deteriorating economic relations with the West. In addition, it considered that the proposed projects could lead to a weakening of the influence of Western countries in Asia, mainly the United States. This concerned both the land territory and the adjacent reservoirs, primarily the seas of the Indian Ocean (Chenoy, Kumar, 2017). China also proposed establishing a development bank for the Shanghai Cooperation Organization, which it has dominated. This proposal was particularly problematic for Russia, which was afraid of weakening its position in Central Asia. Russia, however, was aware that regardless of this project, rapidly growing China would still increase its influence in the region (Fernandes, 2014). The conflict with

the West motivated Moscow to support this project (Chan, 2017), hoping that Beijing would respect the basic interests of Russia in Central Asia.

It is also worth looking at the problem of the annexation of Crimea in the context of the economic relations between China and Ukraine. In 2013, Ukraine became the new strategic economic partner of the PRC. For the USD 10 billion previously invested by China in Ukraine, Beijing proposed additional investments for the sum of USD 8 billion. Officially, these funds were to be used for the development of the Ukrainian economy. However, partners discussed the possibility of investment of Chinese companies in deep-water port on the Crimean Peninsula. It was to be an important transport point between China and Europe. China has also invested USD 2.6 billion in the agricultural sector in Ukraine to increase its productivity. The PRC wanted to become an important recipient of Ukrainian agricultural products. Contrary to appearances, the Crimean crisis did not threaten China's investments in Ukraine. This is due to the fact that Ukraine is now more in need of Chinese economic support as well as Beijing's mediation in the conflict with Moscow. In March 2015, China offered Ukraine another USD 15 billion in loans for housing. It also suggested the possibility of investing additional funds in the aviation and IT sectors. After the annexation of Crimea by Russia, trade between China and Ukraine also increased sharply, over a year by more than 50% (Copper, 2016).

Despite numerous benefits, Russia's action in eastern Ukraine is problematic for China because it negatively affects the perception of the sincerity of its intentions in the international relations. Earlier, Beijing has repeatedly criticized the interference of the powers in the internal affairs of states (Lanteigne, 2016). During many internal conflicts, it preached its attachment to the Five Principles of Peaceful Coexistence in the United Nations. At the same time, China blocked the possibility of imposing sanctions on inhuman regimes, even though it could contribute to faster resolution of conflicts. On the other hand, Beijing did not decide to condemn Russia for violation of all the Five Principles of Peaceful Coexistence. The resulting awkwardness is also noticeable in regional cooperation, mainly within the framework of the Shanghai Cooperation Organization. In the Declaration of Dushanbe in 2000, member states influenced by China inscribed basis of cooperation based on respecting the internal policy of each state. They agreed that anyone could not interfere in the internal affairs of states, even under the pretext of humanitarian intervention or the protection of human rights. They also advocated respect for territorial integrity and peaceful resolution of conflicts. These rules have been repeated many times at the next SCO summits (Kiez-kowa, 2016). During the Crimean crisis, China despised these principles, which further weakened the already fairly façade platform of cooperation.

#### 4. CONCLUSION

The Five Principles of Peaceful Coexistence were used for decades by the Chinese authorities in an instrumental way. The historical humiliation of China by the imperialist policy of the great powers, was to be transformed into creating the Middle Kingdom a moral power in the period of its political and economic weakness. At that time, China was looking for partnerships in third world countries to promote anti-imperialist policy (Harnisch, 2016). The Five Principles of Peaceful Coexistence are still the official doctrine of the PRC's foreign policy. Chinese authorities invariably claim that non-aggression, non-interference in internal affairs, respect for territorial integrity, equality of states and peaceful cooperation

based on the benefits of all parties are still pillars of their actions in the international relations. The example of Crimea showed, however, that they are not independent of circumstances affecting the profitability of their practical observance (MacDonald, 2016). Modern China is significantly different from that from a few decades ago. The historical burden of humiliation is being replaced by an increasing sense of strength. It is worth recalling the words of the Minister for Foreign Affairs Wang Yi, who in three words characterized China's contemporary foreign policy: confidence – resulting from strength and prosperity, backbone – resulting from national pride, and generosity – resulting from self-confidence of an old civilization (Chen, 2016).

Moscow's political move towards Beijing is to protect Russia from the negative consequences of Western sanctions imposed on it after the annexation of Crimea and military activities in Donbass (Arduino, 2017). Beijing has well interpreted this attitude of Russia, giving up criticism of its partner. China decided that this attitude could bring it a number of benefits, what actually happened. However, China will find it increasingly difficult to maintain good relations with Russia if its policy becomes more and more determined and confrontational. It will be even harder for Pekin to promote the Principles of Peaceful Coexistence in the international relations (Kiezkowa, 2016). Russia's current foreign policy harms all of these principles. This, in turn, shows that China's is ready to follow them only when it may serve its own interests. It is also highly probable that after achieving a dominant position in economic, political and military field, China will also indulge the violation of the Principles of Peaceful Coexistence. This will apply to the situation when the strategic interests of the Middle Kingdom will be at stake. Such a scenario suggests, for example, an increasingly firm attitude of China towards the countries of the South China Sea basin.

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## **PROBLEMS WITH INNOVATION. THE ANALYSIS OF REGIONAL INNOVATION SYSTEMS IN POLAND**

The article takes up the issue of evaluation of innovation policy implemented by the Polish authorities since 2000. The unit of the analysis is the regional innovation systems, implemented and funded in accordance with the directives and from EU sources. On the basis of the analysis of secondary data, performed by the method of desk research contained in the report of the Polish Agency for Enterprise Development, rankings of the Organization for Economic Cooperation and Development and the European Union, the author concludes that in Poland, the innovation policy is not effectively implemented. This is mainly due to specific economic and social circumstances, which are different from those assumed, among others, in the Lisbon Strategy. Because in Poland there is no innovation potential, which by assumption should be the proper addressee of innovation policy, the funds placed on stimulating innovation result in the decrease in the quality of research and development activity and the displacement of private funds. Critical evaluation of innovation policy implemented at EU beck and call leads the author to reflect on the question whether at all it is possible for Poland to become innovative economy.

**Keywords:** innovation, innovation policy, regional innovation system.

### **1. INTRODUCTION**

Over the last two decades, innovation has been gaining in popularity as one of the most desirable attributes of economies of developed and developing countries. As the result of engagement of international organizations: first, the Organization for Economic Development (hereinafter OECD) since the mid-1990s, also the European Union (hereinafter EU), there has been global diffusion of the idea of innovation as a remedy for the problems of countries that are facing economic recession. The OECD strategy had its scientific legitimization: it was the concept of European tradition of technology studies, more often referred to as innovation studies, initiated in the late 1970s by British economist Ch. Freeman. From this perspective, innovative activity of companies and research centres is perceived as an effective way of increasing economic competitiveness of countries, and as a result, citizens' prosperity. In the late 1990s, as a result of intensive growth of research programmes financed and coordinated by the EU, processes legitimizing the idea of innovation were intensified. One project concerning innovative policy, *Targeted Socioeconomic Research*, was initiated in 1995 (Lundvall, Borrás, 1997).

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## 2. ORIGIN OF REGIONAL INNOVATION SYSTEMS

At the turn of the 21<sup>st</sup> century, the development of national innovation systems became member states' priority task from the point of view of innovation studies and the strategies of international organizations such as the OECD and the EU. The motivation for that was Finnish success story, mainly illustrated with the Nokia concern. *The Lisbon Strategy* adopted in 2000 (Czerwińska, 2004) assumed radical economic transformation of the EU, which was expected to defeat the USA and Japan in the innovation competition. The *perpetuum mobile* of European economic explosion was identified with research carried out in areas of socially useful knowledge. The strategy was equipped with numerous directives, of a more regulatory character than necessary (Okoń-Horodyńska, 2014). The EU policy assumed that all member states would implement the innovation-based model of economic development. Innovations, in turn, were planned with the emphasis on procedural and systemic thinking, marginalizing the very essence of creating innovations and the mechanisms of their diffusion. Thus, *the Lisbon Strategy* (Okoń-Horodyńska, 2014) included multiple directives which according to economists were exceedingly regulatory. Incessantly since the year 2000, EU policy has been concentrated on the creation of regional innovation systems (hereinafter RISs), which enforce institutionally the collaboration with the private sector and the research and development (hereinafter R&D) sector through various institutions controlled and coordinated by the state. In accord with the interpretation of innovation studies, a regional innovation system is a system of interactions between actors influencing innovation processes in the region. Its participants are entities representing spheres such as science and education, R&D, industry, finance, and public authorities. Institutions that belong to an RIS are e.g., universities, science and technology parks, clusters, and first of all, private enterprises. In the early 1990s, the idea of RISs was borrowed by the epistemic community related to the OECD, especially by B.-Å. Lundvall, from the concept of competitive advantage of nations by M.T. Porter. It was B.-Å. Lundvall who characterized an RIS as “an interactive process taking place among many different actors. What is emphasized is that companies do not engage in innovative activity in isolation; hence, innovation should be perceived as a group phenomenon” (Malerba, 2004, 249). Because the RIS concept was not designed for areas with low industrialization level, issues concerning places where collaboration does not exist as a result of competition between companies or of different fields of economic activity were marginalized. Nevertheless, attempts to implement the concept are made in many places like that. Nowadays, RISs are the basic structure in EU innovative policy. It is worth pointing out that as part of Framework Programmes (which are the main tool used in the development of EU innovation potential), Programme 7 implemented in the years 2007–2013 involved the total expenditure of 50.5 billion euros, and the budget of the next programme, being implemented in the 2014–2020 period, is estimated to be approx. 80.2 billion euros. Financial support received through the OECD and the EU promoted quick, global diffusion of innovation systems. However, in many countries this tool is an administrative instrument whose aim is to coordinate relations that do not yet exist and are not sure to exist in the future. This can be confirmed by the assessment of Polish innovative policy through desk research, mostly concerning data included in Polish Agency for Enterprise Development reports and OECD or EU rankings.



### 3. POLISH INNOVATION POTENTIAL

The discussion of this issue should begin with some introductory comments. First, although for more than a decade Poland has been taking part in international comparative studies of innovation potential using *the Oslo Manual* methodology (OECD, EUROSTAT, 2005) and in source literature, mostly represented by economists, Polish innovation system is classified as a system in the course of transformation, the available empirical data shows that the system is actually *in statu nascendi*. Indeed, there exist some component institutions of the system, but there are no relationships between them. It seems legitimate to make a thesis that as a result of the need to allocate financial resources from the EU devoted to the development of innovation, Polish government is implementing a kind of innovative policy, but it is much too early to call it a system. Second, it may happen that the category of innovation system will never be relevant in Polish reality. As a result of investing huge financial resources from the EU, the innovation system – designed as a remedy for the decline in production capacity of economies of developed Western European countries – has been copied in a country with completely different history and social structure. In other words, Polish national system of innovation is not compatible with the norms of the existing social systems: economic system and cultural (both education and political) system.

Therefore, data concerning Polish innovation potential, showing that in various classifications it is always among the lowest, is not very surprising. In 2015, Poland ranked 24 on the list of 28 countries classified in *the European Union Innovation Scoreboard* (EUROPEAN COMMISSION, 2015). In *the Global Innovation Index 2015* statistics, Poland was number 46 (out of 141), after the Baltic states, the Czech Republic, Bulgaria and Moldova (Dutta, Lanvin, Wunsch-Vincent, 2015). What is more, despite constant increase of financial resources devoted to stimulate the innovative activity of companies and universities, no return of the expenditure is observed. Suffice it to say that in terms of this factor, Poland ranks 93 in *the Global Innovation Index 2015*. True, in the above-mentioned rankings Polish system of innovation ranks quite high in terms the quality of human capital. The fair proportion of people with higher education is above the EU mean (Waresa, 2015). The high enrolment ratio does not correlate with the other indicators of innovativeness. In 2013, only 3 out of 22 ratios of innovation system analysed for Poland exceeded the OECD median. These were: the number of mobile broadband connection users, the density of Internet network per resident, and patent collaboration: patents shared with inventors from abroad as part of international procedure – the proportion of all applications (OECD, 2013). What is important, in the 2007–2012 period, the number of patents for Polish inventions in *the European Patent Office* per 1 million of workers grew threefold. But it is still ten times fewer than the EU mean, and much fewer than the mean for Hungary or the Czech Republic (Waresa, 2015). We can also see a decrease of collaboration between developing entities and those that implement innovations, and between the public and private sectors. The R&D expenditure of the private sector with relation to gross domestic product (hereinafter GDP) is more than 20 times lower than the OECD median (OECD, 2014). So in Poland is observed the phenomenon of unequal innovation potential: disproportions between the enrolment ratio and the other indicators. In countries with higher ranking, this inequality does not occur. Countries with enrolment ratio lower than in Poland, e.g., Slovakia and the Czech Republic, are improving other categories of innovation much more quickly (EUROPEAN COMMISSION, 2012). In this context, the crucial issue is the level of subsidy for R&D. Although the government aims to increase that expenditure up to 1.45–1.9% in 2020, the

speed is not satisfactory. Notably, even now R&D expenditure in the Czech Republic and Slovakia is approx. 1.5%. Another disturbing fact is that the source of all previous increase of GDP resources allocated for this purpose has been European funds (Bukowski, Szpor, Śniegocki, 2012).

At the beginning of the 21<sup>st</sup> century, Poland, which was then facing the problem of high unemployment (about 20%) and an acute economic crisis, joined the group of countries that participated in the race for building an internationally competitive innovative economy – using the European Union jargon. Definitely, it was the funds coming from EU membership that drove Polish decision-makers to engage in the process. But for the need to distribute EU resources, the issue of innovation would probably not be so common now in Polish public domain. As a community that is still making up for civilization backwardness in many areas resulting from system transformation, we have not worked out the conditions favourable for innovation. But the cohesion policy supporting Poland for many years is now ending, and after 2020 the amount of resources devoted to supporting Polish innovation is likely to be greatly reduced. Nowadays, the stress in EU policy is being shifted towards the building of competitiveness instead of cohesion. The view that the community approach to the development of innovations in the EU is only justified if it involves focusing on and supporting the strongest countries, which are likely to win the competition with less innovative countries where resources are cheaper, so far rather unpopular, is currently growing in popularity (PARP, 2013). Hence, the future financial perspectives will probably mean more and more support for the leading European centres instead of assisting other parts of the Union make up for the developmental gap.

#### 4. REGIONAL SYSTEMS OF INNOVATION IN POLAND

RISs will mostly be assessed on the basis of the outcome of a nationwide study carried out by Polish Agency for Enterprise Development as part of the programme *Review and analysis of regional systems of innovation in provinces of Poland in the context of preparation to implementing the European cohesion policy after 2013* (PARP, 2013). The goal of the project was to find out whether and how much the previous public programmes have promoted the formation and strengthening of RISs. Three methodological approaches were applied in the study: the analysis of available statistical data, interviews with local decision-makers and representatives of key institutions, and the Delphi method involving a group of experts from each province.

The basic conclusion from the analysis is strong diversification of innovation potential resulting from the fact that innovation indicators are related to the level of economic development expressed as GDP (PARP, 2013). The authors of the report claim that “we cannot find clear relationships between the types of implemented support programmes or activities connected with the formation and development of RIS implementation structures and innovation indicators of the regions” (PARP, 2013). It is not the formation of institutional infrastructure of innovation systems that generates innovation; innovation primarily depends on the level of economic development of the province (Solow, 1957). This conclusion seems very obvious. Still, it does not refer to the regulatory model of implementing innovations in EU countries following a single procedural pattern. That is why, since 2005, all provinces (except the Mazowieckie one) have had detailed regional strategies of innovation development based on bureaucracy included in particular framework programmes and the strategy following *the Lisbon one, Europe 2020* (European Commission, 2010). One

exception is the degree of regional strategies' compliance with *the Innovation Union* initiative, which the respondents perceive to be very low, especially in terms of access to financing for innovative small and medium-sized enterprises, support for social innovations, and collaboration between the worlds of science and business. Although formally local authorities view regional innovation strategies positively, the vast majority of them know nothing about the degree of accomplishment of the goals of the strategies (PARP, 2013). Unlike local authorities, the authors of the report notice some faults in regional strategies of innovation, very common and yet trivialized by the respondents. These are, first of all, too general goals, e.g. to build knowledge-based economy. A task expressed this way is not quantifiable. In many cases, no deadlines for the completion of activities, no executors or no sources of financing were specified. A number of strategies do not include a system of monitoring or even an indicator of goal achievement. Interestingly, it must be pointed out that the most innovative Mazowieckie Province adopted its regional strategy as the last province in Poland, in 2008 (PARP, 2013).

Despite bureaucratic EU machine connected with producing tons of documents, which E. Okoń-Horodyńska calls *the triumph of form over content*, talking about innovations may never replace implementing them (Okoń-Horodyńska, 2014). According to the authors of the report, there is no reason to seek any connections between regions' levels of innovation and the quality of strategic documents they apply. Surely, if it was not for framework programmes, there would not be any national – not to mention regional – strategy of innovation. Real pro-innovation activities were largely or even exclusively determined by the process of centralized programming of European funds in Poland. The authors of the report make a conservative observation that this hypothesis would partially explain the above-mentioned lack of relations between the convergence of goals of regional strategies of innovation and the level or dynamics of regions' innovation (PARP, 2013). Dynamic analysis of innovation potential proved that in the 2003–2009 period, when European programmes of innovation system development were implemented, there were little or no changes in regions' ranking positions. A small group of leaders strengthened their dominant position, and provinces with low innovation potential did not change their ranks despite the use of European funds. The authors of the report argue that so far local authorities have not managed to build cohesive systems of innovation. “We can only identify individual institutions, documents and activities – expressions of the system functioning – but we should be aware that they do not make a comprehensive system of innovation” (PARP, 2013). The environment of innovative business, i.e. entities such as clusters, science and technology parks and consortiums, is considered to be the weakest link of RISs. Actually, decision-makers find it difficult to evaluate the role of these institutions. They appreciate the very fact that the institutions exist, but they question the effect of their activities. No relationship is observed between provinces' levels of innovation and positive assessment of the role of those institutions. What is important and interesting, decision-makers from Mazowieckie Province – the region with the highest innovation potential – express the most negative opinions on the role of innovative business environment. The vast majority of the respondents perceive the level of transfer of knowledge from science to industry to be very low. Only few respondents were able to provide isolated examples of such collaboration. They do not have any ideas about what local governments could do to activate the potential of the science sector (PARP, 2013). According to experts, “they lack experience, knowledge, and greater reflection on the very phenomenon of innovation, not to mention strategies of action” (PARP, 2013). So decision-makers appreciate the existence of the science sector, but they can see

that it plays a negligible or even no role in supporting the innovation of companies. In most cases, enterprises themselves do not manifest the wish to collaborate. In a study involving a representative sample of small and medium-sized enterprises carried out in 2010, 76% of the respondents replied to the question of why innovations were not introduced in their company that there was no need to do so (PARP, 2010). According to local authorities, if entrepreneurs did adopt the concept of innovation, they only did so because of applying for EU funds. What is important, the companies usually spend the subsidies on the purchase of machinery and equipment, thus consolidating the imitation model of innovation, so typical of Poland. Therefore, in all the provinces, most projects are not carried out in partnerships (as expected), but individually. The dominant attitude of the system stakeholders is that if a task can be done individually, no collaboration is pursued.

Thus, I have the impression that local authorities, just like entrepreneurs, only participate in the process of building the innovation system as actors using some tools for an obscure purpose connected with an enigmatic idea of innovation. Both groups display an unjustified belief in universal effects of investing in laboratories and equipment. Representatives of public administration and the private sector alike repeatedly spend EU funds allotted for stimulating innovation on investing in institutions (in the case of local authorities) or machinery and equipment (entrepreneurs). Still, the respondents are grossly surprised and disappointed as they see that investment in research infrastructure does not generate collaboration between the worlds of science and business. Entrepreneurs claim that European regulations have an anti-innovation effect, and representatives of universities admit that although EU financial support has allowed great improvement in the quality of infrastructure, in the long run it will cause financial crises of universities, since they have to contract high loans for their contribution to the projects and for the maintenance of infrastructure (Conference of Rectors of Polish Universities, 2013). As a result, universities have no money for research, but the problem is concealed by the specificity of RIS methodology. In many rankings, innovation success is measured with the scale of obtained and spent EU funds, and those rates are obviously good (Okoń-Horodyńska, 2012). Surely, the most desirable model involves the research institution selling a solution that will be implemented by an enterprise that has the necessary production facilities, unavailable for research laboratories. However, in practice the implementation of this process proves to be more complicated than it seems. Entrepreneurs seek quick and profitable commercial solutions, and universities function in a totally different reality and often find it difficult even to estimate the costs of production of the solution they develop. As for companies, they first of all pursue profit, and they are bound to choose the university that offers goods or services that are not only better but also cheaper. Thus, it is hard to build lasting relationships between the private and public sectors, because the former is simply very “moody”.

It seems, however, that the core of the matter is another issue, namely, where (and whether) innovation-stimulating research potential can be found in Poland. So far, innovative activity in Poland has mostly taken place out of the academic circle, in branches of international concerns. That is why the internationalization of invention activity – the indicator referring to patents shared with inventors from abroad – is much higher than the OECD median (OECD, 2014). Some studies show that corporations which move part of their R&D activity abroad are motivated by supply factors (e.g., the quality of research networks) only in the case of highly developed countries, and by demand factors (e.g., the need to adapt products to local markets) in less developed countries that do not have any advantage in the area of innovation (Narula, Guimon, 2010). Thus, companies' innovation investments in

Poland do not involve R&D but rather reproduction, adopting already existing solutions. The ratio of export of innovative goods is quite high, yet, although the goods are manufactured in Poland, the technology and know-how for their manufacture come from abroad. R&D activity of international corporations involves relatively simple solutions or is based on research centres that use local human resources but are poorly connected with the environment. Concerns do not invest in research and implementation centres that could create innovations for global use. Low revenues from the export of national know-how show that Poland is only a producer of technologically advanced goods that are designed elsewhere. Hence, profits from the production of those goods probably go abroad as well (Bukowski *in.*, 2012).

The dysfunctional mechanism of management of European funds is strengthened by the conservative attitude of public administration, which, when assessing projects for subsidizing, mostly chooses ones that are not very ambitious and not very risky. Breakthrough innovative ideas do not fit this category. The analysis of the structure of resources allocated as part of the Innovative Economy operational programme shows that large enterprises receive the larger part of the resources. The smaller the company, the harder it is to obtain financing, because in the application assessment procedure, the highest weight is attributed to criteria that are not connected with the projects' quality or innovativeness but ones that minimize the risk of failure. In effect, the majority of resources is spent as non-refundable aid for not very innovative capital investments of large enterprises, e.g., the modernization of production lines. Thus, public aid goes to safe investment projects of large enterprises, generating considerable effects of idle loss, i.e. subsidizing projects that would be executed even without the aid. The lack of innovation generation potential causes a phenomenon of investing bubble, i.e. the mechanism of too quick increase of innovation expenditure (Freeman, Reenen, 2009). Suddenly received financial resources cannot be effectively used by officials and entrepreneurs who do not have relevant experience or skills. Creating science and technology parks in Podlasie Province is an example of the "investing bubble" phenomenon. Over less than twenty years, 3 such institutions have been established within an approx. 100 km area: in Białystok, Łomża, and Suwałki. Yet, activity connected with generating innovations is only carried out in the Białystok Park. In Suwałki, such activity is negligible; in Łomża, it does not exist at all.

So in more than ten years, the authorities of many provinces have seen that the construction of a science and technology park and equipping it with cutting edge laboratories is no guarantee of generating innovation. Often, instead of the expected economic acceleration, RSI institutions become a generator of costs for local authorities. True, over the latest few months, some changes to Polish innovation policy have emerged, made in the spirit of assumptions of *the Innovation Union* project. In new contests organized by the Ministry of Science and Higher Education, EU resources are directly assigned to private enterprises. Local governmental bureaucracy is skipped, but on the other hand, the science sector is marginalized. Contest beneficiaries are motivated to carry out their own R&D activity. Taking into account the fact that in Poland these are mainly branches of international concerns, I have serious doubts about the reasonableness of this change. It is going to consolidate the imitation character of Polish innovation, manifested in the economic capital goes to economic capital mechanism.

## 5. CONCLUSIONS

Since in Polish politics innovation is a category borrowed from a European strategy, it includes the same defects and obvious faults rooted in the discourse of international organizations. The model of innovative economy was developed as a remedy for the declining type of economy based on the production formula. Innovativeness was to be a way to retain industry in Europe, and innovations were to counterbalance the trap of medium income, characteristic of medium-developed countries. Still, it needs to be stressed that Poland has not yet reached the level when the risk of getting stuck in the trap of medium income may be real (Bukowski i in., 2012). An attempt to build an innovation system in an economy that has just begun to improve its production capacity and is at the stage of transformation from under- to medium-developed is an extremely difficult task, if not doomed to failure. Even nowadays, when the first decade of implementation of innovative policy is coming to its end, Polish economy has low production potential, and economic development is actuated by small and medium-sized enterprises, mostly from the sector of services. However, innovative activity of those companies is one of the poorest elements of Polish system of innovation. The reason for this is the assumptions of EU policy, in which it was too optimistically assumed in advance that actors equipped with certain instruments would use them according to the plan prepared top-down and realized in the form of regional strategies of innovation.

In accordance with the neo-liberal concept of New Public Management, standards and recommendations drawn up by the EU and the OECD are part of the global network of governance and more and more determine the functioning of national institutions. This process follows the mechanism of imitative modernization strategy, i.e., borrowing foreign solutions and transferring them e.g. to Polish public sector organizations. Yet, P. Hensel questions the rationality of the imitative strategy: "The effects of organizational innovations in the public sector are usually hard to measure, so the popularity of a certain management technique or reform school results from ideological reasons and non-empirical belief that the plans are rational rather than from evidence of actual effectiveness of the solution. The problem goes unnoticed thanks to the process of generalization: the more often we use categories and labels connected with specific reforms (e.g., New Public Management, public-private partnership), the less we can perceive the specificity and local determinants of those reforms" (Hensel, 2015). Thus, we should concentrate on imitating objectives and values, not the methods of achieving them.

I have the impression that in Poland the creation of innovative economy is extremely risky. If the innovativeness of a country depends on economic factors, its potential will not change through the application of science-oriented policy. The idea of establishing collaboration between economic and scientific entities concentrated on an area cannot exist in poorly industrialized regions, where companies are significantly dispersed not only in terms of geographic location but also the direction of activity. To conclude, in Poland economic determinants are a brake for the speeding bureaucratic machinery of European innovation systems. Cultural factors, connected among others with the conservative attitude of public administration or entrepreneurs, as well as barely developing scientific potential, are elements of secondary importance, unnecessarily subject to excessive EU regulations. I can see no justification for the process of transformation of the system of science in Poland to comply with the rigor of innovation system, which in our country is still a matter of future. We still do not know how much the commercialization of knowledge and universities really

stimulates the country's economic growth. The experience of developed EU countries shows, however, that this effect is much lower than expected (Nelson, Rosenberg, 2001).

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## **AN ANALYSIS OF THE CHARACTER OF MANAGEMENT OF CONTROL AND MEASURING EQUIPMENT IN SMALL AND MEDIUM ENTERPRISES**

The paper describes selected problems concerning the character of management of control and measuring equipment in small and medium enterprises. There are discussed the oversight process over control and measuring equipment as well as there are itemized duties of people managing manufacturing process and worker who controls measuring equipment. There are briefly discussed selected problems concerning the calibration of control and measuring equipment as well as preparing of a workplace for its control. Conclusions are drawn concerning particular activities significantly influencing the management of control and measuring equipment.

**Keywords:** measuring equipment, MSA, management, small and medium enterprises.

### **1. INTRODUCTION**

Polish sector of enterprises is dominated by small and medium enterprises (SME), which constitute approximately 99,8% of all enterprises playing active role in economy. According to the PART report of 2017, made on the grounds of data collected by Statistics Poland (SP), 96% of the whole sector constituted by microenterprises and 3% small enterprises. Medium enterprises form only 0,8% (Nieć, Łapiński, Orłowska, Zakrzewski, Chaber, Wiśła-Domaradzki, Domaradzka, 2017). About 92,8% of SME are private ones (Czerniak, Stefański, b.d.). They manufacture a constantly growing part of Polish Gross Domestic Product (GDP). They have to face strong competition, acting simultaneously with other companies from the sector, selling or manufacturing products applied for the same or similar purposes.

One of the important factors influencing competitiveness and the ability to maintain clients is the quality of products. Therefore, a management system based on the grounds of the ISO 9001 standard is used. It determines typical actions in all areas of activities in an enterprise, including maintaining product quality. The ISO 9001:2015 standard, known in Poland as a PN-EN ISO 9001:2015-10 ("PCBiC", b.d.), is strongly linked with complementary standards such as IATF 16949 (IATF 16949:2016, 2016) which concern systems for the management of measurements and requirements related to measuring processes and measuring equipment. They are addressed in section 7.1.5 of the standard with the name "Principles of monitoring and measuring". That section is a part of chapter 7 entitled "Support". Even though the implementation of the ISO 9001 system brings benefits for enterprises in the form of growing number of clients and improvement of the organization of work, some

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of them decide not to carry on costs of implementation and move through long lasting process of certification of the quality management system (QMS). It usually takes place in case of small companies with small material and financial resources. In such companies production lines should be controlled, in order to maintain the quality of products, by using various control and measuring tools applied to monitoring of manufactured products' parameters. Systematic oversight of the manufacturing process enables reacting to abnormalities and preventing from their occurrence in the future. It limits customers' complaints, company's losses and losing customers. The selection of applied measuring equipment should follow manufacturing processes and tasks as well as standards the products must fulfill. The properties of measuring equipment, such as accuracy class, sensitivity, factors influencing the uncertainty of measuring and other must be compatible with the products' demands.

The oversight of the proper work of measuring equipment, considering its wear and dysregulation, becomes a very important building block of a capable system for maintaining quality of manufacturing. It influences the results of measuring and selecting defective products. Therefore, it is important to early detect and diagnose diminishing measuring equipment capability by regular analyses of its stability of work. The requirement of preserving suitable quality of measuring equipment become the main reason for developing of systems focused on monitoring the state of measuring equipment named Measurement System Analysis (MSA) (Sałaciński, 2009). Those systems assert that the measuring equipment and processes are adjusted to their areas of application which influences the management of risk associated with improper measuring results (Sałaciński, 2015). Full scale MSA can be applied by enterprises which have suitable isolated branches with qualified staff operating even complex measuring systems (Król, Ludwiczynski, 2006). Smaller manufacturers not always have, however, enough financial resources to operate extended systems. On the other hand, they must properly control manufacturing process and check the way of using their measuring equipment. The solution may be the implementation of simplified MSA and executing it by some member of staff designated to those tasks within a part of his or her working time.

## **2. THE MANAGEMENT OF CONTROL AND MEASURING EQUIPMENT**

Decision concerning the implementation of control and measuring equipment management usually belongs to the company's owner. Small and medium enterprises being primarily private ones are managed by a single manager who decides about strategic and current operational processes (Tomasik [red.], Arendarski, Gliwa-Gliwiński, Jabłoński, Ratajczyk, Żebrowska-Łucyk, 2009). In the case of big enterprises the system for supervising of measuring equipment can run separately for each production division and be supervised by several members of staff. In small companies, however, such task may be usually maintained by a single person within a part of his/her working time. The rule is – smaller the number of measuring instruments of one type, more cost effective becomes outsourcing the task to external laboratories (Tomasik [red.] i in., 2009). Companies having enough financial resources frequently apply various ready to use systems for supervising measuring equipment. Some of the systems enable customization to individual needs of particular company and some not. Enterprises selecting suitable system take into consideration its compliance with current standards, flexibility of software, compatibility with possessed equipment, range of capabilities and universality. In small enterprises which are unable to implement extended control systems but plan to carry out the control of possessed mea-

asuring equipment by implementing even simplified MSA the solution lies in preparing a control workstation and training a member of staff designated to supervise control and measuring equipment.

### **2.1. Supervision process over the control and measuring equipment**

Properly realized supervision process begins with acquisition of control and measuring equipment and ends with withdrawing it from operation. Regular supervision over the state of measuring instruments increases the probability of their proper work. It also gives better assurance for the compliance of products with requirements and decreases potential losses following bad quality of products. Duties associated with supervising of control and measuring equipment depends on the size of company, the amount and type of measuring equipment, assortment of products, type of manufacturing (small, medium or large size production), organization and type of control (incidental or full and systematic control).

Developing of an efficient management system for control and measuring equipment requires determining of tasks realized at workplaces designated for supervising control and measuring system. For that purpose there are required the following:

- specification of all measurements made and applied instruments used in a company;
- identification and making an detailed inventory of the whole measuring equipment;
- developing procedures for labeling of applied equipment;
- determining calibration periods;
- preparing management system documentation – procedures, instructions, forms, model documents suitable for all applied tools
- determining periodical checks of applied measuring equipment;
- estimating the time necessary for worker to control the equipment (Baderska, Zakrzewska-Bielawska, 2007).

Company's success depends on people, their knowledge, skills, experience and involvement into work. It is especially important in small enterprises where new workers are employed with special attention paid to recommendation and familial connections (Król, Ludwiczynski, 2007). Poor workforce with low level of professional competencies makes impossible for any company to stay competitive in only short period of time (Tomasik [red.] i in., 2009). In long term it may lead to company's fall. If company's owner thinks about the strategy of development and plans to implement in the company the process of checking measuring instruments, he/she should reasonably choose a worker for that task, because the staff plays the key role in the QMS. It is important that the person designated to checking measuring instruments:

- has suitable professional experience,
- has at least basic knowledge in metrology,
- can properly apply measuring instruments,
- is willing to upgrade professional qualifications e.g., through technical trainings.

The following psychophysical features are also important: accuracy, perceptivity, systematicity, scrupulousness, patience, discipline, good contact with people and good eyesight necessary for initial check of the state of investigated tools.

The organization of measuring equipment management requires:

- determining of worker's hours, within work time, devoted to tasks associated with checking of measuring instruments;

- designation of duties to particular worker;
- determining the method of gratification for making additional work;
- preparing a workplace checking measuring instruments.

Initially prepared range of process of control and measuring equipment management in considered company may change and evolve in result of the company's development and improvement of workers' professional qualifications.

## **2.2. Duties of worker supervising of control and measuring equipment**

Determining of duties for the worker who ought to supervise control and measuring equipment should be done in result of common arrangements between the employer and that worker. The worker who gained eg., through trainings, technical knowledge and raised qualifications can be very helpful source of knowledge for the employer in the process of building of an efficient system of supervising. Among tasks associated with supervising control and measuring equipment should be:

- Making the inventory of measuring equipment by suitable taking new measuring instruments into its warehouse: setting of a record card with its identification number (it should be glued to considered measuring instrument), product number, the name of a person responsible for particular tool. That record card should be made in an electronic form within a database software e.g., a spreadsheet. It should be also printed on paper and put into a binder with other documents linked with measuring instrument, such as operation manual, certificate of calibration, warranty card, etc.
- Withdrawal of worn tools from company's warehouse.
- Developing of a book with information about the quality of all tools and time-schedule of their use.
- Cooperating with accredited measurement laboratories.
- Creating of reports and measurement protocols.
- Creating of time-schedule of calibration and supervising calibration processes.
- Creating of circulation cards for all considered equipment.
- Watching and checking whether the person responsible for particular equipment or instrument – usually master or foreman – fulfills the requirement concerning submitting the instrument to control branch before instrument's validity date.
- In the case of simple measuring tools, like calipers, micrometer, depth gauges, etc., checking their capability by conducting at least simplified MSA allowing to approximately estimate the necessity of soon calibration of the measuring instruments.
- Conducting of the registry of calibration and controlling the evidence of measuring instruments calibrations.

The above named tasks should be done in a systematic way and according to some pre-defined time-schedule. Only regular procedure of collecting and analyzing of measurements enables to estimate and establish allowable levels of important control parameters concerning control and measuring equipment. It also enables determining the successive periods of calibration of used instruments or withdrawal of worn ones.

## **2.3. Calibration of control and measuring instruments**

One of the most important tasks in the field of monitoring of control and measuring equipment is watching over its systematic calibration, i.e. establishing relation between

metrological values of measured feature shown by each considered measuring instrument and metrological values determined with the use of measurement unit patterns (Lewicka, 2017). Some enterprises try to make calibration themselves, especially when it concerns simple measuring instruments. Other enterprises outsource calibration to accredited companies to omit checking failures and to obtain calibration certificate. Such certificate is a document issued e.g., by Central Office of Measures (COM), district offices of measures, measurement laboratories. Those organizations and companies state in such certificate that the calibrated measuring instrument fulfills certain metrological requirements.

Freestanding calibrations can be done by organizations having qualified staff, suitable conditions for making such measurements and necessary reference patterns. Calibrating of measuring instruments should be repeated for each instrument in certain periods of time as long as that instrument is applied for metrological purposes. Currently there are no mandatory rules of law determining calibration periods. Neither expiry dates are indicated on calibration certificates. The exception are measuring instruments under mandatory legal metrological control i.e., instruments applied in the areas such as: health care, protecting live and environment, security and public order, consumer rights, collection of fees and taxes as well as other budgetary bills, determining discounts, etc.

In the case of other areas of using measuring instruments dates of calibration are established by their owner. In the case of small and medium enterprises it can be done by a trained member of staff designated for such tasks. The frequency of calibration varies for different measuring instruments and for each calibrated instrument depends on:

- the type of its design;
- conditions concerning the environment if its operation (temperature, humidity, pollutants, vibrations, presence of caustic materials etc.);
- competences and experience of staff operating considered instrument;
- frequency of its operation;
- diligence associated with its maintenance and storage, etc.

Calibrations should be done in such periods that successive checking and calibration is performed before probable change of accuracy of measuring instrument. There should be kept some balance concerning the frequency of calibration, because too often calibrations are also too expensive as they require removing of a measuring instrument to be calibrated from the process of regular measurements of products and replacing it with other valid measuring instrument. Therefore, it becomes very important to determine the terms of calibration on the grounds of proper estimation of instrument's wear or its dysregulation. It influences economic benefits, because the continuous assertion of required accuracy of measuring instruments diminishes the number of defective products and limits the number of complaints. Those actions are crucial for the effective work of a quality control system.

#### **2.4. Preparing of a workplace for supervising of control and measuring equipment – metrological chamber**

Permanent performance of duties associated with supervising of control and measuring equipment requires taking care of infrastructure and environment for supervising. It connects with selecting of a separate room which should be an independent workplace for the inspection of measuring instruments – metrological chamber. That room is not required to fulfill requirements associated with measurement laboratories. However, it is desirable that the metrological chamber is well separated from the rest of a production hall and meets

several conditions. One of them is limited access of a daylight which should not fall on measurement patterns, measuring instruments and parts prepared for measuring. Inside that chamber there should be a couple of sources of artificial light, not too much intensive, preferably incandescent light (tungsten) (Tomasik [red.] i in., 2009): a roof lamp, a lamp on a desk near a computer used in the process of measuring and a good lamp on a measuring table. The temperature should be stable and moderate, approximately 20°C. There should be also supplied:

- lockable file cabinets for binders with documentation dedicated to all measuring instruments used in a company, cabinets for storage of calibration patterns and instruments which are assumed to be forwarded for calibration in an external laboratory;
- measuring table on which it is possible to properly put instruments for checking their general state;
- computer with suitable software.

Such workplace, separated from the rest of a production hall, makes possible focusing on tasks requiring precise checking and measurements of measuring instruments and performing their calibration. It can also be used for storage of documents associated with control and measuring equipment owned by the company as well as the place for temporary storage of tools being checked in the context of their dimensional accuracy, crucial geometric parameters and stability of using them in manufacturing process.

### 3. CONCLUSIONS

Performed analysis of the character of control and measuring equipment management in small and medium enterprises leads to the following conclusions:

- 1) The application of quality control in a company significantly influences company's economy. There exist, however, not too much publications showing economic benefits following the application of metrology in manufacturing of various products. Several analyses showed that properly chosen measurement processes performed with capable measuring instruments brings a new added value to each manufactured product. The use of respectively selected and supervised measuring systems allows to eliminate defective products and limit costs of losses (Savio, De Chiffre, Carmignato, Meinertz, 2016).
- 2) High quality of manufactured products is one of the most important factors deciding about the market success and competitive advantage in dynamically changing economy. Capable control and measuring equipment and qualified staff trained to use that equipment are obligatory basis for maintaining quality independently from the size of enterprise. Monitoring of measuring instruments is one of the necessary elements of integrated system for management of quality, environment and energy, according to the ISO 9001, ISO 14001 and ISO 30001 standards.
- 3) Not all enterprises are able to carry costs of expensive systems. However for each of them the quality of manufactured products is a priority. Therefore, it is very worth to establish and make well working at least a simplified system for control of measuring equipment quality. If a company is not able to employ a new worker with suitable knowledge and skills in metrology, it should take care of improving metrological qualifications of some member of staff designated for that purposes.
- 4) The staff supervising control and measuring equipment plays a key role in quality management of the equipment. Managing staff should take care of thorough training

of staff, taking the opportunity of wide offer of technical trainings devoted to both metrological problems and the methodology of supervising various processes.

- 5) It is also important that the tasks associated with supervising of measuring equipment and realized in only some part of working time of designated worker are not at the bottom of the list of his/her activities. The worker must be conscious of the importance concerning quality control of both products and measuring equipment. Suitable material and nonmaterial motivating as well as proper rewarding of that worker are also central factors influencing the effectiveness of the quality control system and bring benefits for the company. The managing staff should take care on preparing suitable infrastructure and environment for such worker.
- 6) The effectiveness of quality control of both products and measuring equipment can be significantly improved by using proper mathematical methods of analysis and their practical application in the form of suitable software dedicated for that purpose. Such software facilitates the execution of work associated with collecting and processing data obtained in the process of quality control. It also accelerates access to information concerning used measuring instruments, the evidence of control and supervising processes, calibrating of measuring instruments and their attestation. It simplifies determination of instruments' checking periods. Some software packages are small and narrow as far as their application is concerned (Magdziak, 2014). There are also general and relatively expensive software packages enabling to design and run measurements and test stands. Small packages are usually developed by companies manufacturing measuring equipment. However, it can be a difficult task to correctly transfer data from a specialized software focused on particular measuring instrument to main management system e.g., software which may used for the MSA.

Implementation of the above named procedures associates with additional work and costs for the company. However, in the final result it becomes profitable for the company as it both improves the level of control of manufacturing process and strengthens position of the enterprise on highly competitive market.

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## **CROSS-SECTORAL COOPERATION TOWARD A WORK-LIFE BALANCE**

The article focuses on the introduction of two Work-Life Balance (WLB) models developed and implemented in the United States of America (the USA) and in the European Union (the UE). Main characteristics and assumptions connected with both models are presented.

In recent years policies favoring the reconciliation of work and private life have gained great attention of many EU Member States, but still number of obstacles can be identified, including: a lack of knowledge about possible solutions and their results (both employers and employees), a lack of information and advisory support for both groups of stakeholders, or lack of some effective methods of cooperation between the representatives of different sectors for the implementation of WLB practices in general.

Some tools used to overcome the pointed-out limitations for implementing WLB solutions in EU countries are programs co-financed by the budgets of their national governments and the European Social Fund (ESF). An example of such tools used toward supporting WLB practices in Poland is a project co-financed by the EU under the POWER 4.3 ESF campaign called "Cross-sectoral cooperation toward WLB based on cooperation models and tools from Great Britain".

The article presents the project as an example of good practice from Poland and describes innovative products developed in the project, including three models of cross-sectoral cooperation between employment agencies and training institutions, CSOs, and employers toward WLB.

**Keywords:** social innovation, Work-Life Balance, labor market, cross-sectoral cooperation, family.

### **1. INTRODUCTION**

The Work-life balance (WLB) concept was developed in the United States of America (USA) during the 1970's and 1980's in response to an increase in the number of employees who were showing a decrease in commitment, a lack of enthusiasm and a decline in labor productivity. The researchers concluded that these negative behaviors of employees had been the result of an imbalance between their private and professional lives. The extent of the issue was so serious that the problem began to attract the interest of state authorities and transnational institutions, which resulted in the application of specific legal regulations. On

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the other hand, at an organizational level, projects were implemented that were aimed at improving the situation and assisting workers in maintaining the proper harmony (balance) between work and family life. The coexistence of both areas allows for better results rather than limiting one of them. Over time, relaxing professional and private life began to be treated as one aspect of the areas of corporate social responsibility (CSR).

Apart from the state and businesses – local governments, employer associations, unions, civil society organizations (CSOs), churches, training and employment agencies, or media also have an impact on the balance between work and private life (Borkowska [red.] 2004). Due to the multiplicity of actors involved in the creation of favorable conditions for the implementation of the ideas of WLB, it becomes crucial to develop some solutions and instruments that enable different actors to cooperate effectively toward a common goal. The answer to this need is a project carried out by BD Center Ltd. and called "Cross-sectoral cooperation for work-life balance based on cooperation models and tools from Great Britain". The purpose of this article is to outline the WLB ideas and tools developed within the framework of the aforementioned project.

## 2. WORK AND FAMILY LIFE IN THE POST-INDUSTRIAL ERA

We live in an era in which the so-called practical use of knowledge rearranges social order; at least to the extent in which the steam engine in did for eighteenth-century English society. Productivity and economic competitiveness are less and less dependent on material factors of production, *i.e.*, on resources of capital and labor; and more and more on the state of technical, economic and organizational knowledge (Kabaj, 1998). The source of economic wealth is focused intelligence and the ability to acquire and practically apply knowledge (Handy, 1996). The so-called *knowledge based economy* has emerged from the era of the new economy. Behind the transformations in the economy follows an evolution of society, that in the wealthiest countries deserves to be called post-industrial, that is, in which the main source of livelihood for most people is more the production of information and services than material goods. In this new, reorganized world, both spheres of life – family and work – are changing.

In the sphere of work, these changes include both the area of work content, organization and working conditions, as well as changes in the working staff themselves (including changes in the structure of education, qualifications and competence traits, adaptation to work requirements, and an increase in expectations as regards working conditions) as well as changes in business organizations (Borkowska [red.] 2004). Looking through the prism of WLB, two issues are emphasized: the process of moving away from the classical pattern of employment for employees (the evolution of the legal employment relationship) and the intensive development of non-employment forms of work (flexible, atypical forms of employment, teleworking, *et cetera*) (Szytko-Skoczny, 2004).

Enterprises of the globalization era are primarily enormous corporations, functioning in accordance with the strategy – *from high volume to high value* and which have a relatively low demand for permanent employment. On the peripherals of these enterprises, or rather *global networks* there are employees and workers engaged in performing specific activities, providing specific services or even some elements of fixed assets (offices buildings, factory halls and others) (Reich, 1996). The time of engagement for the employee or worker is strictly defined and adapted to the strategic concepts of the creative team. Since the workforce is seen through the prism of costs in the world of global competition, limiting

permanent or stationary work appears to be the one and only way to achieve and maintain competitiveness in the conditions of market fluctuations (Kryńska, Czerniewska [red.] 1998). Back in the 1990's, Charles Handy correctly predicted that this way of organizing the work of corporations and the dissemination of the organization model, coined by him as "[...]clover-shaped work organization" (Handy, 1998) would result in less than half of the active people finding "proper" full-time jobs in organizations operating in modern economies (Handy, 1998). Permanent and full-time (and those which do not specify end time for the contract) employment is seen as a kind of privilege in these conditions. It should be added that the increasingly common phenomenon of part-time jobs results not only from the varied needs of working staff, but also from the diversified needs of the employees themselves, who sometimes seek work for a few hours a day or attend non-employee training in order to maintain a household. Limiting the scale of full-time employment is just one of the aspects related to the globalization of *the process of making the labor market more flexible*. This term is usually understood as a more and more frequent application of non-standard forms of working – it is work in a form other than traditional (Kryńska, 2001). By their nature, these new forms can be called more liberal than the thus far commonly used "social" employment rules (Drozdowski, 2002).

Such "flexible" forms of employment include: part-time work based on a permanent employment contract (indefinite or definite duration); occasional work, based on the employer's needs; shared work, when the duties of one job are undertaken by two or more people; homeworking – a job performed at home (also called teleworking); sub-contracting – when a company signs a contract with a self-employed worker; working on the basis of a mandate contract. The term "on-call work" or "commissioned work" is often used (Kozek, 2013).

The emergence of these new forms of employment and the new patterns of work organization was possible *inter alia* due to the development of information and communication technologies (ICT). These new technologies contribute to a faster flow of information, facilitate the processing of data and, above all, enable working remotely from a traditionally understood workplace (Skórska, 2016).

The consequence of further technological progress, especially in the IT field will be the virtualization of work (and the work environment), which in turn will result in an even higher increase of productivity outside the work office. Virtualization is considered to be a step forward in relation to teleworking (Prokurat, 2016). It is also worth mentioning that in organizations that have not yet used teleworking, a shift from traditional forms of employment in favor of some "flexible" ones has been noted. According to the "US Compensation Policies and Practices Survey" released by Mercer in 2012, it was found that 65% of US companies offer flexible start and finish times for work and allow shorter working days for increased productivity (Prokurat, 2016).

The changes taking place in the labor market have a strong relationship with demographic processes, especially those strongly connected with the development of matrimonial and procreational attitudes<sup>3</sup>. In the era of economy, which rewards working staff for their knowledge, the effort to attain the highest possible level by them lengthens the duration of their studies or training. After obtaining a satisfactory level of education, there is the so-called *education-to work transition* stage that in the case of young people who have no or little work experience, is sometimes prolonged due to the lack of their obtaining a desired

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<sup>3</sup> The phenomena are referred to in the so called the second demographic passage theory.

job or their finding employment that corresponds to the specific expectations of youth. From the moment a young person begins working, the period in which the employee strives to strengthen their professional position due to, for example, the relatively frequently occurring worry about losing one's job on the one hand, and the prospect of higher earnings on the other hand. This period is sometimes called the *postponement syndrome* of the decision to start a family. In turn, starting a family later usually results in a small family. It often happens that this postponement may lead to the complete abandonment of family life by choice or through necessity (Balcerzak-Paradowska, Sadowska [red.] 2008).

### 3. MODELS AND WLB TOOLS

In the article there is reference to two major WLB models: American (referring to the USA) and European (referring to the EU in general). The former is characterized by the dominance of voluntary activities of the employers themselves toward the shaping of the WLB model, known as “work-life programs” (Borkowska, 2010). The model is characterized by a motivational approach, which means that the selection of WLB tools is varied in different sectional groups of employees with regard to their type and prosperity. The basis for this differentiation is the type of determinants of the lack of WLB and the assessment of the usefulness of the working staff (a group of them) for the organization. The American WLB model is focused on acquiring valuable working staff for the company, maintaining them in the company, creating conditions for achieving the best work output (releasing a person from everyday worries, stress, *et cetera*) and their personal development. In addition, the model is oriented toward the low taxation of labor costs, which favors the creation of job positions. The American model is less focused on dividing the job positions already existing between a larger number of people (for instance by applying part-time jobs, or through the development of flexible, or atypical forms of working) (Borkowska, 2010).

On the other hand, the EU WLB model, which appeared in Europe after the Second World War, has strongly developed social aspects and is obligatory for employers. Its foundations are legislative framework and social dialogue. The WLB model is focused on pro-family policy and the development of atypical employment and work organization (Borkowska, 2010).

As the already extensive literature on the subject states, efforts to balance work and family in the EU are carried out in four main areas (Głogosz, Sadowska [red.], 2008):

1. Elastic work organization and flexible work.
2. Holidays and employee leave with financial benefits.
3. Caring for dependents.
4. Some additional rights or benefits granted to employees by employers.

Within each of these areas there are various tools and practices applied that vary depending on the specific EU country – its traditions, economic development and labor market legislation. Attention should be paid to the multiplicity of these tools and the differences in their naming. For instance, in Poland, up to fifty-nine of these WLB tools have been listed and described on the national portal of the Ministry of Family and Labor<sup>4</sup>. Making certain generalizations, it seems that WLB tools can be assigned to the above-noted areas in the following way (European Commission. 2005):

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<sup>4</sup> Available at: <https://rodzinaipraca.gov.pl/narzedzia-godzenia-rol/> (Access: 18.07.2018).

1. Elastic work organization and flexible work:
  - a) Shortening of work time,
  - b) Limiting of jobs performed at night, on Sundays and holidays, in shifts (especially when they include night shifts),
  - c) Part-time work,
  - d) Telework (working from home),
  - e) Fixed-term work, including replacement work.
2. Holidays and employee leave with financial benefits:
  - a) Maternity leave with benefits,
  - b) Paternity leave with benefits,
  - c) Parental leave,
  - d) Leave and care allowances (for instance in the case of illness of a family member),
  - e) Adoptive leave (in the case of adopting a child),
  - f) Nursing leave (in a situation where it is necessary to provide emergency care to a dependent family member),
  - g) Long-term employee holidays granted for personal reasons (including family ones).
3. Caring for dependents:
  - a) Co-financing nurseries and kindergartens,
  - b) Providing rooms for childcare,
  - c) Providing babysitters,
  - d) Subsidizing or financing childcare outside of the family,
  - e) Emergency financial assistance for childcare,
  - f) Organization of summer recreational activities for children of employees.
4. Some additional rights or benefits granted to employees by their employers in the areas of:
  - a) Holidays and vacation (co-financing employees' holidays),
  - b) Care for children and other family members (co-financing to care for a child or dependent in an emergency),
  - c) Healthcare and insurance (providing group life insurance, employee pension schemes),
  - d) Sport and recreation (providing sports passes, or the organization of sport and recreation activities for working staff),
  - e) Education (school kits for employees' children),
  - f) Integration (organization or financing trips and employee integration meeting(s)).

#### **4. AN EXAMPLE OF GOOD PRACTICE FROM POLAND**

Although in recent years policies favoring the reconciliation of work and private life have gained great attention in many EU Member States, its implementation faces a number of barriers or obstacles. Some of the major ones include (Głogosz, Sadowska-Snarska [red.], 2008):

1. A lack of knowledge about possible solutions and their results (both employers and employees);

2. A lack of information and advisory support for both groups of stakeholders that can allow perceiving the possibilities of profits for each of them (accordingly to the *win-win* strategy);
3. Lapses in work organization; such as expecting working staff to accomplish more tasks than is feasibly possible during the standards of work time;
4. More focus on the feedback from the staff and managers who are not covered by the benefit program than on the positive outputs for the covered stakeholders;
5. Cases of benefit programs with unbalanced benefits or costs (often strongly focused on the economic profit of a company and subordinating the forms of a staff member to achieve the main goal).

Beside the above mentioned obstacles, one more should also be added– the lack of some effective methods of cooperation between the representatives of different sectors for the implementation of WLB practices in general (for example, due to different legal bases or an unwillingness to cooperate with different institutional sectors, or a lack of knowledge about the possibility of such cooperation), which would be included in the framework of procedures or good practices possible for implementation under the current national legislation.

Some tools used to overcome the pointed-out limitations for implementing WLB solutions in EU countries may be programs co-financed by the budgets of their national governments and the European Social Fund (ESF). For instance, in Poland such programs include the so-called “Operational Knowledge, Education, and Development Program” (acronym “POWER” in Polish) and Axis IV programs (“social innovations and transnational cooperation”) managed by public Intermediate Bodies (IBs): The Ministry of Development (POWER 4.1 and POWER 4.2 Intervention campaigns) and the Center for European Projects (POWER 4.3 Intervention campaign).

An example of such tools used toward supporting WLB solutions in Poland is a project co-financed by the ESF under the POWER 4.3 campaign. It has been developed and implemented by BD Center Ltd. and is called “Cross-sectoral cooperation toward WLB based on cooperation models and tools from Great Britain”<sup>5</sup>. The project’s main products and solutions implemented in Poland are based on tools that have been successfully used in the United Kingdom (UK). The target groups of the project are on one hand institutions and their employees, or even volunteers (including labor market institutions, employers, NGOs), and on the other hand inactive or unemployed people who are caring for dependents<sup>6</sup>.

The main product of the project is a web-based platform devoted to the reconciliation of work and private life<sup>7</sup>. Some main elements of the platform include<sup>8</sup>:

<sup>5</sup> ESF Project no POWR.04.03.00-IP.07-00-001/15

<sup>6</sup> The process of project’s products development has been supported by social consultations with the possible products’ users, including three experts meetings with 30 working and 10 not working adults living in Subcarpathian region and by testing of the products by 100 working and 20 not working individuals living in the region.

<sup>7</sup> The platform is available at: <http://wlb.e-wspolpraca.pl/> (Access: 18.07.2018). It was created as a tool with a basic interface and easy-to-use features, so it can be accessed by a wide group of users, including the ones with low computer skills.

<sup>8</sup> All the listed products are free to access and available to use without the need for registration on the platform.

1. A set of fifteen animated training videos for employers that aim to inform them of the benefits of their implementing instruments that help reconcile the private and professional lives of their employees.<sup>9</sup>
2. E-learning, consisting of four interactive course modules (the psychological basis of WLB; the benefits of implementing WLB; WLB tools; and WLB strengthening policies).<sup>10</sup> Each module has assigned a dedicated intro including two short movies of good practices from the UK showing how WLB tools are implemented by the different sectors and in the various professions in the UK.
3. Developed three models of intersectoral cooperation between employment agencies and training institutions, CSOs, and employers.
4. Public and free-to-use database with a list of current activities/initiatives, as well as institutions working to reconcile work and family life
5. A collection of new analytical materials created during the project (research reports, desk research analyses) and existing documents (articles, legal acts, reports, *et cetera*) about WLB.

The project's products include many references to the WLB practices in use in the UK, including intros to e-learning modules and in some training animations for employers. All instructions and other materials presented on the platform were created based on current legal provisions in force in Poland<sup>11</sup>.

In the project, particular attention is paid to the problem of WLB implementation in organizations and to the cooperation between organizations originating from various sectors. The term *cross-sector cooperation* requires some further comment. It can be understood in the project as a cross-sectoral partnership or strategic alliance of organizations representing various sectors of social life, which is concluded for cooperation toward common goals, to which all partners bring their competences and resources, in which they share not only risk and costs, but also share the benefits of achieving the common partnership goals and objectives of the individual organizations in the partnership (Tennyson, 2003; Jamrozik, Zmysłowski, 2010).

The aspects of this cooperation – based on certain rules and procedures - are described in the multi-part document accessible on the platform entitled “Models of cross-sectoral cooperation of the employment agencies and training institutions-CSOs-employers”.

According to the guidelines of the document, the cooperation should start at the micro level (model No. 1): that is between the local enterprise, the employment agency or training institution, and the CSO. A dedicated instrument crucial at this point, before cooperation is initiated, is the usage of a multi-dimensional questionnaire developed in the project called the “WLB Questionnaire” within a single organization (by both the employer and the employees, or volunteers depending on the organization's profile). There is one questionnaire of twenty-four questions targeting working staff and the other twenty-six questions are for the managerial staff of an organization. The tool is aimed at making the staff of the organization aware of the usability of all flexible forms of employment. On the other hand, the questionnaire is to be the impulse that makes the entrepreneurial and managerial level staff aware of the need to introduce changes in the organization. Once the results of the reviews are available, the next step is to correlate the expectations of the working staff with the

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<sup>9</sup> Available at: <http://wlb.e-wspolpraca.pl/bazy/szkolenie-multimedialne> (Access: 18.07.2018).

<sup>10</sup> Available at: <http://wlb.e-wspolpraca.pl/kursy-e-learningowe> (Access: 18.07.2018).

<sup>11</sup> Legal provisions as of 1st Jan. 2017.

“views” of the managerial level of the company and the available economic resources of the organization that can be used to implement some of the WLB solutions. The third step is to propose some WLB solutions and discuss them with working staff during individual meetings with managers/employers in order to fit the needs of an individual worker. The final step within an organization – particular WLB solutions should be implemented. During the implementation of the solution a local partnerships can be started within the company and CSO, or training, or employment agency (depending on the needs and the WLB tools implemented).

The next level of building effective cross-sector cooperation is at a regional level (model No. 2). This model is based on an instrument called "WLB Training". It is addressed at various target groups including, in particular, to university graduates in the so-called *school-to-work transition* because these are the people who will mostly become more active in the labor market in the near future. Therefore, it is very important that these people have knowledge in the field of flexible forms of employment, their work-related rights and the tools that allow a balance of work and private time. The training is also dedicated to people working in medium and large enterprises as well as labor market institutions and CSOs at the regional level. It is advisable to organize the training with participants representing different sectors' regional organizations, so the partnership can be started even during the training. The training, besides introducing the WLB idea and existing tools to the participants, introduces them to some possible form of cooperation and to the realization of common projects<sup>12</sup>.

The third possible cooperation model can be realized at a macro level (model No. 3). The model consists of the implementation of WLB "Good Practices" in Poland in general. They can refer to the practices which are already existing and in use in the other EU countries, including Great Britain. Model No. 3 is an overall idea rather than particular recommendations, since it should take into account the ever-changing legislative statutes targeting the labour market, some overall condition of the Polish economy, demographic challenges, the economic possibilities of Polish companies and the government, and also other influencing factors. Nevertheless, some possible ways of developing WLB practices in Poland can take a turn toward: fixed employment, strengthening the infrastructure and availability of facilities for childcare and the elderly, combatting some parenting stereotypes, or the government rewarding organizations that use some good practices concerning WLB.

These three models of cooperation form one coherent whole that leads to a common goal – the inter-sectoral cooperation between private enterprises, labor market institutions and CSOs at all levels of the socio-economic structure.

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<sup>12</sup> Once the results of the reviews are available, the next step is to correlate the expectations of the working staff with the “views” of the managerial level of the company and available economic resources of the organization that can be used to implement some WLB solutions. Third step is to propose some WLB solutions and talked them over with working staff during individual meetings with managers/employers to fits the needs of an individual worker. The final step within an organization – WLB solutions should be implemented. During the implementation of the solution a local partnership can be started within company and CSO, or training, or employment agency (depending on the needs and WLB tools implemented).



## 5. CONCLUSION

In the face of the growing demographic burden of developing favorable conditions in the professional life of parents, as well as overcoming barriers in the reconciliation of work and family life, it has become an important area for EU, national and regional social policy. Applying solutions that would facilitate the harmonization of activities in these two closely related areas of life – professional work and family duties – may affect, on the one hand, an increase in labor productivity and the competitiveness of enterprises in the labor market; and on the other – an increase in motivation and employees, and their job satisfaction. Unfortunately in Polish companies, in contrast to companies from the so-called *old EU*, despite the existing legal solutions, WLB tools are still seldom used, particularly in atypical forms of employment. The barrier is often ignorance of these solutions or the complexity of their application or accountability (BD Center sp. z o.o., 2016)<sup>13</sup>. Therefore, it is important to properly prepare management staff and raise their level of knowledge concerning WLB. These activities can be effectively carried out within the framework of projects financed from EU funds, an example of which was the implemented project, "Cross-sectoral cooperation for WLB based on cooperation models and tools from Great Britain".

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## **CHARACTERISTICS OF SELECTED APPROACHES OF UNCERTAINTY MODELLING IN THE CONTEXT OF MANAGEMENT SCIENCES**

Information uncertainty in management systems is a subject of research of many scientific disciplines. Research concerning a quantitative modelling of uncertainty verging on mathematics, information technology, and logic is extremely important. The purpose of the article is to present possibilities and limitations of the most popular approaches in uncertainty modelling in social sciences with particular emphasis on management problems. Achieving such a goal always requires accepting certain basic epistemological assumptions. Therefore, an assumption was accepted about a subjective character of information. Information is treated as a feature of a cognition process. It is not an objective element of the reality. Furthermore, there was also assumed that uncertainty is a result of interference in mapping information and processes connected with cognition of the reality by human. Starting from these assumptions, the article demonstrates the way uncertainty is modelled and perceived in terms of probability, in fuzzy logic, in rough set theory, and in grey systems theory, which has been gaining popularity in recent years. In order to compare the mentioned approaches to a maximum extent, an attempt was made to show their essence referring to a classical set theory. To this aim, mathematical formalism was used for a precise description of particular types of uncertainty. It is of great significance as in management sciences and generally in social sciences some terms, for example, fuzziness, probability or greyness are overinterpreted and used in descriptive way to pretend scientific statements.

**Keywords:** uncertainty, fuzzy logic, rough set theory, grey systems theory, probability.

### **1. UNCERTAINTY AND ITS SIGNIFICANCE IN MANAGEMENT PROCESSES**

When analysing uncertainty issues, a starting point should be the focus on the matters of a cognition process of the reality. It happens because uncertainty is caused by incomplete mapping of the reality in the subject's mind. The mapping appears as a result of complicated information processes pursued by the subject. In the first place, the subject recognises objectively existing states of object. These recognised states can be called data. However, the meaning, which is given to data by the subject of cognition, is called information. Considering the following line of thinking, we can say that data are epistemologically objective, whereas information is of subjective character and it is depended on a subject of cognition.

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The concept of information is frequently treated as a synonym of the concept of knowledge. Hence, these two concepts ought to be differentiated as knowledge is a set of subject's statements based on possessed information. This leads to the following statement, namely information is intentional towards data while knowledge is intentional towards information. Such a distinction is very important for uncertainty modelling as an original cause of uncertainty is uncertainty of possessed information. Accepting this assumption, we can state that methods of uncertainty mathematical modelling are focused on the attempt of grasping a cognitive relation between data and a subject of an information process.

Referring to the assumption about an original character of information processes towards processes of creating knowledge and assuming epistemological subjectivism of information and its direct intentionality towards the reality, we can claim that human as a subject of cognition might create the following types of information concerning an object that is analysed by him (Mierzwiak, Xie, Nowak, 2018):

- only a positive existential statement saying that an object exists without any information about its features and characteristics. In such a case, the level of uncertainty about the object is maximal because the subject does not have any knowledge about its significant quality.
- complete information about an analysed object and its all characteristics. This case of cognition does not entail uncertainty. Obviously, information completeness and fullness are of a relative character because these features are depended on feelings of the subject of cognition.
- partial and incomplete information about the object and its all characteristics. Here, a subject of cognition knows about his cognitive limitations resulting from internal and external conditions.

From the viewpoints of science and practice, the most import case in the context of uncertainty modelling is the one of partial and incomplete information. Incompleteness and partiality of information can refer to the range within which an object is recognised (an identification error), the state of particular characteristics of the object (a scale error), and relations between characteristics in the object (an error of relation).

All the mentioned types of cognitive errors might play significant roles in management processes. It happens due to the fact that management processes can be treated as complex information and decision processes aimed at coordination of subjects' actions, with people included in the subject's structure of purposes and resources.

Thus, on each stage of a decision-making process, managers deal with social subsystems, which an indispensable feature is extreme complexity. This causes the situation where full cognition of those systems is impossible. That is why, the information and decision process pursued by managers always takes place in the conditions of uncertainty. Still, there is a group of routine decisions, in which this uncertainty is minimal, but with the growth of organisation's innovativeness and its drive towards maximizing the dynamic efficiency, the level of uncertainty is rapidly increasing.

Uncertainty phenomenon in management processes enforces the need for newer methods of its modelling and analysis at the operational level. Nowadays, statistical models are commonly used. They have long traditions of their application in management and basically, they fall into a standard series of methods used in this field of knowledge (Aczel, 1993). Another very popular approach is fuzzy logic, especially in modelling the concepts expressed in a natural language (Altrock, 1996). An interesting view in the area of forming

rules of procedure for managers on the basis of existing incomplete data is given by a rough set theory. Next contemporary developed research stream in uncertainty modelling is grey systems theory more and more popular in economic applications. It found plenty of applications where a researcher holds a small number of data (Pawlak, 2002).

The approaches to uncertainty modelling mentioned above will be presented in the latter part of the article. Their analysis will be carried out from the viewpoint of their usefulness and purposefulness of application in social sciences. Acknowledging that economics and management are social sciences; thus, under the generalisation, all the methodological remarks concerning social sciences will also be applicable to management sciences.

## 2. PROBABILISTIC APPROACH TO UNCERTAINTY

Historically, the oldest and very firmly established way of uncertainty analysis is a probabilistic approach. It is contemporary based on Kolmogorov's axioms and it is connected with a mathematical theory of measure (Kolmogorov, 1950). In reference to this approach, probability is determined with the use of a probabilistic space  $\{\Omega, F, P\}$ .

**Definition 1.** Assume that there is a probabilistic space  $\{\Omega, F, P\}$  where:

- $\Omega$  is a sample space,
- $F$  is  $\sigma$ -algebra determined on  $\Omega$ , provided that a set of subset of  $\Omega$  is called  $\sigma$ -algebra only when  $\emptyset \in F$  and  $A \in F \Rightarrow A' \in F$  and  $A_1, A_2, \dots \in F \Rightarrow \bigcup_{n=1}^{\infty} A_n$
- $P$  is a function that ascribes numbers from a set of real numbers to  $F$ , what formally can be written as follows  $P : F \rightarrow R$

Making use of a probabilistic space, it is possible to determine probability in a formal way (see Definition 2).

**Definition 2.** Function  $P : F \rightarrow R$  is called a probability function when it fulfils three axioms such as:

- $P(A) \geq 0$  for any  $A \in F$ ,
- $P(\Omega) = 1$ ,
- $P(A_1 \cup A_2 \dots A_n) = P(A_1 \cup A_2 \dots A_n)$  if set are pairwise disjoint i.e.  $A_i \cap A_j = \emptyset$  for  $i \neq j$ .

Axiomatization of probability is a foundation for a methodological status of statistical methods, which are at present as a basic tool of data analysis.

However, it is not the only interpretation of a probability term known in subject literature. There are a lot of them, and an attempt of their classification might pose many difficulties and arouse controversy. An interesting proposal in this field was presented by Ballentine (Ballentine, 2001). According to him, a concept of probability is a result of accepting inductive reasoning logic (Jaynes, 2003; Cox, 1964; Cox, 1961; Jeffreys, 1973). In a proposed classification, he distinguishes Bernulli's interpretation based on a classical frequency approach (Kolmogorov, 1950; Mises, 1957) and Popper's interpretation (Popper, 1957) that emphasizes propensity as a concept which is a mitigation of the assumption about a deterministic character of the reality. This classification also includes approaches that stress the subjective feeling of a probability category, where it takes the form of commonsense statements about the reality. The commonsense statements are given by a subject of cognition on the grounds of his subjective experience and incomplete knowledge (Finetti,

1972; Savage 1951; Good, 1983). A classification of Ballentine's different probabilistic approaches in a descriptive way is shown in Figure 1.

A probabilistic approach to uncertainty modelling has found multiple applications. Still, it also has some restrictions of methodological nature. In particular, they were discussed in social sciences, mainly in theoretical economics. It was considered whether a category of probability can be useful in reference to forecasting the structures of purposes, resources, and effects of human actions (Hoppe, 2007; Dow, Hillard, 1995). Probabilistic methods assume, in the majority, established distributions of random variables that describe analysed phenomena. In fact, in problems typical for management and economics, the analysed variables might not meet theoretical assumptions. What is more, a problem of variables' measurement also occurs. Usually in social sciences, we deal with variables which we can measure at most on the ordinal scale. Therefore, a lot of probabilistic methods e.g. all the statistical parametric methods can be used with limited methodological trust as for achieved results.

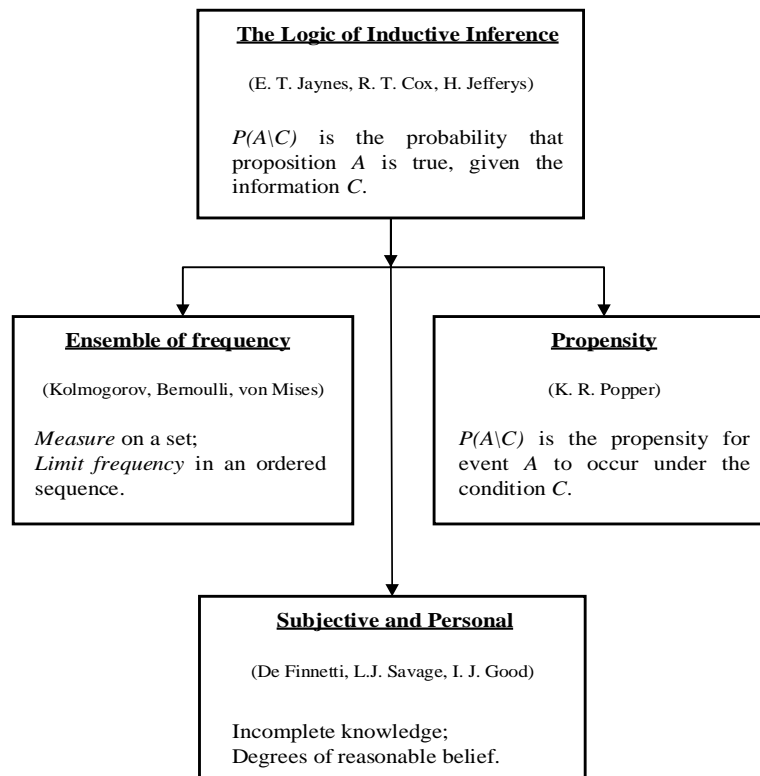


Fig. 1. Classification of probability interpretations

Source: L.E. Ballentine, *Interpretations of probability and quantum theory*, Foundations of probability and physics, World Scientific Singapore, 2001.

### 3. FUZZY LOGIC IN UNCERTAINTY MODELLING

Another important theory of uncertainty modelling, which found widespread practical applications in data analysis, is fuzzy logic. It was initiated as a generalisation of a classical set theory (Zadeh, 1965). In a fuzzy approach, elements of the set can belong to the set to some extent, but not definitely as it is in a classical set theory.

**Definition 3.** A fuzzy set  $A$  on a certain space  $X$  is called a set of pairs:

$$A = \{(x, \mu_A) : x \in X\}$$

where:  $\mu_A \in [0,1]$  is called a degree of membership of any element  $x$  to a set  $A$ .

If we assume that  $\mu_A$  reflects the character of a function, then such a function is called a membership function.

**Definition 4.** Function  $\mu_A$  that maps the membership of any element  $x$  to a set  $A$  is called a membership function when:

$$\mu_A : X \rightarrow [0,1] \Rightarrow \mu_A(x) \in [0,1]$$

If space  $X$ , on which any fuzzy set was determined, belongs to a set of real numbers, then we can identify the fuzzy set with a fuzzy number.

**Definition 5.** A fuzzy number is called such a fuzzy set  $A$  that:

$$A = \{(x, \mu_A) : x \in X \wedge X = R\}$$

where  $R$  means a set of real numbers.

Fuzzy logic has been widely used for analysing uncertainty in social sciences as well as technical sciences (Ragin, 2000; Buckley, Eslami, Feuring, 2013, Vol. 91). It allows to formal modelling of blurred concepts resulting from imprecision of a natural language. Its classical applications are supporting decision-making processes (Zadeh, 1983, 11(1-3)), a mathematical formalization of linguistic variables (Zadeh, 1975, 8(3)), and usage in contribution to control processes (Lee, 1990, 20(2)).

Despite several successful practical applications of fuzzy logic, it is worth to bear in mind its weaknesses. One of the major ones is the fact that a choice of membership functions is arbitrary. Next, carrying out consecutive operations on fuzzy quantities is increasing the level of uncertainty in analysis. Thus, it is extremely important to conduct studies aimed at finding ways to overcome these difficulties and modify the principles of performing fuzzy algebraic operations proposed in a classical version by Zadeh (Kosiński, Prokopowicz, 2016, 32(46/05); Kosiński, Prokopowicz, Ślęzak, 2003, 51(3)).

### 4. ROUGH SET THEORY

A different view on uncertainty, in comparison with a fuzzy logic and a probabilistic approach, can be found in a rough set theory. The theory is a kind of a mathematical formalism, which is useful in modelling fuzzy concepts. According to the main idea of the rough set theory, we possess some information about the universe, and we make use of information when creating the sets. It is a completely different approach than in a classical set theory where sets are determined on the basis of information about the characteristics of elements excluding any knowledge concerning the universe. For a formal description of rough sets, we need a concept of an information system (Pawlak, 1982, 11(5); Pawlak, 2004, (5)). The example of an information system is shown in Figure 2.

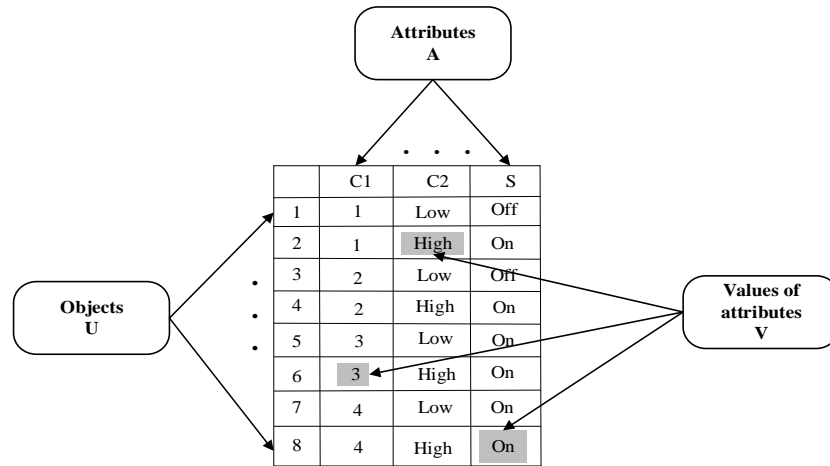


Fig. 2. Example of an information system

Source: Z. Pawlak, *Rough sets. New method of data analysis*. Warsaw University Magazine, (5) 2004 (in Polish).

In a formal way, the structure of the information system can be presented in the conformation of a four-element set (Pawlak, 2004, (5)).

**Definition 6.** Information system is called a set of elements:

$$SI = (U, A, V, f)$$

where:  $U$  – a non-empty finished set of objects called universe,

$A$  – a set of attributes,

$V$  – value of attributes from a set  $A$  such that  $V = \bigcup_{a \in A} V_a$ , provided that  $V_a$  is a field

of the attribute  $a \in A$ ,

$f$  – an information function such that  $f : U \times A \rightarrow V$ , provided that  $\forall a \in A, x \in U, f(a, x) \in V_a$ .

Having a formally defined information system, it is possible to combine an indiscernibility relation  $I(B)$  with every subset of attributes  $B \subseteq A$ .

**Definition 7.** Indiscernibility relation  $I(B)$  is called such a relation, which fulfils the following condition:

$$I(B) = \{(x, y) \in U \times U : \forall a \in B; f(a, x) = f(a, y)\} \quad B \subseteq A$$

A set of all classes of  $I(B)$  relation's abstractions provides a division of a set  $U$  with the use of a set  $B$ . Assume that  $B(x)$  is a class of abstraction of  $I(B)$  relation that includes some object  $x$ . Moreover, let us also assume that we want to determine a non-empty set  $X$  which is a subset  $U$  in the categories of attributes  $B$ . It is possible only through defining the two following sets:

$$B_*(X) = \{x \in U : B(x) \subseteq X\} \dots B^*(X) = \{x \in U : B(x) \cap X \neq \emptyset\}$$

$B_*(X)$  is a lower approximation of a set and it contains objects, which definitely can be included in a set  $X$ ; whereas  $B^*(X)$  is an upper approximation of a set where objects can be



only regarded as possibly belonging to a set  $X$ . Differences between  $B_*(X)$  and  $B^*(X)$  are called a boundary of a set  $X$  and we write it down as:  $BN_B(X) = B^*(X) - B_*(X)$ . A boundary  $BN_B(X)$  includes objects, which unambiguously cannot be ascribed to  $X$  due to a contradictory description in attributes. However, objects that belong to  $U \setminus BN_B(X)$  definitely can be regarded as the ones which do not belong to  $X$ . Such an idea is presented in Figure 3 in the descriptive way.

The concept of rough sets can be applied in describing imprecise knowledge about a depicted phenomenon. On their basis, it is possible to generate principles that map interdependences which take place in data. Still, a rough set theory does not replace a classical set approach. It is only its supplement. Contrary to a fuzzy approach, a rough set theory is based on the concept of indiscernibility of elements, which is depended on existing empirical material. Thus, indiscernibility is not established in an arbitrary way as it is in case of a membership function in fuzzy logic. On the one hand, it is an advantage, which involves objectification of analysis through direct turning to data. On the other hand, it might cause lower flexibility in applications (Tadeusiewicz, access: 17th October 2017).

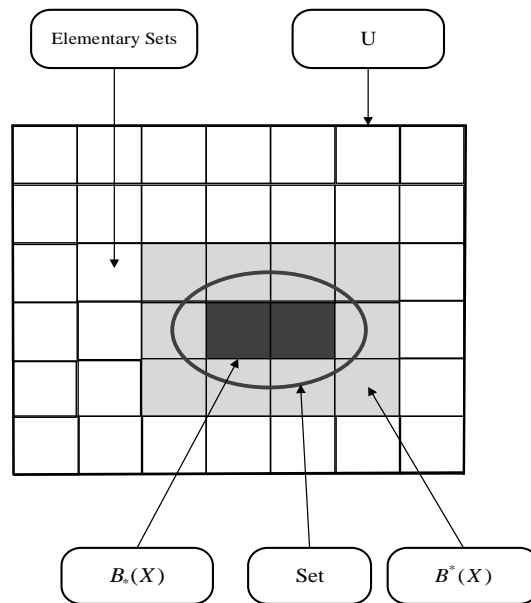


Fig. 3. Lower and upper approximation of a set.

Source: Z. Pawlak, *Rough sets. New method of data analysis*. Warsaw University Magazine, (5) 2004 (in Polish).

### 5. GREY SYSTEMS THEORY

Grey systems theory (GST) is a relatively new developed theory of uncertainty modelling compared with statistics or fuzzy logic. Similarly to a rough set theory, it started in the early 1980s; however, due to a lack of English-language works its popularity and development in international environment was very limited. Only at the beginning of the

1990s the first more important publications in English language began to appear. Only then, its wider popularisation in the scientific community was possible (Lin, Liu, 2004).

In order to describe the reality, GST uses the following general axioms concerning the nature of information (Liu, Yang, Forrest, 2016):

- Axiom of Informational Differences. “Difference” implies the existence of information. Each piece of information must carry some kind of “difference”.
- Axiom of Non-Uniqueness. The solution to any problem with incomplete and indeterminate information is not unique.
- Axiom of Minimal Information. One characteristic of grey system theory is that it makes the most and best use of the “minimal amount of available information.”
- Axiom of Recognition Base. Information is the foundation on which people recognize and understand (nature).
- Axiom of New Information Priority. The function of new pieces of information is greater than that of old pieces of information.
- Axiom of Absolute Greyness. “Incompleteness” of information is absolute. Incompleteness and non-determinism of information have generality.

The principles demonstrated above are not axioms in the strict sense. They are more like philosophical assumptions connected with the nature of a cognition process. On their basis, it is not possible to either strictly define a concept of grey information or determine forms of its expression in a logical way (Mierziak, Xie, Nowak, 2018, 8(2)). However, it can be done through creating so called a grey space that consists of three elements which are sets (Mierziak, et. al, 2018).

**Definition 8.** Assume that we have the following grey space  $\{\Omega, F, G^\circ\}$ . In this space:

- $\Omega$  means a set, which is a space for analysis where all the other sets in this analysis belong to,
- $F$  is  $\sigma$ -algebra generated on a set  $\Omega$  i.e.  $\emptyset \in F$  and  $A \in F \Rightarrow A' \in F$  and  $A_1, A_2, \dots, A_i \in F \Rightarrow \bigcup_{i=1}^{\infty} A_i \in F$ ,
- $G^\circ$  is a function mapping  $F$  in the set of real numbers, what formally can be written down as follows  $G^\circ: F \rightarrow R$ , and it is a function of greyness when it fulfils such axioms as:

- 1)  $G^\circ(A_i) \geq 0$  for every  $A_i \in F$ ,

- 2)  $G^\circ(A_i) = 0 \Leftrightarrow A_i = \{a_i\}$ , where  $A_i = \{a_i\}$  means any singleton belonging to  $F$ ,

- 3)  $G^\circ(\Omega) = 1$ ,

- 4)  $G^\circ\left(\bigcup_{i \in N} A_i\right) = \sum_{i \in N} G^\circ(A_i)$ , where  $A_i \cap A_j = \emptyset \wedge i \neq j \wedge A_i \neq \{a_i\}$  or

$$G^\circ\left(\bigcup_{i \in N} A_i\right) = G^\circ(A), \text{ where } A_i \cap A_j = \emptyset \wedge i \neq j \wedge A_i = \{a_i\} \wedge A = \bigcup_{i \in N} A_i,$$

Referring to a grey space, all important basic categories of grey systems theory can be generalised. One of the most significant categories of these types are grey numbers. A grey number is a number, which value is not exactly known. Only an interval in which this value is placed is known. These numbers might be used for the analysis of problems about which we only know the order of an analysed magnitude.

**Definition 9.** If  $\{\Omega, F, G^\circ\}$  is a grey space and  $\Omega \subset R$  and  $D \in F$ , then a grey number  $\otimes = [a, b]$  is called an unknown number  $d^* \in R$  about which we can only say that  $a \leq d^* \leq b$ , where  $a = \inf(D)$  and  $b = \sup(D)$ .

Apart from grey numbers, a major construct used in GST is a weight function of whitenization. This function is significant in many methods that support decision-making and evaluation processes.

**Definition 10.** Assume that a grey space  $\{\Omega, F, G^\circ\}$  and a set  $A \in F$  and a set  $Y = \{y \in R : 0 \leq y \leq 1\}$ , then a function  $f: A \rightarrow Y$  is called a weight function of whitenization if it additionally preserves the following conditions:

- 1)  $f(A) = 1$  for every  $A = \{a\}$ , what means for every singleton
- 2)  $f(\emptyset) = 0$ .

A crucial element of grey systems theory is an analysis of data sequences. The sequences can concern time, information about the state of evaluation criteria of some analysed object or information about a set of objects. Data in a sequence are not expressed with the use of grey numbers, because greyness of information is ascribed to the whole data set in the sequence, not to particular elements that constitute this sequence. Making use of a grey space, we can strenghten this way of thinkng, which has a fundamntal meaning for GST applications in terms of a relation analysis between variables and forecasting (Mierzwiak, et. al, 2018).

Currently GST has found a lot of applications in various branches of science and business practice, especially in economics and management (Delcea, 2014, 26(1); Delcea, 2015, 5(2)). Basically, it can be regarded as one of the techniques of data mining, which has a specific scope of applications connected with a small number of data. Except for statistics, fuzzy logic or a rough set theory, it can be another methodology of uncertain data analysis. Restrictions of using GST in economic and management problems are the same as the restrictions in all mathematical methods of uncertainty modelling, i.e. they achieve satisfactory results in statistical problems. However, when it comes to problems of a dynamic structure of resources and action purposes, these methods do not bring the desirable results. Furthermore, the attention might be paid to the fact that forecasting methods in GST are trying to predict accurately states of the analysed systems in coordinates of time. While it makes perfect sense in case of technical issues, it arouses serious methodological controversy in the event of economic systems (De Soto, 1998). Another essential issue is drawing conclusions from the analysis on the basis of a small number of data. GST methods are constructed in such a way that a small number of data is not an obstacle in an analytical process. Still, it should be noticed that in the induction process and generalisation of results, a method of analysis does not matter as much as the representativeness of a research sample. Therefore, the conclusions arising from analyses carried out with GST ought to be treated very carefully.

## 6. CONCLUSION

Currently, correct data analysis and appropriate dealing with an uncertainty problem have started to be meaningful for many organisations (Pietrewicz, 22 24(2)). Development of information techniques allows to handle the calculation complexity of analytical algorithms and large data sets. In the following article, basic approaches to uncertainty modelling were analysed such as probability, fuzzy logic, a rough set theory, and a grey systems theory. Strengths and weaknesses of each approach were indicated in the context of

management and economic sciences, and conclusions and recommendations were formulated. An extremely important conclusion for a management practice is that demonstrated methods of mathematical modelling in regard to the organisations aiming at achieving a dynamic efficiency might not be of much value. Thus, this concerns all the organisations, which are directed towards creativity and innovations. On the other hand, good results of mathematical methods can be obtained as for modelling of the organisation with a stabilised structure, purposes, and action resources; therefore, in case of the organisations striving for maximising a static efficiency.

Further studies should be related to a systematic analysis of literature in the area of applications of particular approaches to uncertainty modelling. Very interesting might be the results of such an analysis in reference to a grey systems theory, because it is the least known and popular. What is more, carrying out this analysis can indicate main tendencies in a given scientific discipline and identify new research gaps, which has been unknown so far, on the borderline of management sciences and data science.

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## **UAS ALBATROS IN ACTIVITIES FOR DEFENCE AND SECURITY ON SEA WATERS**

Together with publishing, by the Armament Inspectorate of Ministry of National Defense, the tactical program UAS *Albatros* of short range, vertical take-off and landing, for the Navy, employees of the Polish Naval Academy (PNA) with the staff of the Lublin University of Technology (LUT) began the analytical and conceptual phase. The result was development of UAS usage assumptions in activities for the Navy in the field of reconnaissance as well as creating a picture of the situation in the marine area (*Maritime Situational/Domain Awareness* MSA/MDA). As part of extended applications, the so-called *dual use* was indicated for other representatives of maritime state services (mainly the Border Guard) and commercial entities (*Lotos Petrobaltic S.A.*), as potential recipients of UAS (as part of conducting protection of marine critical infrastructure facilities CI).

The impact potential of the Navy significantly increased in recent years. It is a result of obtaining modern controlled anti-ship missiles, both mounted on the decks of warships (missile RBS-15 Mk 3 on the warship decks of 660 project), and included in Marine Rocket Unit, MRU (2 Coastal Combat Squadrons CCS – equipped with *Kongsberg* NSM rockets). What is important from the usage of combat abilities point of view, range of both types of rockets of about 200 km significantly exceeds the range of detection of mediums at the disposal of ships (carriers of rockets) as well as MRU.

The article presents author's opinion on possibilities of usage of UAS vertical take-off operating from the decks of warships and coasting in the Navy. The increase in the ability to conduct the diagnosis (RADINT, SIGINT, ELINT/COMINT) should be considered as key issue, also realization of tasks as part of extending the possibilities of using UAS by other services.

**Keywords:** Unmanned Maritime Systems, Unmanned Aircraft Systems, UAS, Albatros.

### **1. INTRODUCTION**

The Navy carries out tasks in sea areas in accordance with assigned tasks of Peace (P), Crisis (C) and War (W) time and allied commitments. Character of the tasks is determined by specific area of the Navy activities: In the national defense system we distinguish:

- Defense zone of the Navy, which is the main area of operational activity of the Navy and an area of approximately 32 500 km<sup>2</sup>. It covers the area of Polish sea internal waters, territorial waters, adjacent zone and exclusive economic zone (operationally divided into coastal defense zone – covering lane of width of 20 nautical miles along

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the coast and sea defense zone – covering waters from N border of coastal defense zone to external border of the Naval Defense Zone);

- Area of Operational Navy Interest (AONI), covering waters and airspace of the Baltic Sea, zones of the Baltic Straits, and also east and north part of the North Sea, the countries lying above these waters and the armed forces and their operational deployment.

In the alliance defense and crisis response system the Navy forces affect the land, air, and North Atlantic sea area on N from the Tropic of Cancer. However, during stabilization and humanitarian international actions the area of operation of naval forces covers any geographical area.

## 2. UAS PROJECTS – PRESENT STATUS

In 2016 the Armament Inspectorate announced start up, as additional, of program of the UAS tactical short range destined for the Navy. Project named *Albatros* covers acquiring unmanned aircraft system (UAS) of vertical take-off and landing (Plan Modernizacji Technicznej, 2014). Requirements specified in the request for information (RFI) determine destination of UAS for the realization of reconnaissance actions (Ogłoszenie, 2016, IU):

- reconnaissance of enemy forces over land;
- reconnaissance of enemy forces at the sea and coastline;
- searching for the shipwreck survivors at the sea
- continuity of action 24/7 h;
- enabling landing and taking off from the Navy ships;
- enabling storage on the Navy ship's decks (for this purpose, the assumptions of UAS hangars in a standard container were developed);
- enabling steering and controlling of realization of reconnaissance tasks from the Navy ship's decks (flight control and data transmission);
- enabling quick assembly of the system on the Navy ships;
- the ability to maintain buoyancy after launching.

As part of the provision of reconnaissance systems, UAS should have:

- optoelectronic warheads (infrared and visible range reconnaissance);
- radiolocation station SAR/GMTI Synthetic Aperture Radar (SAR) and Ground Moving Target Indicator (GMTI);
- radiolocation station SAR/MMTI (Maritime Moving Target Indication);
- electronic reconnaissance stations (ELINT/COMINT).

The basic concept and abbreviations related to the problem of object recognition are presented in Table 1.

Table 1. Concepts of object recognition

Abbreviation	Full name
<b>SIGINT</b>	<i>Signal Intelligence</i>
<b>ELINT</b>	<i>Electronic Intelligence</i>
<b>COMINT</b>	<i>Communication Intelligence</i>

Source: Own elaboration based on: (AAP-6, 2014).



UAS will have to be able to fire by using on-board weapons.

In January 2017 the Kazimierz Pułaski foundation published a commentary to the realization state for the Technical Modernization Plan (TMP) for 2013-2022. Operational program “Rozpoznanie obrazowe i satelitarne” (*Satellite and imagery intelligence*) includes the purchase of unmanned systems. TMP 2013-2022 assumed acquisition of 6 UAS classes (Table 2).

The foundation commentary draws attention to the growing importance of systems of imagery intelligence operating in favor of offensive and defensive systems (Lipka, 2017). The current implementation of projects concerning the acquisition of UAS systems by the Polish Armed Forces have already recorded serious (delayed dozens of months) delays.

Table 2. list of UAS projects provided for in TMP 2013-2022

Program code	class	number	Remarks
<i>Zefir</i>	MALE <sup>2</sup> Medium and big	4 sets	capable of transferring weapons
<i>Gryf</i>	Medium range	12 sets	Division level
<i>Orlik</i>	Short range	12 sets	Brigade level
<i>Wizjer</i>	mini	15 sets	Battalion level
<i>Ważka</i>	mini	15 sets	Vertical take-off/landing
<i>Mikro</i>	micro	6 sets	
<i>Albatros</i>	Short range	4 sets	Vertical take-off/landing

Source: (Dmitruk, 2016).



Fig. 1. View of UAS Albatros approach to landing aboard a ship

Source: Lublin University of Technology.

<sup>2</sup> MALE – *Medium Altitude Long Endurance*.

As part of the PNA's cooperation with LUT, an outline of the use of UAS in the marine environment for the development of the Polish Navy's capabilities was made. Particular emphasis has been placed on applications in the field of reconnaissance, target identification and actions for the protection of marine critical infrastructure facilities.

*Think tank* indicates that it is a burning issue to provide systems of imagery intelligence for the Marine Rocket Unit. There is a situation in which Coastal Rocket Squadrons do not have the opportunity to use the full combat potential of modern anti-ship missiles on their equipment (tasks under *Targeting and Over the-horizon Targeting OTH-T* and *Battle Damage Assessment – BDA*).

### 3. UAS ALBATROS

Basic tactical and technical data of UAS Albatros are presented in Table 3. The performance with the use of stealth technology elements (appropriate choice of construction, materials used, painting and others) is to guarantee reduction of visibility of units signature in the air. The unit's ceiling, anticipated at 5000 m, will allow reaching the range of detection of surface objects up to 150 km, and on the surface wave up to 40 km<sup>3</sup>.

Table 3. Basic Technical and tactical data of UAS Albatros

Take-off mass [kg]	200	Fuselage	Performed in <i>Stealth</i> technology
propulsion	Combustion engine	Autonomie [h]	up to 5
Mass of armament	(30% of UAS mass) up to 50 kg	Flight altitude [m]	Max 5000
RCS [m <sup>2</sup> ]	0.1	V max [km/h]	100-120

Source: Own elaboration based on information from LUT.

As the basic package of tasks possible to be implemented by UAS Albatros (while ensuring continuous performance of mission 24/7), the following are indicated:

- reconnaissance over the land;
- reconnaissance over the sea;
- searching for the shipwreck survivors, taking part in SAR/CSAR actions (fig. 2);
- indication of the target over the horizon – also radiolocation (*Over-the-horizon Targeting*, OTH-T), action as the Target Reporting Unit (TRU), including highlighting of targets;
- Battle Damage Assessment (BDA);
- immediate impact resulting from reconnaissance and analysis for immediate performance (*Time Critical Strike*, TCS);
- actions in favor of own forces as part of the protection of troops (*Force Protection*, FP), and in this creating buffer zones, also combating asymmetrical threats. Still current threats from asymmetrical means cause the need for effective protection and defense of vessels and shore infrastructure of the Polish Navy (*Force Protection*). We are talking about ships carrying out a stopover on unguarded roadsteads, anchorages or maneuvering in shallow water zones and closed water areas. The use of UAS will, firstly, improve the possibilities of detection from the recognition of threats, and secondly, it will allow them to immediately oppose them;

<sup>3</sup> Data obtained from the Lublin University of Technology.

- activities in the common architecture of UAS-USV-UUV, including mainly retransmission of signals and data transmission in the relation of the drones-command post.



Fig. 2. View of the UAS Albatros, SAR version

Source: Lublin University of Technology.

#### 4. DEFINED RECIPIENTS AT THE TACTICAL LEVEL

Impact rocket potential, designed to combat naval targets and selected land targets of the Navy, is created by a Marine Rocket Unit (two Fire Squadrons) with platforms in the form of missile ships of project 660 (*Orkan*). Marine Rocket Unit, equipped with Norwegian missiles (Table 4) – *Naval Strike Missile* (NSM) – is designed mainly to combat the opposing naval forces of the enemy.

Table 4. Characteristics of the NSM missiles

NSM (IR seeker)		
	Range [km]	>200
	Combat warhead [kg]	Equivalent of 100 TNT
	Missile mass [kg]	407
	Speed [Mach]	0.7-0.95
	Length [m]	3.96

Source: (KONGSBERG).


Its other tasks include the cover of the main Naval Bases (NB), Landing Points (LP), areas convenient for landings of amphibious warfare as well as important military and industrial facilities located on the Polish coast.

MRU is characterized by high maneuverability and high fire efficiency. MRU has the ability to cooperate with the naval forces of the Navy in defense of the sea coast, shielding

of maritime transport lines as well as support for the activities of the Navy and Land Forces (LF) in defense operations.

Modern Swedish missiles, the RBS-15 Mk3, are used to equip the three remaining missile vessels OORP Orkan, Piorun, and Grom. These are defense missiles capable of maneuvering and changing the direction of a flight on a previously planned route (*waypoints*).

Table 5. Characteristics of the RBS-15 Mk3 missiles

RBS-15 Mk3 (Active radar seeker)		
	Range [km]	>200
	Combat warhead [kg]	200
	Missile mass [kg]	630
	Speed [Mach]	0.9
	Length [m]	4.35

Source: (SAAB).

## 5. ONBOARD STATIONING

Only the warships of certain types have the potential for taking (take-off and landing) the UAS (table 6). In 2016, there was information about the underestimation of expenses related to the implementation of the plans of “Plan Modernizacji Technicznej Sił Zbrojnych RP w latach 2013–2022” (*Plan for the Technical Modernization of the Polish Armed Forces in 2013–2022*), based on which “Program Operacyjny – zwalczanie zagrożeń na morzu w latach 2013-2022/2030” (*Operational Program – fighting threats at the sea in 2013–2022 / 2030*) is implemented. Originally, it was assumed to acquire for the Navy three patrol vessels with the function of fighting mines – Czapla (2015–2026), and the same number of the coast defense vessels – Miecznik (2014–2026). In practice, this means that the issue of obtaining new warships by the naval armed forces is questionable. Their acquisition is dictated by an urgent operational need.

The *Strategic Concept of National Security of the Republic of Poland* (“Strategiczna koncepcja bezpieczeństwa narodowego Rzeczypospolitej Polskiej”) published in February 2017 indicates the key role of frigates, which for years have been considered as “workhorses of navies” in opposition to contemporary threats (Strategiczna koncepcja, 2017). This fact is also confirmed by the general tendency to increase the number of large ships by the navies of the Baltic states (increase from 18 to 22 in comparison with the state from 1978 and 2015 with a reduction in the number of ships remaining in the classes). What is important for the future usage of UAS Albatros, units of this class absolutely must have the ability to base or at least receive (landing and take-off) on-board helicopters. Thus, it is obvious to maintain and develop the possibility of using UAS on the units of these classes. The specialization of frigate ships (anti-submarine combat, escorting, combating air assault agents) is not important. Because all frigates need to improve their ability to strike and point targets at non-horizontal ranges. Equipment at UAS will naturally lead to greater opportunities.

Table 6. Warships of Republic of Poland which can take UAS

Class	Project	Number	Name	Mission
Training ship	888	1	ORP Wodnik	FP
Rescue ship	570	2	OORP Lech, Piast	SAR, CSAR
Spy ship	863	1	ORP Nawigator	ISR, OTH-T, BDA
ZOP Frigate	OHP	2	OORP Gen. K. Pułaski, Gen. T. Kościuszko	ISR, FP, OTH-T, DBA
Logistic support ship	890	1	ORP Adm. X. Czernicki	ISR, FP
Sum (current state)		7	Planned units	
Project <i>Gawron</i> (in construction)			ORP Ślązak	
Project <i>Miecznik</i>		3	-	ISR, FP, OTH-T, BDA
Project <i>Czapla</i>		3	-	ISR, FP, OTH-T, BDA

Source: own elaboration.

## 6. UAS ARMAMENT

One of the elements to be assessed and variant when carrying out conceptual work on UAS operating in the marine environment is the ability to transfer weapons. The main limitation in this respect is the UAS load capacity and the maximum mass of weapon systems of 50 kilos indicated by the LUT.

Performance of offensive actions within the framework of TCS obviously requires UAV (*Unmanned Aerial Vehicle*) equipped with weapons able to affect marine objects. While the tactical UAV intended for the implementation of missions over sea areas is not capable of transferring agents capable of combating ships of any class, one should not forget about the ability to attack small targets (boats and pontoons), which can be implemented, for example, using onboard HMG.

*Advanced Precision Kill Weapon Systems* are already being created (APKWS on board of MQ-8B *Fire Scout*). The query of materials concerning fire-fighting measures of UAS global structures indicates that they are equipped with:

- anti-tank guided missile (AGM 114 *Helfire* – mass of the missile, about 45 kg, in case of UAS MQ-1 Predator);
- laser-guided bomb GBU-12 *Paveway II*, UAS or bombs GBU-38 (MQ-9 *Reaper*);
- anti-radiation missiles.

Development of the attack system will be the challenge for UAS Albatros. Additional analyze requires the development of modular variants of suspended rocket sets (guided missiles and unguided missiles). Anti-tank sets can be the example here. Mass of the whole system of ATM *Spike* is about 26 kg and it is an element worth researching on the use of this type of weaponry on UAS decks. HMG, bombs and non-lethal weapon systems<sup>4</sup> are

<sup>4</sup> This type of weaponry includes Long Range Acoustic Devices, flamethrower and flashlight grenade launchers, laser blinders.

also taken into account. At the current level of development of UAS, one of the key elements becomes acquiring the ability to combat. We are talking about intercepting and disabling and destroying systems of UAS. One example of this is the light weight (weight of a set of 12 kg) *SkyWall 100 Drone Defense System*.

It is destined to combat UAS systems in a distance from 10 to 100 m in the range of the speed of movement of the target up to 15 m/s (approaching target) and up to 12 m/s (target moving along). The temperature range of the set operation is between -5°C and +50°C. The cartridge containing the incapacitating net and weights weighs 760g. The outspread net covers the surface of about 8m<sup>2</sup> and moves at a speed of about 3 m/s (OPENWORKS).

## 7. DEFENCE ONLY?

The above-mentioned areas of using UAS for state defense do not fully cover the potential of such systems. As regards the implementation of the mission for safety, with particular emphasis on the state's maritime security, the following range of activities has been identified:

- ecological monitoring (compliance with exhaust emission directives, observation of periodic blooms of water, spills of petroleum substances, etc.);
- combating maritime terrorism;
- protection of sea objects of the critical infrastructure (off-shore platforms, wind farms, sea ports);
- monitoring of situations within the framework of combating crisis situations (natural disasters, humanitarian aid, damage assessment).

Potential receivers of the UAS systems can be services and institutions responsible for safety on Polish sea areas. The main services that are part of the naval forces of the state include:

- Sea Border Guard Unit;
- Water Police;
- Services subordinate to Maritime Offices;
- Companies involved in the exploitation of energy resources (oil, gas);
- Maritime Search and Rescue Service.

The protection of marine Critical Infrastructure (CI) facilities is of particular importance here. On the Polish coast, the role of the main transshipment ports is played by ports in Gdynia, Gdańsk and the Szczecin-Świnoujście port complex. The newly opened Gazoport in Świnoujście (in the scope of imports of liquefied natural gas LNG) and Naftport in Gdańsk (oil and petroleum products) play a key role in diversifying the supply of strategic raw materials for the country's energy security. In addition, in the area of the Exclusive Economic Zone (EEZ), continuous drilling works are run by platforms seated on the seabed and extracting crude oil and natural gas. The importance of LNG supplies by sea was noticed on the other side of the Atlantic. Gas terminals and LNG carriers serviced by them, sometimes called gas carriers, are covered with special protection on approach tracks. These tasks involve serious forces and resources (from officers to patrol boats and helicopters). Since scientists cannot agree on the effects of a potential terrorist attack on such objects, LNG terminals are treated as potential goals of this type of activity. On the other hand, gas carriers, next to tankers, are indicated by experts directly as one of the main goals of terrorist actions.

On the Polish coast there are favorable conditions for the construction of wind farms, as alternative sources for acquiring the so-called *clean energy*. Data provided by Polskie Towarzystwo Energetyki Wiatrowej (the Polish Wind Energy Association) indicate that the capacity of wind farms in Polish maritime areas is approx. 8GW.

Under the surface of the water there are dozens of undersea cables (power, telecommunications), pipelines and other facilities that enable or draw from the sea resources, or secure the process of conducting scientific research.

The development of asymmetrical threats and elements of the subliminal and hybrid war indicates a very high dynamics of dangers. Activities aimed at early detection of symptoms and opposition to threats are characterized by time deficits. UAS have several basic positive elements that characterize their activities. As a key to mention should be the dismissal of operators (crews of on-board surface and air units, or shore facilities for the benefit of which tasks are carried out) from the sources of threats. In addition, the range and speed of UAS in combination with installed ISR sensors significantly affect the possibility of early detection of threats. This creates a situation that enables the relevant services to analyze the picture of the situation (creating operational awareness of the reservoir, the region) and take action almost at the same time (provided that armed UAS is available).

Considering the issues of additional missions and potential recipients from outside the defense and security of the maritime state, it is not difficult to identify other potential UAS users. The large range of detection, good field of view, the possibility of rapid movement are features that should be considered as very beneficial from the point of view of using UAS to operate in the Police structures or services responsible for supervision and traffic control on motorways. The same factors may be used by the State Fire Service (patrolling and commanding firefighting actions of large-area forest facilities, evacuating and delivering extinguishing agents to hard-to-reach areas). The next services are the Border Guard (patrolling border regions, as well as people, as well as in inland and maritime areas), Customs Service or Road Transport Inspection.

## 8. SUMMARY

The dynamics of contemporary military and non-military threats forces the introduction of modern systems capable of counteracting them to the full extent. Acquiring UAS by the Navy is an urgent matter due to the nature of the operations performed (operational need) and the level expected by the crews of ships and soldiers of the shore units of the Navy. The main task of UAS operating in the marine environment (over the water areas) performing tasks from ship decks and coasting, are exploratory missions. The wide range of possibilities of modern UAS in this area allows to increase and effectively use the existing combat potential (mainly fire). It should be emphasized that UAS Albatros in the *dual use* can carry out a whole range of missions in favor of the naval services of the state. Using the potential created by the modular construction, it could easily be adapted to the specifics of the tasks of the Fire Brigade, Customs Service or the Police.

The above-mentioned "Strategic Concept (...)" in the chapter devoted to recommendations for the development of Polish naval forces, as the need indicates the acquisition of unmanned systems supporting operations in the air, on water and under water, including unmanned air systems of short and medium range. Described, in the article, examples of the use of this type of systems may be a contribution to the discussion on the role of the state security system and securing Polish interests at sea. We are talking about applications from

both the defense area of the state and the implementation of actions for the broadly understood maritime security of the state.

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## **CULTURAL FOUNDATIONS FOR NEOLIBERAL CAPITALISM: CONSUMER AND CORPORATE CULTURE**

The authors' considerations are based on the hypothesis that contemporary capitalism is not the recreation of 19<sup>th</sup> century free market capitalism but an ideological system supporting mainly the interests of multinational companies. The neoliberal agenda is based also on cultural foundations and peoples' economic choices are influenced by cultural factors. The overarching logic of neoliberal capitalism boils down to profit maximization and consumption. When this logic was internalized by people, they became unconscious followers of the rules imposed upon them by capital owners. According to neoliberal ideology, corporate culture should be applied to every domain of personal and social life. Interpersonal relations and marriage have become commodified as well. As a result, the state of mental health of the population has worsened and people have failed to achieve lasting satisfaction. The purpose of the paper is to demonstrate from sociological point of view in what way neoliberal values pervade numerous domains of both social and personal life bringing about negative consequences.

**Keywords:** consumerism, consumer capitalism, corporate university, debt crisis.

### **1. INTRODUCTION**

Neoliberal economists claim that selfish individuals should compete among themselves to achieve optimal economic results. Their choices are based on full information and result in the maximization of profits. Sociologists and anthropologists regard this economic theory as 'providential' for nobody is able to explain in what way "the invisible hand of the market" works (Herzfeld, 2004, p. 144). From sociological perspective power relations, uneven access to information, and herd behavior undermine the basic tenets of the neoliberal economic theory. The sociological theory of economic field explains in what way legal regulations support the interests of the biggest market players. What is more, the most powerful economic players are able to influence cultural production creating dominant discourses and instilling into people values which support the interests of capital owners. From the 1960 onwards the term leisure society was used to denote the new condition of life in the

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advanced societies of the West. Modern people supposedly ceased to be preoccupied with work as material well-being became widespread. Instead, they were to concentrate on freedom, self-realization, self-improvement, self-development and consumption. The ideal of egalitarian and democratic society was promoted in the U.S. which was epitomized by such slogans as 'the American Dream', or *embourgeoisement* (Rojek, 2013). These processes and phenomena were taking place in a specific cultural context which is defined as the condition of postmodernity (Lyotard, 1984). Jameson (1985) points to the simultaneous emergence of consumer capitalism and postmodernism. Their mutual relationship lies in the fact that postmodernism enables the reproduction of consumer capitalism.

## 2. INTERNAL CONTRADICTIONS OF NEOLIBERAL CAPITALISM

From sociological point of view economic neoliberalism is a political project which does not eliminate state intervention but concentrates it in certain fields. Free market capitalism is a construct which supports the interests of the biggest market players fostering mergers and acquisitions. Bourdieu (2005) created the theory of economic field which assumes that branches of national economy, whole national economies and world economy can be regarded as fields which means that they are entities governed by internal rules of the game. Within fields there exist constant struggle for overpowering business competitors also by using unfair methods. The biggest players try to influence legislation and state functionaries to limit competition on the part of incumbent companies which may lead to regulatory or state capture. Such distortions of the market are integral part of capitalism and as a result, there is no perfect competition. Economic sociology provides important insights into market processes stressing the importance of power relations while creating markets. There exists status hierarchy within every market. Markets have structures created by power relations and they cannot be conceptualized as networks within the interactionist approach (Swedberg, 2003).

There is no equality between capital owners and consumers within economic fields as well. Consumers are controlled by consumer culture as the use of force has been replaced by seduction. What is the connection between consumption, leisure and contemporary capitalism? A massive increase in labor productivity in the first half of the 20<sup>th</sup> century led to a crisis of overproduction, putting in jeopardy capital owners' gains. As it was necessary to find buyers for mass-produced goods, laborers became the consumers of goods which they had produced. The problem of enormous surplus industrial capacity occurred in a particularly stark dimension after World War II in the United States due to reduced demand for products related to the conduct of war. In such circumstances consumer society was created in the United States. Classical economic theory indicated that people consume in order to satisfy their basic needs, which include food, shelter and clothing. These theories are no longer relevant in the age of postmodern society and the consumption-based economy. Modern capitalism artificially drives human needs to entice them to buy ever more. The result is conspicuous consumption (often on credit). Gathering financial assets in bank accounts no longer brings prestige (Holt, Schor, 2000).

The most important internal contradiction of neoliberal capitalism consists in the fact that it supports capital owners or the supply side of the economy and in consequence, the labor force is not able to consume the economic output. People are expected to consume more and wages have stagnated since the 1970s. Consumption accounts for up to 70 per cent of GDP in the most developed countries. Therefore, a collapse in demand brings about

economic crisis. During the post-modern era capital owners intend to engage people as consumers rather than workers which exacerbates economic imbalances. Therefore, enticing people to consume can be achieved by fostering competition among consumers for social status resorting to fashion, planned obsolescence of products and advertising. The problem of overproduction did not exist during Fordism as the labor force disposed of sufficient income to consume economic output. Since the 1970s, however, real wages stagnated which resulted in the crisis of overproduction. Nominal GDP figures are misleading as they do not account for income inequalities and state expenditure. Economic neoliberalism benefits the richest people who, however, fail to foster demand. Instead, they tend to invest in the real estate or financial assets inflating bubbles. Spending cuts and labor market deregulation also reduce the purchasing power of consumers. Underpaid labor is, in turn, encouraged to consume on credit. That explains why the support for the richest contributes to economic imbalances (Faik, 2015). The problem of insufficient demand could be solved only by creating artificial needs or encourage people to consume ever more competing for social status (e.g. buying luxury goods). As people did not dispose of sufficient income, they were enticed to buy on credit. It was possible as the value of real estate was increasing until 2008. Americans took credits against the growing value of their homes and sub-prime mortgages were offered to ever poorer consumers. When the value of their real estate collapsed after 2008 not only consumers but also the banking sector were badly affected. The current financial and economic downturn was initiated by the sub-prime credit crisis (Wisman, 2013). The Fed tries to improve the economic situation by lowering interest rates with the aim to ease the burden on indebted homeowners. An economist, Fekete (2014), is critical of this policy writing that:

The source of confusion is that a rate-cut is dressed up as if it were helping the homeowners to cope with the financial burden when the exact opposite is the case! In truth, the value of the cash flow of wages has been rendered inferior by the rate cut. It has lost so much of its debt-liquidating power. QE pushes labor deeper in debt and ZIRP (Zero Interest Rate Policy) means *perpetual bondage* for labor. It is modern slavery. 21st century slaves may well 'own' their homes, their cars, their freezers, etc., but their mortgage debt, their auto-loans, their credit card debt are just so many evidences of indenture of slavery with absolutely no hope of emancipation under QE and ZIRP.

Neoliberal economists argue that the current global economic crisis can be resolved by an increase in demand. Therefore, employees should be provided with low-cost loans to enable them to consume more. Capital owners do not intend to raise wages, which would increase the purchasing power of the population. Hence, the aggressive advertising of consumer credit by banks. Some economists claim that the problem of insufficient demand can be remedied by giving money to consumers (Blyth, Lonergan, 2014). The Fed, however, has chosen to support the banking sector or Wall Street instead of the consumers or Main Street (Borofsky, 2013). In case of the euro-area crisis, ECB has shifted debt-holding from the banking sector to the taxpayers. The Greek and Irish bailouts as well as rescue packages for Spain and Portugal were engineered to save the banks which held foreign debt. In the case of Greece, the private banks' exposure to Greek debt was substantially reduced by selling the debt mostly to the euro-area governments, or the taxpayers (mutualization of debt within the Eurozone). Before the crisis private banks owned the vast majority of Greek

government bonds. They have reduced their holdings of Greek debt by about 85 per cent. The proposed policy of austerity to remedy the crisis limits even more the spending power of consumers as wages in the public sector and social spending are cut (Mercille, 2015).

The support of the rich since the 1970s consisted also in decreasing the tax burden on business. The biggest corporations often moved their operations to poor countries and funneled profits to tax havens. Resulting budget deficits were financed by sovereign debt. After 2008 the debt burden was so high that it has become non payable if one factors in liabilities resulting from medical care and pensions. In spite of this, the rich have been assisted by nation states and international organizations once more in the form of bailouts and quantitative easing or QE. It was said that QE would increase the amount of money in the real economy leading to economic recovery. In practice, easy monetary policy benefited mostly financial capital feeding bubbles in several asset classes. The richest one per cent of the population in the U.S. owns over 40 per cent of the nation's wealth. Thus, capital owners do not intend to increase labor force purchasing power through wage increases (supporting the demand side). Instead, they favor a further increase in the debt burden on the population in the form of either loans or public debt. This model of economic growth will, however, fail to cure the economies of developed countries as the crisis of 2008 demonstrated. This policy will probably lead to another crisis. Mercille (2015) writes that the standard neoliberal economic therapy consisting in cuts in the public sector 'do not hold water'. Government debt can increase as a result of spending cuts as aggregate demand decreases. This, in turn, brings down government revenues and increases welfare and unemployment expenditures.

The above examples demonstrate how supposedly impartial economic rules support the interests of the biggest market players to the detriment of small companies and consumers. After the great financial and economic downturn of 2008 the sociological theory of economic field has been validated. Sociologists have criticized neoliberal capitalism for a long time, but until 2008 they were branded as 'leftist leaning', fact-producing ideologues seeking to undermine the only viable economic and social model based on the neoliberal economic theory which posits that '*there is no alternative*'. After the great financial downturn of 2008 sociologists were proven to be right to a large degree and they were joined by numerous renowned economists. Prior to the current crisis it was assumed that economics was the most objective branch of science among the social sciences and the followers of other economic schools were marginalized. After 2008 it has turned out that the neoliberal economic theory was fallacious and ideologized (Weeks, 2013).

Easy monetary policy, spending cuts and consumption on credit have increased social inequalities at the macroeconomic level between capital owners and labor as it amplifies the profits of finance capital and reduces the purchasing power of the labor force in the long term. A similar effect is brought about by buying unnecessary products or their frequent replacement. Increased social inequality in Western countries has become a major political problem as the vast majority of people with stagnant wages increasingly resent the richest one per cent of the population. Social upheavals and unexpected voting patterns may result from this state of affairs.

### 3. CORPORATE AND UNIVERSITY CULTURE – THE CRISIS OF PUBLIC SPHERE

Traditional bureaucracies were referred to as ‘the iron cage’, but they provided stability and they were foreseeable. This business model offered both social inclusion and stability enabling the planning of personal development and raising a family. Employees were supposed to adhere to such rules as loyalty, mutual commitment, the pursuit of long term goals, and trust which fostered community spirit (Sennett, 1998; 2006).

Czubocha (2012) writes that:

The new-economy model based on unstable and fragmentary institutions profits people who are self-oriented, think short-term, are able to discard past experience, and are focused on potential ability. Modern companies do not provide social capital or social trust. Employees have to prove constantly that they are still an asset. Human interactions have been replaced with transactions. Resulting emotional traumas affect private and family life of employees. Employers avoid signing traditional contracts with employees. Long-term contracts are often replaced by fixed-time contracts or cooperation with subcontractors (p. 220).

The totality of social life was to be reorganized according to the above mentioned corporate rules within the neoliberal economic model. Public services such as education, health care, pensions were outsourced to corporations. Social problems were reformulated as private concerns. Civil society was to be guided by economic relations in the framework of corporate culture which “becomes an all-encompassing horizon for producing market identities, values, and practices” (Giroux, 2000). The good life, in this discourse, “is construed in terms of our identities as consumers – we are what we buy”. (Bryman, 1995).

Neoliberalism marked the crisis of the social. Individuals were treated as the only social units. Individualism led to the crisis of the public sphere. The social value of universities and education was redefined in line with economic liberalism. Students have become ‘customers’ and consumers and universities turned into service providers which should produce market value. As a result, humanities and the social sciences with the exception of the neoliberal economic theory were regarded as speculative and having no market value. The vast majority of funds were allocated to scientists producing research supporting the neoliberal economic theory on the basis of quantitative research or to research in the field of the natural sciences. The new paradigm involved value-free science, methodological individualism and social justice was limited to its liberal and utilitarian aspects. Knowledge should be treated as venture capital whereas numerous branches of science have no market value.

The faculty is valued on the basis of their ability to secure funds and grants. In this situation critical thinking has become unpopular and scientists criticizing the neoliberal project were branded as ‘leftist leaning’ and marginalized. To ensure compliance on the part of the faculty the terms of employment were becoming less and less favorable (House, 2014). In this sort of environment “many faculty are demoralized by the new leadership, and they have retreated to their classrooms, unwilling to get involved in the political process because they fear losing their jobs, not getting tenure, or having their salaries frozen.” (Giroux, 2000). The ultimate goal of this policy was to quash scientific dissent to the neoliberal version of economy and society. Government agencies promoted quantitative and empirical research, and scientific positivism as qualitative research was deemed to be

subjective and even subversive. What happened was a powerful and intentional state intervention in the field of science to promote the neoliberal agenda. Western countries steered towards 'audit society' and 'audit culture' (Smith, Hodkinson, 2014). Giroux (2006) writes in this context that:

Within this impoverished sense of politics and public life, the university is increasingly being transformed into a training ground for the corporate workforce, with the loss of any notion of higher education as a crucial public sphere in which critical citizens and democratic agents are formed. In the age of money and profit, academic subjects gain stature almost exclusively through their exchange value on the market.

Corporate funding of universities led to such pathological phenomena as censoring papers unfavorable to business interests or influencing the choice of faculty members by fund providers. This culture slowly corrupted students. In the 1970s the majority of them studied for personal development and now they study mostly for profit as higher education is to reflect management's core values. In this manner corporate universities were created or a broader term the academic-industrial complex should be used. The system of education was used to spread the neoliberal agenda in society and produce a controllable and compliant labor force and uncritical consumers. Higher education produces corporate fodder and consumers instead of critical citizens. However, there is relatively little dissent on the part of students who are highly indebted as student loans deprive them of freedom to question the system (Giroux, 2002). The same applies to scientists who have been disciplined by the policy of funding and employment. Funding policy discourages research critical of neoliberal capitalism and in the U.S. only 27 per cent of faculty enjoy satisfactory terms of employment (Giardina, Newman, 2014).

Finally, it is important to notice that the neoliberal economic theory discredited itself after 2008 and Keynesian massive market intervention. Therefore, one should assume that the neoliberal economic policy has failed and scientific research critical of economic neoliberalism has been vindicated. In spite of this, the interests of capital owners have not been jeopardized and the preachers of neoliberalism have not been sidelined. Neoliberalism has retained its hegemonic status. This conundrum was explained by Plehwe and Walpen (2006) who write that the adherents of economic neoliberalism have created worldwide entrenched networks of scholars, think tanks, NGOs, politicians and business elites who control knowledge production and diffusion. Partisan think tanks and NGOs are often funded by business and they played an important role in spreading the neoliberal agenda outside the capitalist core countries.

#### **4. CONSUMPTION AS A CULTURAL CODE**

Scientists agree that Western societies were profoundly changed by leisure and consumption. Since the consumer boom of the 1950s working-class families lifestyle was transformed. Peoples' aspirations and expectations changed and they started to believe in the existence of a liberating social system in the U.S. (The Consumer Society, 1997) There is, however, no agreement as to the real significance of these changes. The adherents of neoliberal capitalism claim that consumers have won the upper hand and producers have to compete to fulfill the desires of consumers in order to sell their products and services. Some sociologists subscribe to this view writing about a reflexive agent (consumer). Buying in

a supermarket is compared to voting. Consumers express in this manner their freedom and choose whatever products they wish. Such opinions were supplemented by other scholars who claimed that traditional social classes disappeared under neoliberal capitalism as consumption patterns became ever more uniform. Free consumers can supposedly actively construct their identities controlling their lives and as a result, they can become whoever they want (Miles, 2006).

Such views are opposed by numerous sociologists in the framework of the sociology of consumption who point out that economists underestimate the role of culture in shaping consumption patterns. Moreover, the multiplicity of goods does not necessarily improve the quality of peoples' lives. Nowadays, people increasingly experience stress and tension connected with opportunity loss resulting from the freedom of choice. In the course of time, computer technology and the Internet will deprive people of freedom by way of electronic automatism (Rojek, 1995). The leisure industry supposedly offers escape, pleasure and fulfillment, but in reality it provides standardized package tours whereas neoliberal thinking referring to leisure underlines self-expression, self-determination, choice and freedom. The addiction to consumer culture results in the culture of overwork bringing negative consequences in the field of physical and mental health. Peoples' lives are centered on working and spending to keep up with the Joneses. People work longer as time is money (Schor, 1993). Stebbin (2008), in turn, points out that there is a difference between serious and casual leisure. The former term refers to the improvement in skills leading to better career prospects whereas the latter form is desultory and opportunistic.

There are two important texts revealing the hidden dimension of contemporary capitalism. Both texts argue that the condition of postmodernity coincided with consumer capitalism to support it by way of forging unbridled consumption. Baudrillard (1999) writes that a cultural climate was created in which consumers cannot stop consuming as their social status, personal well-being and even finding a partner requires spending money. A new system of signs developed which is connected with consumption. Every object has a sign-value and a use-value. Commodities are valued for their symbolic value rather than their use-value. Labor force has been disciplined for employees are dependent on capital owners consuming on credit which makes them even more vulnerable. Values have been replaced with desires or the biological order. Jameson (1984), in turn, claims that it is a mistake to conceptualize postmodernism as a cultural phenomenon. Instead, it is above all a conception with economic underpinnings. Namely, postmodernism supports consumer capitalism contributing to the creation of consumer society. The cultural logic of postmodernism involves cultural changeability and the lack of artistic canons. This, in turn, influences consumer products which change more and more often in terms of design forcing consumers to replace them very often. Usually it boils down to a new design rather than new qualities of products.

Another set of problems pertains to class divisions on the basis of consumption. Nearly every individual intends to upgrade his or her social status and it is possible by way of consuming more and more expensive goods and services. Bourdieu (1984), was of the opinion that social distinction was based on taste. People belonging to different social classes were supposedly characterized by different tastes with reference to consumption. This view is questioned nowadays but it is underlined that class divisions not only persist but they have actually increased during neoliberal capitalism. People compete for money, prestige and power. The distinction between the rich and poor can be attributed to the price of goods and services they consume. The term conspicuous consumption is applicable with this respect. The rich distance themselves from the poor by buying luxury goods as having money

is associated with prestige in Western countries. Some people choose to rebel, rejecting consumption but the majority of them are malleable, weak fools, merely pawns in the hands of capital owners. On the one hand, consumerism offers personal freedom whereas on the other hand it imposes a hidden order which supports the capitalist system. In other words, structure dominates agency by way of the ideology of consumption (Miles, 2006). The domination is achieved by fostering competition among people. Fashion, advertising and planned obsolescence of products entice people to consume ever more (Corrigan, 1997).

Sociology comes to a conclusion that people compete for resources (economic capital) and seek to obtain the highest possible social status. In this context, buying objects has a double meaning as it refers to both satisfying the needs and acquiring a place in social hierarchy. The symbolic significance of purchased goods is based on demonstrating the social position of the individual. As a result, the advertising industry presents objects as the providers of social status and prestige. The individual demonstrates his or her social status by way of possessions. It is a sort of communication with external world. Through consumption the individual is able to remain within his or her reference group (confirmation) or aspire to belong to another group. Moreover, by buying goods people build their identity. Material goods allow buyers to build self-esteem, pride and satisfaction. Luxury goods increase peoples' self-esteem and arouse neighbors' jealousy and admiration (Szul, 2006). This is the social logic of consumption. Everyone is forced to submit to this system of communication despite the fact that most often people do not realize its existence (Baudrillard, 1999). Consumption encompasses new spheres of human life. Services have acquired the same status as objects. Thus, tourism and services offered by the beauty industry also communicate the social status of the individual. The cult of beauty requires ample financial means as beauty products, spas and plastic surgeries are expensive.

Practicing consumer culture takes place in the temples of consumption and shopping centers play a major role in this respect. Shopping consumes more and more time and it is considered to be a form of leisure activity. The rise of mall culture has been possible as a result of secularization, individualism and consumerism. Shopping malls and other means of consumption play the role of medieval temples and going shopping is like pilgrimage. By choosing products people can create their identities. Increasingly people think of themselves as "wearers of certain logos or frequenters of certain restaurants, resorts, and other temples of consumption or shopping shrines" (Cussack, Digance, 2008). Big shopping centers have ceased to be just shops. Their attractiveness consist in a wide range of facilities. Apart from shops, restaurants, beauty parlors, cinemas even chapels are offered. The biggest shopping centers have become places of tourist destinations and trips (pilgrimages). Such places are often attractive architecturally, create a sense of luxury and can cover an area of several dozen football pitches (Cussack, Digance, 2008).

## **5. COMMERCIALIZATION OF INTERPERSONAL RELATIONS**

From medical point of view the most worrying phenomenon associated with consumer culture is the commercialization of interpersonal relations. As a result of profit maximization, the emotional approach to interpersonal relations have been replaced by a culture with economic underpinnings. People increasingly enter into relationships, including intimate ones, on the basis of economic calculations. People are evaluated on the basis of their marketability. Entering into relationships, people evaluate "the exchange value of the relational investment". Market-style marriages are arranged by judging costs and benefits. If one of



the partners fails to contribute to the consumer aspirations of the other partner s/he runs the risk of being jilted. This cultural code results in social anxiety disorders. In particular 12-15 per cent of the population suffers from social phobia. Commercialized marriage results in depression. The loss of the local social sphere creates needs for drugs. Medical consumption is stimulated in this manner. Numerous therapies flourish in this environment (Schumaker, 2001). This state of affairs is best summarized by Schumaker (2001) when he writes:

When the consumer program is fully internalized, it becomes a social vision that, with ongoing media assistance, insulates members from a conscious awareness of their loneliness. Consumption as a cultural code has become so prominent that few members find themselves capable of the healthy disobedience required to develop a personal code that makes ample room for the "other". Even if this were possible, it is likely that self-motivated consumer defiance would have the reverse effect of increasing the amount of estrangement experienced as a result of this cultural disobedience.

The ideal of romantic love has been employed to enhance consumption. Consumption acts are multiplied and affirmed through romance. Numerous consumption acts have economic underpinnings, but are portrayed as intimate relationships between people. For instance the car ride is presented by the advertising industry as a romantic experience full of excitement. Women should always apply beauty products for there are multiple possibilities of romance in everyday situations. By way of glamour, excitement and intimacy love has attained economic underpinnings and has been equated with consumption. The new utopia consisted in bundling together love for everyone (eroticism) and consumption for all (wealth) with the democratic ethos (equality). Family, intimacy and sexuality have been redefined to suit this utopia. The commodification of romance involved the central role of consumption which would guarantee the intensity of relationships (Illouz, 1997). Dating and the declaration of love has become impossible without gifts or consumption. Commodities acquired a romantic aura. Romantic holidays in exotic places epitomize the connection between eroticism, tourism and consumption. Children, however, reduce a couple's possibility of consumption and leisure time so often they are not welcome in hotels. The American Dream has become associated with the commodification of love. Couples are presented in advertisements as tourists, at an expensive restaurant or in a luxury hotel. The ideal of romantic love has become to be associated with good look and affects ever older people resulting in a cult of beauty. As a result, the beauty industry emerged as an important branch of industry (Turner, 2011). Love is part of secular religion and its commodification suggests eroticism and consumption can fulfill all needs of people (Beck, Beck-Gernsheim, 1995).

In spite of a broad choice of consumer products, and ever higher standard of living, the modern man is not happy, feeling lonely, suffering from anxieties, depression and addictions. People compete with others instead of sharing things and experiences. This, in turn, leads to selfishness, because the desire to outperform others causes antagonisms between people. The attitude "the more a have, the more I am" leads to a desire to exploit other people. Sellers intend to rip off clients and employers tend to exploit employees. The full satisfaction of consumer needs is impossible leading to jealousy and frustration. Rapid economic changes and competition makes the modern man insecure as s/he may lose his or her social position. In uncertain economic times, self-conception based on material goods raises

fears and anxieties as in the event of an economic breakdown peoples' lives may be in ruins (Fromm, 1999). In addition, the race to have more and more luxury goods never ends as the spread of a product reduces its symbolic value (Warde, 2006). This race allows capital owners to gain profit but it fails to give a lasting satisfaction to the consumer who tries to make up for the lack of committed relationships by consumer conquests or allegiance to prestigious brand names (Schumaker, 2001).

## 6. CONCLUSIONS

The ascendancy of neoliberal corporate culture into various facets of peoples' lives was to create a new man within a market society. People were promised to achieve lasting satisfaction on condition of submitting to the profit-based consumer culture. After the great financial and economic downturn of 2008 it turned out that consumers were misled as class divisions were not transcended and consumption on credit ended with a failure. To the contrary, wages have stagnated and social inequalities have increased for the last quarter of century. As a result, people are frustrated due to economic hardships. They also suffer from mental disturbances and seek therapies to remedy their problems not realizing that the lack of proper personal relations and the commercialization of life is to blame for the disorders. Overconsumption results in overwork, as people work more to consume more. In this way, in spite of growing productivity, the amount of leisure time at the disposal of people has been reduced. Consumers are manipulated into believing that it is in their own interest to engage in the consumer culture whereas in fact, the culture fosters the interests of capital owners supporting neoliberal capitalism. Maintaining the current economic model based on overconsumption is harmful from social and environmental point of view. The effects of this model include economic and financial crisis, the depletion of Earth's resources and environmental degradation. Consumer capitalism increases social inequalities jeopardizing social order. The owners of capital are enriching themselves at the expense of consumers who are not able to achieve happiness by way of consumption. The neoliberal economic model based on consumption is not viable and it has led to the current economic and financial downturn. International business intends to transform the modern man into an uncritical follower of unbridled consumption in the interest of capital owners in order to enable profit enhancement from business activities. Postmodern condition results in nomadism. Uprooted and disoriented people pursue unrealistic goals being subjected to hidden management. In such situation, it becomes particularly important to shape the young not as consumers but rather as conscious citizens understanding the sources of the current economic situation and the scale of manipulation they are subjected to.

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## **OPPRESSIVE INDUSTRIES IN THE CONTEXT OF MANAGING AN IMAGE CRISIS**

The article focuses on the problems of oppressive industries in the context of their vulnerability to crisis situations. These critical industries have been subjected to scientific research, which showed that they have more crisis experience, i.e. they more often go through image crises. Thanks to this, managers representing companies operating in this industry are more aware and better prepared for possible image crises. Business entities classified as oppressive industries are normally more susceptible to crisis situations. This type of enterprises need to be aware of this fact and prepared for image-related problems. Classifying industry as oppressive seems to be well-grounded due to such factors as susceptibility of entities operating within the industry to external factors, the complexity of processes performed in the process of production and rendering services, as well as the ultimate consumer's complicity in those processes. The image crisis involves not only negative implications, but also positive effects – it can be considered as an industry's immune system which gains strength every time a crisis is properly managed.

**Keywords:** image crisis, economic crisis, oppressive industries

### **1. IMAGE CRISIS – DEFINITION AND CONSEQUENCES**

The concept of crisis – normally more often than that of image – can be found in different categories such as economy in particular. Due to the so-called cycle, the economy is subject to crises as much as to periods of growth and boom. Economic crisis is characterized by a set of disturbances, as a result of which the economy and the business entities that function within it are exposed to a number of problems reflected in many parameters, such as unemployment, inflation or investments. Terminologically speaking, an economic crisis is far from an image crisis; however, they are similar when it comes to cause and effect, and both of them require proper analysis and prediction (Tworzydło, 2017). Economic crisis can be considered in terms of micro- and macro-scale. The latter is closely connected to business management and the linkage between image crisis and economic crisis is to be seen particularly in this respect. The latter results from the former and conversely, as one of them occurs, then the chances of the other happening are very high. This paper, however,

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focuses primarily on the analysis of an image crisis. It can be defined as a situation characterized by extraordinary sensitivity to external factors (outside of the industry) as well as internal factors (within the industry). It refers to every situation which threatens the stability of a business entity (Łaszyn, 2011). It is a state during which the normal functioning of an industry is disturbed. Instead, actions taken with the aim of preventing and overcoming the already existing as well as potential consequences and difficulties of the crisis are given priority. A crisis situation is also construed as a period of time in which the effective execution of the mission and the achievement of goals established by an organization, a brand or public official are put at risk, with the image crisis as the climax of the situation (Kaczmarek-Śliwińska, 2015). For every element of an industry's structure, the crisis is somewhat of a test. Disorders in the external and internal communication as well as the loss of credibility or trust (which is one of an industry's most significant assets) are among the gravest consequences of the crisis. Apart from these, the crisis also affects a company's economic performance results, i.e. a fall in sales, loss of market, loss of customers, contractors, suppliers and subcontractors, employee resignation (increased staff turnover), and inventory increase. Image crisis does not, however, carry only negative consequences. It can also involve positive outcomes, which are part and parcel of the phenomenon. For a business, a crisis is a test which verifies the procedures and the resilience of its structures. The crisis also involves an assessment of the developments and routines within a business, such as all the procedures and the extent to which the staff is prepared to manage the problems. Therefore, it can be perceived as an assessment on the one hand and, on the other hand, a process of collecting information and additional experience, this time on the living organism (Tworzydło, 2017). While discussing the problem of image crisis situations, the types of crises that can affect a business cannot be omitted. Topic-related literature offers vast classifications; however, one of them is worth indicating in this paper. In Coombs' *Crisis Matrix*, four types of crisis are analysed in two dimensions: internal and external. The author also points to the fact that one is dealing here with unintentional and deliberate actions (Table 1). The emphasis must be placed on the internal dimension, which is not only the first and the key one in the context of providing information concerning the existing risks, but it is also where the crisis situation occurs. These are generated mostly by employees or while the production and service processes are carried out. In this instance, both deliberate and unintentional action is relevant. The former includes intentional action taken by the employees. These are influenced by emotions or dissatisfaction, or simply a desire to take revenge on the employer. The latter are mostly caused by mistakes in procedures. Although the tool proposed by Coombs offers a general description of types of crisis situations, the Crisis Matrix provides help in preparing an effective strategy of crisis communication.

Table 1. Crisis Matrix (Coombs, 1995)

	Unintentional	Intentional
External	Faux Pas	Terrorism
Internal	Accidents	Transgressions

It is indicated by Coombs that identifying the type of crisis is one of the key ingredients of professional management in a problematic image situation, in which the following actions include specific steps directed at the media or other groups with a vested interest. In

the processes discussed in this paper, two other concepts are also particularly important. The first one, anti-crisis management, can be defined as actions taken before the crisis itself occurs, whereas the second one, crisis management, is understood as the steps taken when the crisis has already taken place in a company, once it has escalated and has manifested itself in consequent symptoms (Tworzydło, 2017). Both concepts are equally important in the whole process and are closely linked to each other, since proper preparation for potential crisis situations affects the management of the crisis once it has taken place. Preparation, however, plays a vital role because it secures the industry. It can be construed as its immune system which can either counter any potential attacks directed at the industry's image, or manage the problems once they have occurred, with as little strain and complication as might be. Preparation is thus closely connected to the notion of security which, admittedly, cannot be a guarantee for an industry, but it supports it and limits any potential consequences.

## **2. FACTORS AFFECTING THE OCCURRENCE OF A CRISIS SITUATION**

Preparation for an image crisis situation involves determining the factors that, to a greater or lesser extent, affect the occurrence of the crisis. In particular, defining the industry category is one of the factors, as it has a strong influence on both potential and real risks. The first degree of vulnerability indicates that the company is least exposed to a crisis of a reputational nature. Image problems may worsen the image of the company, however, only in the event of incorrect reactions that would be the company's fault, but here it should also be noted that this will rather have little impact. Unless there are serious critical errors made by the company during the crisis. The second degree of vulnerability indicates that the company already have been in crisis situations and had to deal with them. However, these events still had little impact on the overall perception of the company. It is only at the third degree that the crisis has a major impact on the perception and image of the company. Within the diagnostic model, the fourth degree of crisis susceptibility indicates that in businesses that operate as the so-called oppressive industries, the occurrence and aggravation of crisis situations is more likely than in other industries. What follows, such businesses are also more exposed to the consequences of the ensuing problems. What is more, the fourth degree of crisis susceptibility shows that a business entity that is perceived as belonging to these categories is incapable of a legitimate response once a crisis situation has occurred or experiences too much strain due to the fact that it operates within an oppressive industry (Table 2).

As far as the analysis of potential changes in an industry in the context of crisis susceptibility is concerned, it must be said that an oppressive industry can be described in terms of the fourth degree, but business entities that fall into the third degree of crisis susceptibility can also operate within an oppressive industry. A similar situation takes place in other cases. The fact that a company falls into the category of an oppressive industry does not necessarily mean that it always qualifies as the fourth degree of crisis susceptibility; however, the fact that such a company is at risk of an image crisis is beyond any doubt. Classifying an industry as oppressive does not imply an immediate change of the company's category from – for instance – the second to the third degree of crisis susceptibility. This is because such a situation is strongly influenced by the actions taken by a business in order to prepare for and react to the crisis. All in all, the oppressive character of an industry is an important element affecting the calculations made within the diagnostics model, which helps to assess

Table 2. An analysis of potential changes in an organization in the context of degrees of crisis susceptibility (Tworzydło, Szuba, 2018)

	I°	II°	III°	IV°
the ability to absorb a consequent crisis	small	small	big	big
the influence of a subsequent crisis on employees	small	small	big	big
the influence of the crisis on the industry's economic conditions	none	none	big	big
the influence of the crisis on the perception of the business	none	small	big	big
the influence of the crisis on the internal business environment	none	small	small	big
restricting the company's strategic possibilities	none	none	small	big
restricting the company's operational possibilities	small	small	big	big
the influence on controlling subsequent crisis situations	big	big	small	none
the possibility of alleviating the consequences of the crisis	big	big	small	small
the possibility of obtaining positive results of the crisis	big	big	small	none
the cost of anti-crisis actions	small	small	big	big
the media's trust during the crisis	big	small	small	none

correctly to what extent a business entity is prepared for a crisis situation. An oppressive industry is one in which the entities constituting it are at a particular risk of image crisis situations and, at the same time, experience an increased susceptibility to the crises and their occurrence frequency (Tworzydło, Szuba, 2018). Below are selected conditions that classify a business as an oppressive industry:

- the industry consists of entities that operate within the areas in which an individual consumer is the main receiver of products or services; therefore, business entities belonging to B2B industries face a smaller risk of oppressiveness than B2C,
- goods and services offered by businesses within the industry have a short durability period or have a significant influence on the average person's life,
- a range of production and service processes take place in complicity with target consumers, who participate in the whole process to a significant extent and have an influence on the final product or service that they purchase,
- the production or the process of rendering services bears the risk of an accident that can occur within the process itself or once the product has already been serviced,
- the production of services or goods has a complicated character and consists of a number of processes, and is contingent on independent factors which are beyond the industry's control, such as weather conditions,
- various business entities within the industry compete with each other, and the character of such competition is not always fair or might involve methods which are considered to be unethical.

Obviously, for an industry – and the businesses operating within it – the conditions listed above do not have to be met simultaneously to classify it as oppressive within the category of image crisis susceptibility. However, they serve as a kind of a determinant which helps



to assess correctly whether a given industry can be classified as susceptible to the crisis. An oppressive industry is also one in which various business entities experience external (e.g. from the media) or internal pressure (e.g. from trade unions), which, in turn, may translate to potentially turbulent relations with the representatives of those environments. Taking Polish Classification of Activities into consideration, a number of businesses that meet the criteria of an oppressive industry can be distinguished. These include industries such as (Tworzydło, Szuba, 2018):

- food,
- extraction,
- construction,
- transport,
- automotive,
- development,
- fuel,
- energy,
- chemical,
- pharmaceutical,
- railway,
- telecommunications,
- financial,
- insurance,
- FMCG,
- road infrastructure
- and others.

The industries indicated above do not exhaust the list of those which satisfy the conditions ascribed to oppressive industries; nevertheless, they the main ones and the most exposed to image crisis situations.

### **3. THE TEXTILE INDUSTRY AS AN EXAMPLE OF OPPRESSIVE INDUSTRY**

The textile industry is one of the industries that can be characterized as oppressive. Despite the fact that it is not on the list of oppressive industries, the textile industry can be included in it due to a number of factors that distinguish it based on further analysis. The aim of the assumption is, therefore, to show that there are also a number of other industries outside the indicated list, which may be burdened with the risk related to the oppressiveness of the industry.

The problem of a potential crisis which may affect the processes of production and the overall functioning of a business entity, appears when there is a connection between a customer's expectations and the process of production. In the situation discussed here, the buyers have a significant influence on the eventual shape of the product they purchase and at the same time have specific requirements concerning its quality as well as other expectations, such as those connected with the product's seasonality. The textile industry is highly dependent on the customer's preferences and expectations, for whom criteria such as variety, change, and adjustments to trends acquire increased significance. Also, availability is yet another parameter that is particularly important to the customer, and it's closely connected to the location of the shop. Having said that, responding to changing trends, adjusting

to them, and – most of all – gathering information with the aim of securing the industry in case a crisis occurs – is one of the primary purposes of business entities operating within the textile industry. In this industry, the correlation between economic and image crisis acquires a special meaning, since both of them have a strong influence on one another. The way in which economic crisis affects image crisis is particularly visible. Knowing that economic crisis can be caused and aggravated by the changes that happen to the entity's image, the correlation between the factors that have an impact on the image and the ones that are strongly connected to economic parameters can be observed quite easily. The textile branch is characterized by an increased sensitivity to the factors shaping the demand. These factors exist outside of the price, which is the main determinant according to the theory of economy and more specifically, the law of demand. Instead, the factors in question are linked to designing and creating trends and fashion. One of the elements included in the prevention of crises resulting from the lack of sufficient information for customers and disrupted information flow, is providing a transparent supply chain in the context of its managements and functioning. It is claimed sometimes that this constitutes one of the key challenges that contemporary logistics face. For that reason, effective management of a contemporary supply chain requires, for instance, automation of processes and access to real-time data (Bujak, 2015).

All of these also translated into the image of particular business entities operating within the textile industry. Since a detailed analysis as well as determining the parameters that define the textile industry imply that it can be classified as a so-called oppressive industry, it must be noticed that the textile industry is characterized by an increased susceptibility to image crisis situations, a tendency to absorb them easily and a vulnerability to subsequent crises. Image crisis affecting businesses which operate within oppressive industries is more intense and more critical as far as selected or - even all aspects of the company's management and organizational structure. Hence, the issue of securing the entities in question becomes essential. The classification of the textile industry as an oppressive industry results from the fact that such industries are mostly connected to the areas in which there is a number or individual customer, each of whom can perceive the services provided by a given business entity differently, which is the case in the textile industry. An analysis of oppressive industries looks for interrelations in which the probability of mistakes, failures or problems related to the service of the products produced is increased due to the scale of production. Other conditions that classify the textile industry as an oppressive industry include intense changes in production, ranging from technological processes to generating the final product which is adjusted to customers' expectations, as well as changes in customers' requirements, changes in those requirements, the need to respond to changing trends and fashion, the development of information technology affecting the process of communication with customers, and advancing from traditional sale to on-line sale. Oppressive industries are particularly characterized by increased vulnerability to crisis situations. Therefore, business entities involved in them face the necessity of taking actions not only before or during but also once the crisis has died out. Once the problems have disappeared and their implications have been largely erased, a complete post-crisis record must be prepared. It is essential not only due to the analysis of the situation that is now gone but, most of all, for the sake of obtaining valuable information for the future. It is also useful in litigation and prolonged legal proceedings such as legal disputes connected with the media having given false information affecting the scale of the crisis. What is more, formu-

lating a protocol has an influence on changing the procedures, making corrections and developing proper trainings for the employees. A set of analyses produced during and after the crisis situation is dedicated not only to the management of the business but also to the crisis management center and to those individuals who might be, either directly or indirectly, interested in benefiting from the knowledge and experience gathered during the image crisis (Rydzak, 2006). As far as managing a future crisis is concerned, the success rate is dependent on a number of conditions. These include the extent to which a business is susceptible to crisis, the situations it had experienced before, whether it is classified as an oppressive industry, whether it has a crisis management centre, the level of the management's awareness of image risks, the attitudes towards the crisis in the business, and once it has been erased, the way in which its causes and its effects are analysed.

#### 4. CONCLUSION

Business entities classified as oppressive industries are normally much more susceptible to crisis situations. The businesses in question need to be aware of this fact and prepared for image-related problems. Companies operating within oppressive industries may themselves cause crises through their actions; therefore, proper preparation should be inscribed in their standards of management (Tworzydło, Szuba, 2018). In this way – since the entities constituting the textile industry may be classified as those constituting an oppressive industry – not only preparation, but also constant monitoring, analysis, and fast action once a crisis situation has occurred are necessary. These actions can be taken with the aid of a number of research strategies, as well as methods which allow real-time monitoring of the situation. It must be pointed out that there are also methods which enable determining specific factors affecting a company's image and its potential deterioration. One of such methods is, for instance, is a *matrix of image purposes*, which makes it possible to identify the areas and courses of action supporting an organization (Tworzydło, Życzyński, 2008). Classifying the textile industry as one that can be described as oppressive seems to be well-grounded due to such factors as: susceptibility of entities operating within the industry to external factors, the complexity of processes performed in the process of production and rendering services, as well as the ultimate consumer's complicity in those processes. Undoubtedly, the crisis poses a threat to a company and involves both direct and indirect influence on its structures as well as on the relations in the company and outside of the company. However, it can also be perceived as a chance for the business. In this respect, the awareness and knowledge concerning the fact that a business operates within an oppressive industry can affect the whole process, strengthen it and contribute to overcoming the difficulties that the business experiences. The level of awareness and the way in which knowledge is used translate not only into the economic situation, but also into parameters which are more difficult to measure, such as image, perception, and trust. The awareness of the fact that a company operates within an oppressive industry is important; however, it is not enough as far as successful management of the crisis is concerned. In order to achieve this goal, proper procedures, descriptions of processes, appointing a crisis management centre and preparing the operational documentation that can be used in the simulation of a crisis situation are also necessary. To sum up, it is worth indicating that image crisis involves not only negative implications, but also positive effects. This, however, refers not only to businesses classified as oppressive industries, but rather to all businesses. Preparation and skilful management of the crisis translates into the net effect, i.e. reinforcement of the business

structures and all of the parameters that affect its rating. Strangely enough, the conclusion might thus be that image crisis is a positive phenomenon, since it can be considered an industry's immune system which gains strength every time a crisis is properly managed.

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