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## FROM THE EDITORIAL COMMITTEE

We are giving you the next 28th 4 (2021) 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) ERIH PLUS, DOAJ and EBSCO**.

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*



Agata GIERCZAK<sup>1</sup>

## RELATIONSHIPS BETWEEN EXPLICIT AND IMPLICIT SELF-ESTEEM AND THE NEED FOR SOCIAL APPROVAL AND NARCISSISM IN PERSONS HOLDING MANAGERIAL POSITIONS

Self-esteem determines the well-being of an individual; it is related to health and physical conditions, and consequently, it influences a person's behavior, decision-making and social functioning. It has been the subject of research for many years, and yet no reliable measurement tools have been developed, especially in relation to implicit self-esteem. It is assumed that explicit and implicit self-esteem are different manifestations of attitudes towards oneself and do not have to be compatible with each other (they are poorly correlated; as a rule, the correlation does not exceed 0.25). For people in managerial positions in an organization, self-esteem can be a decisive factor in achievement. In this study, it was, therefore, assumed that managers have a positive relationship between explicit self-esteem and variables implicitly related to self-esteem, that is, the level of the need for social approval and the level of narcissism. The research was carried out in two groups: managers (people at the highest, middle or lower levels in the organizational structure, managing a team of people) and employees who do not play managerial roles (people who perform a scope of duties that do not include responsibility for the results of other people's work). The results of this study showed that for managers, the relationship between the scale of the need for social approval and narcissism was particularly important for the leadership and self-sufficiency scales; these are the scales that indicate the most desirable aspects of narcissism for managers. This correlation was not found in the control group. The tools for measuring implicit self-esteem were also used to compare the results for both of its aspects.

**Keywords:** management and leadership, explicit and implicit self-esteem, social approval, narcissism.

### 1. INTRODUCTION

Self-esteem, its height, and especially its stability, are significantly related to the manager's well-being, their behavior, functioning in society and in an organization, responsibility and propensity to risk, decision-making, and therefore, in a broader perspective, with the quality of their management. Individuals with a positive attitude towards their own self are assessed by the environment as having the characteristics of a group leader. They are willing to express their views, often take part in discussions, are

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convinced of their own interpersonal skills, the possibility of influencing other people, providing them with support, and that they are socially attractive and liked by others (which does not have to be confirmed in reality). They are generally characterized by a greater sense of happiness, life satisfaction and an optimistic outlook for the future. On the other hand, people with low self-esteem have a feeling of less approval from the environment, less support, which is associated with the fear of rejection. They are more depressive and experience more psychosomatic symptoms. Their attitude towards themselves is associated with experiencing shame and embarrassment. The level of self-esteem is related to setting higher goals and beliefs about the possibility of meeting them (Baumeister et al., 2003; Dzwonkowska, Lachowicz-Tabaczek, and Łaguna, 2008).

Research showed that the implicit self-esteem could reduce the threat to the self in situations where overall self-esteem was at risk. It was then discovered that it acted as a buffer (Fujii et al., 2014; Greenwald and Farnham, 2000; Inagaki (Fujii), Oura, Matsuo, Shima, Fukui, 2017). High implicit self-esteem can reduce the occurrence of negative emotions and moods. The implicit self-esteem most often plays the role of a moderator of behaviors and expectations, "cooperating" in this respect with the explicit self-esteem.

Methods of measuring self-esteem, especially implicit ones, are a big problem for researchers as they mainly focus on its explicit aspects and are usually *self-report* tools, which, especially in the group of managers, may trigger self-presentation mechanisms that distort the indications of these tools. Self-esteem researchers argue intensely whether the explicit and implicit self-esteem measures investigate the same theoretical construct (Olson, Fazio, Hermann, 2007) or whether they apply to two different constructs (Koole, Dijsterhuis, and van Knippenberg, 2001; Wilson, Lindsey, Schooler, 2000), or they agree that the measurement of the implicit self-esteem is essential in diagnosing it. Therefore, in recent years, an intense search for new and effective methods of measurement has been carried out and a lot of significant results have been accumulated.

It is assumed that low implicit self-esteem is at the root of volatile self-esteem. People with high explicit and low implicit self-esteem show a higher level of narcissism, favor their own group more, and use more defense mechanisms to maintain a positive self-image (Bosson, Brown, Zeigler-Hill, Swann, 2002). Narcissistic managers often associate self-image and self-esteem with the admiration and respect of others, which is why they can be expected to have a high level of need for social approval. They are sensitive to criticism or failure; this sensitivity can lead to withdrawal from social interaction.

In this paper it was assumed that managers had a positive relationship between the explicit self-esteem and variables implicitly associated with self-esteem, i.e. with the level of social approval and the level of narcissism; the higher the explicit (global) self-esteem, the higher the level of the need for social approval and the higher the explicit (global) self-esteem, the higher the level of narcissism.

## 2. LITERATURE REVIEW

The relationships between narcissism and self-esteem have been the subject of ongoing research, and yet they are still considered unclear. Most of these studies look at narcissistic greatness, neglecting the vulnerable form of narcissism that could be accessed using a measure of implicit self-esteem. Research shows that the relationship between narcissistic traits and the explicit self-esteem is not unequivocal (Di Pierro, Mattavelli, Gallucci, 2016). Patterns of association between narcissistic traits and the explicit self-esteem may vary,

depending on the phenotypic manifestations of narcissism. In the DSM-5 classification of personality disorders (American Psychiatric Association, 2013), variable and vulnerable self-esteem is one of the typical features of narcissistic pathology. Kernis (2003) suggests that narcissism is associated with fragile self-esteem, and that this fragility may be due to instability in self-esteem, conditional self-esteem, or a discrepancy between the explicit and implicit self-esteem.

Inconsistent findings in research on narcissism and its relationship with the explicit and implicit self-esteem may have been a consequence of the lack of general consensus regarding the definition of narcissism (Bosson and Prewitt-Freilino, 2007). An attempt was made to describe narcissism as two separate dimensions of personality – adaptive and pathological narcissism (Miller and Campbell, 2008; Pincus and Lukowitsky, 2010). Basically, narcissism refers to an ability to maintain a relatively positive self-image through a variety of affect self-regulation and environmental regulation processes (Pincus et al., 2009). On the one hand, adaptive narcissism reflects an emotion-resistant, extroverted form of narcissism – people with adaptive narcissistic traits are able to maintain consistency by extracting affirmative responses from the environment and are able to access inner resources in the face of disappointment – on the other hand, pathological narcissism can be described through voluminous and sensitive behaviors, including impaired regulatory abilities and a strong need for self-esteem and admiration that stimulate a person to seek experience and self-improvement (Pincus and Lukowitsky, 2010; Roche et al., 2003; Pincus et al., 2014). Narcissistic omnipotence is expressed in fantasizing of unlimited power, superiority and perfection, while disregarding the needs and feelings of others. In contrast to this attitude, narcissistic vulnerability involves consciously experiencing helplessness, emptiness, jealousy, shame, anger, and avoidance of interpersonal relationships due to fear of rejection and criticism (Rovik, 2001; Aktar, 2003; Dickinson, Pincus, 2003; Ronningstam, 2005; Pincus et al., 2014). According to Roche (2013), an individual may have a constellation of normal and pathological regulatory mechanisms that are used under various conditions to deal with disappointments and threats to their own self. Numerous studies show that both types of narcissism moderately correlate (Wright et al., 2010; Fossati et al., 2014; Jaksic et al., 2014; Krusemark et al., 2015). Grandiose and vulnerable narcissisms showed different patterns of association with self-esteem in non-clinical trials (Pincus et al., 2009; Maxwell et al., 2011; Roche et al., 2013). All studies show unequivocally that vulnerable narcissism can predict a low level of explicit self-esteem. Narcissistic traits may be associated with the explicit self-esteem in various ways and that people with pathological (grandiose) narcissism traits do not always declare high self-esteem. The researchers Di Pierro, Mattavelli, and Gallucci (2016) asked why some people with high levels of narcissistic greatness declared overrated self-esteem, while others do not. In response, it was hypothesized that external conditions, such as contact with others, might influence self-presentation in people with the features of size narcissism. Therefore, this is an assumption that fulfilling the role of a manager may be a circumstance that exacerbates the features of pathological narcissism. Brunell and Fisher (2014) investigated that confrontation with other people during the assessment procedure did not take into account the bias in self-presentation reactions in people with high narcissism. However, according to one group of researchers (Jordan et al., 2003; Zeigler-Hill, 2006; Campbell et al., 2007), they may have positive or negative implicit self-perceptions, according to others (Vater et al., 2013; Marissen et al., 2016), narcissistic people do not differ in the level of implicit self-esteem compared to control groups of non-narcissistic people.

In recent years, researchers have become increasingly interested in narcissistic leadership (Owens, Walker, Waldman, 2015). The question arises whether narcissistic personality traits predispose people to perform managerial roles in organizations, or whether one can become a narcissist while performing these functions. Chinese researchers noted (Xiao, Liu, Zhou, Chen, 2018) that most of the research focused on the narcissistic traits of the leaders under the survey, but did not take into account the influence of time on the narcissistic manager's relationship with employees (Roberts, Arthur, Woodman, Akehurst, 2016). It was shown that narcissistic leaders did not care about the demands of their subordinates and often cheated, diminished the role of employees, and even harassed and hurt them (Rosenthal and Pittinsky, 2006), thus destroying social relationships. Narcissistic leaders also take advantage of others, caring only for their own needs, sometimes going so far as to engage in negative behavior and hurting others.

Empirical research into the relationship between narcissism and self-esteem was largely dominated by the "mask model" that postulates that narcissists' positive views mask a deep-seated sense of inferiority and inadequacy (Kernberg, 1975; Kohut, Wolf, 1986; Emmons, 1987). According to this model people with a high level of narcissistic traits should reveal a very high level of explicit self-esteem combined with a relatively low level of implicit self-esteem. Despite the advantage of the mask model, an empirical study of the relationship between narcissism, explicit self-esteem, and implicit self-esteem led to conflicting conclusions. Much early research focused on the idea of a positive relationship between explicit self-esteem and narcissism (Jordan et al., 2003; Brown and Zeigler-Hill, 2004; Zeigler-Hill, 2006; Cain et al., 2008; Rosenthal and Hooley, 2010; Brummelman et al., 2016), as well as self-improvement tendencies (Bosson et al., 2003), which are hallmarks of narcissism. In some studies, it was possible to confirm the mask model, i.e. the combination of high explicit and low implicit self-esteem predicted narcissistic features (Jordan et al., 2003; Zeigler-Hill, 2006; Boldero, 2007 Unpublished, after: Di Pierro, Mattavelli, Gallucci, 2016). However, a meta-analysis of this type of research (Bosson et al., 2008) did not provide empirical support for such results. More recent studies failed to replicate previous results, showing a negligible interaction between the implicit and explicit self-esteem in predicting narcissistic traits (Campbell et al., 2007; Gregg and Sedikides, 2010), or even an opposite association pattern (Vater et al., 2013).

Much research on the relationship of narcissism with self-esteem is carried out using the Narcissistic Personality Inventory (NPI, Raskin, Hall, 1979), which measures the main adaptive characteristics of grandiose narcissism (Watson et al., 2005–2006; Cain et al., 2008; Rosenthal et al. Hooley, 2010). The measurement takes place in four dimensions, two of which may show a beneficial relationship with the managerial function – the Leadership Scale (referring to the belief in one's own high leadership abilities and one's own influence on others) and the Self-Sufficiency Scale (belief in one's own independence, individualism, high competences and success), while the other two certainly do not – the Vanity Scale (approval of one's own corporeality and aestheticism) and the Scale of Demanding Admiration (reflects the need for meaning, admiration, being noticed, complimented, as well as famous and – what is marked in the name of the scale – contains an element of claiming "demand"). This tool was also used in the research presented in this paper. Using them, researchers showed that the NPI scale partially overlapped with the measures of self-esteem (Brown and Zeigler-Hill, 2004; Rosenthal and Hooley, 2010), which may explain the positive links between narcissism and explicit self-esteem in the research.

### 3. MATERIALS AND METHODS

The field study was carried out individually. Standardized questionnaires were used to measure the variables:

- M. Rosenberg's SES questionnaire, the global self-esteem scale in the Polish adaptation by Łaguna, Lachowicz-Tabaczek and Dzwonkowska (2007), the scale consisting of 10 items measures the general level of self-esteem;
- Social approval questionnaire (KAS, Drwal, Wilczyńska 1980), Social Desire Scale, developed according to various scales of lying and social acceptance;
- The NPI Narcissistic Personality Inventory (Raskin and Hall, 1979) in the Polish adaptation by Brzezińska and Drat-Ruszczak (2000) – the measurement takes place in 4 dimensions: Leadership Scale (referring to the belief in one's own high leadership abilities and one's own influence on others), The Self-Sufficiency Scale (belief in one's own independence, individualism, high competences and success), the Vanity Scale (approval of one's own body and aestheticism) and the Demanding Admiration Scale (reflects the need for meaning, admiration, being noticed, complimented, and also famous and – which was noted in the name of the scale – it contains an element of claiming “demand”).

The tools for measuring implicit self-esteem were also used:

- Measurement of the size of the signature (initials) (Zweigenhaft, Marlowe 1973),
- Gebauer name preference test (Gebauer et al., 2008), in which the degree of first and last name preference is an indicator of implicit self-esteem,
- IAT – Implicit Association Test (Greenwald, McGhee, Schwartz, 1998), the best known method of testing implicit attitudes (including implicit self-esteem) using the affective association method in the process of categorizing objects on a computer screen. The use of the IAT requires a selection of stimuli. The incentives for the test were selected in a pilot study in a group of 500 people. They were asked to choose the words which, in their opinion, could be best and most accurately assigned to the categories: 1. Me and non-me, 2. Pleasant words, 3. Unpleasant words. Earlier, in a group of 40 people, suggestions of stimuli were submitted which, according to the respondents, best represent the three above categories. Six stimuli were selected in each of them: 1. describing I and non-I: character, relationships, body, value, feelings and voice; 2. pleasant words: happiness, love, joy, peace, satisfaction and success; 3. unpleasant words: pain, disease, death, fear, war and sadness.

The purpose of using so many methods of investigating the implicit self-esteem was to estimate it as correctly as possible.

The selection of people for the study was carried out using the snowball method, consisting in recruiting participants by other participants. In order to minimize the researcher's control over the sample, the study was carried out in several places, extending the selection of units beyond economic entities also to administrative units and educational organizations. 83 people (N = 83) participated in the study, including 41 managers and 42 non-managerial employees (M = 43.9; SD = 9.8); 40 women and 43 men. In the group of managers, the mean age was M = 47.1 (SD = 8.7), and in the group of regular employees, M = 41.0 (SD = 9.8). A manager is defined as a person at the highest, medium or lower levels in the organizational structure who manages a team of people. Employees who did not perform the function of a manager were considered to be persons who worked in the

performance of a scope of duties that did not include responsibility for the results of other people's work.

Explained variables: narcissism, the need for social approval and the group of respondents (managers vs. non-managers). Explanatory variables: explicit global self-esteem, implicit self-esteem.

Reliability determined by the Cronbach's  $\alpha$  index are as follows:

the reliability of M. Rosenberg's SES questionnaire for measuring the explicit global self-esteem was  $\alpha = 0.78$ , which is a fully acceptable value; the reliability of the NPI questionnaire for measuring the level of narcissism was  $\alpha = 0.96$ , which is a very high value. All subscales of the narcissism scale achieved a high index: the reliability of the sub-scale. The admiration of the narcissism scale in the study was  $\alpha = 0.90$ , the reliability of the Leader subscale of the narcissism scale in the study was  $\alpha = 0.93$ , the reliability of the subscale Void of the narcissism scale was  $\alpha = 0.83$  in the study, the reliability of the Self-Sufficient subscale of the narcissism scale in the study was  $\alpha = 0.81$ .

#### 4. RESULTS

In order to verify the assumptions adopted, an r-Pearson correlation analysis was performed. The explicit self-esteem was measured with the Rosenberg SES Scale and for the implicit self-esteem the IAT effect, signature size (initials) and name and surname preference (Gebauer Test) were applied. The relationship of these indicators with the level of the need for social approval was shown. The survey was carried out on the entire sample of respondents (managers and people not performing managerial functions). The results are presented in Table 1.

Table 1. Correlations between variables related to self-esteem and the level of the need for social approval

	<b>SES Rosenberg</b>	<b>IAT effect</b>	<b>Signature</b>	<b>Implicit (name and surname)</b>
SES Rosenberg				
IAT effect	-.048			
Signature	.211	.120		
Implicit (name and surname)	<b>.526**</b>	.066	.133	
The need for social approval	.231	-.147	.191	.090

\* Correlation significant at the level of 0.05 (two-sided)

\*\* Correlation significant at the level of 0.01 (two-sided)

Source: own study.

Among all self-esteem indicators, a strong statistically relevant positive relationship was observed between the measure of implicit self-esteem, which is the first and last name preference, and explicit self-esteem measured with Rosenberg's SES test  $r = 0.53$ ;  $p < 0.01$ .

The remaining relationships turned out to be statistically insignificant.

Then, correlations between the narcissism scales and the scale of the need for social approval were shown also in the entire sample of respondents (N = 83) (Table 2).

Table 2. Correlations of narcissism scales with the level of the need for social approval in the entire group of respondents

	<b>Narcissism total</b>	<b>Admiration</b>	<b>Vain</b>	<b>Leader</b>	<b>Self-sufficient</b>
The need for social approval	.179	.122	.037	.209	.229

\* Correlation significant at the level of 0.05 (two-sided)

Source: own study.

It turns out that the need for social approval does not correlate with any of the narcissism scales. However, the result of the analysis changes in the next step, when we conduct the survey only in the group of managers (Table 3).

Tabela 3. Correlations of the level of the need for social approval with the scales of narcissism and overt self-esteem in the group of managers

	<b>Narcissism total</b>	<b>Admiration</b>	<b>Vain</b>	<b>Leader</b>	<b>Self-sufficient</b>	<b>SES Rosenberg</b>
The need for social approval	.298#	.221	.061	.363*	.426**	.245#

\* Correlation significant at the level of 0.05 (two-sided)

\*\* Correlation significant at the level of 0.01 (two-sided)

# Correlation significant at the level of 0.05 (one-sided)

Source: own study.

Among managers there is a significant positive relationship between the level of the need for social approval and explicit self-esteem and the level of narcissism, although significance is obtained in the one-sided test. Thus, the hypothesis assuming the existence of a correlation of the level of social approval and narcissism with the explicit self-esteem has been positively verified.

The relationship between the need for social approval and narcissism is particularly important for the Leader Scale ( $r = 0.36$ ;  $p \leq 0.05$ ) and the Self-Sufficient Scale ( $r = 0.42$ ;  $p \leq 0.01$ ), i.e. for those scales that indicate the most desirable narcissism aspects for managers. This may suggest that managers also make some form of self-presentation when filling in questionnaires. Such correlations with the need for social approval were not found in the group of subordinate employees.

Another hypothesis, which says that managers have a higher level of need for social approval than employees who do not perform managerial functions, was put forward. A particularly high level of this need occurs in managers with high explicit and low implicit self-esteem. For this purpose, an analysis of variance was performed for the variable "need for social approval" in the 2 x 2 system (group of respondents x gender). The analysis did not show any significant effects, so on this basis it cannot be said that the level of social approval of managers is higher than in the control group. In order to verify this hypothesis

in terms of the specificity of the group of managers with high vulnerable self-esteem, three simultaneous regression analyzes were carried out in the group of managers for the variable explained the level of the need for social approval, taking into account each of the measures of implicit self-esteem used as predictors. First, both explicit and implicit self-esteem indicators were standardized, then product products representing the interaction between the explicit and implicit self-esteem indicators were created (Aiken and West, 1991; Jordan et al., 2003). In the regression analyzes, explicit and implicit self-esteem and their product were introduced as predictors. In regression analysis, where the criterion was the level of the need for social approval, and the predictors were explicit self-esteem, implicit self-esteem measured with the IAT test and the product (Cartesian product) of the latter two, neither the model significance nor the interaction effect of self-esteems in explaining the criterion were obtained. A similar situation occurred when liking one's name and surname was introduced as implicit self-esteem, and also when the implicit self-esteem was represented by the size of one's own signature. Thus, this hypothesis has not been positively verified.

The assumption that managers have a higher level of narcissism than people who do not perform managerial functions, especially on the Leadership and Self-sufficiency scales, was made in the research. In order to verify this hypothesis, an analysis of variance was performed for the dependent variable level of narcissism in a mixed system (4) x 2 x 2 with an intra-subject factor, narcissism scale, and inter-subject factors, group and gender. The analysis showed the following effects:

1. main effect of the narcissism scale  $F(3.77) = 56.49$ ;  $p \leq 0.001$ ;  $\eta^2 = 0.69$
2. group F main effect (1.79) = 3.55;  $p \leq 0.05$  (one-tailed test);  $\eta^2 = 0.04$
3. interaction effect of the narcissism scale and group  $F(3.77) = 7.23$ ;  $p \leq 0.001$ ;  $\eta^2 = 0.22$

The interaction effect (along with both main effects) is shown in figure 1.

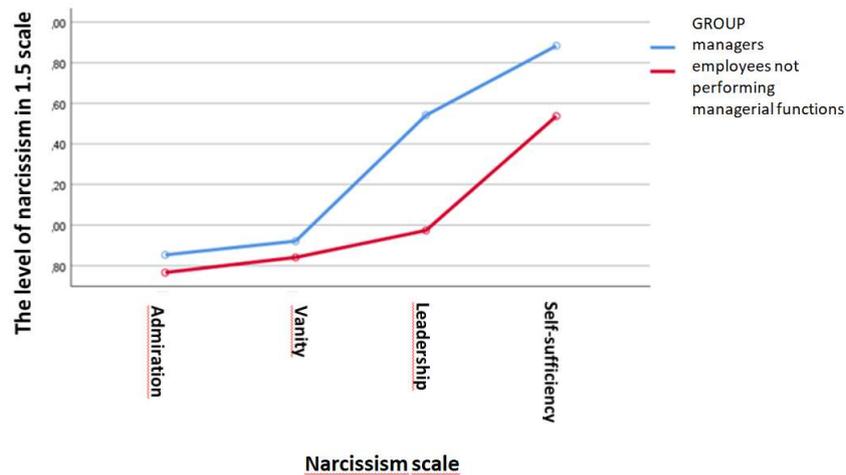


Figure 1. The level of narcissism depending on its scale and the group of respondents

Source: own study.

The groups do not differ on the narcissism scales, Admiration Demand and Vanity, while on the Leadership scale, managers score significantly higher than non-managerial employees:  $F(1,79) = 11.38$ ;  $p \leq 0.001$ ;  $\eta^2 = 0.13$ , similarly, on the Self-sufficiency scale, managers achieve a significantly higher score than subordinate employees:  $F(1,79) = 7.30$ ;  $p \leq 0.01$ ;  $\eta^2 = 0.09$ . So the hypothesis was confirmed.

## 5. CONCLUSIONS

The research confirmed the hypothesis concerning the level of narcissism in managers; it was significantly higher in this group than in the subordinate employees, and it concerned mainly the Leadership and Self-sufficiency narcissism scales, i.e. those that may be beneficial in the manager's work. In fact, on the Demanding Admiration and Vanity scales, the differences between the groups did not reach the significance level. Narcissism in managers is significantly and positively correlated with the scale of the need for social approval and the explicit self-esteem. However, the hypothesis that managers have a higher level of need for social approval than employees who do not perform managerial functions was not confirmed, and that a particularly high level of this need occurs in managers with high explicit and low implicit self-esteem. Perhaps this is due to the fact that the implicit self-esteem measures are still very imperfect. Therefore, they should be improved in order to more accurately diagnose, in particular, conflicts arising from the inconsistency of both assessments.

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## THE EXCEPTIONALISM OF OSAMA BIN LADEN'S WIVES

This paper's main goal was to assess, based on the analyses carried out, if Osama bin Laden's wives enjoyed a special status within Al-Qaeda as a result of their husband's rank and status. In other words, this paper examined if it is justifiable to infer the occurrence of exceptionalism or a detachment from religiously and socially predefined gender limitations, thanks to being married to the leader. The main methods used to examine this hypothesis were historical and content analysis, which provided verified premises, and the deductive method, which allowed for the construction of a sound argument that addresses the paper's research question. This paper's conclusion is not unequivocal.

**Keywords:** Al-Qaeda, Islam, Osama bin Laden, Osama bin Laden's wives, war on terror, women in Al-Qaeda.

### 1. INTRODUCTION

Islam is not a faith that promotes an internalised and individual approach to religion. On the contrary, it encompasses the whole reality of the believer, including the social and economic aspects of state organisation and the individual lives of Muslims. From that perspective, Islam is strong patriarchy. The Qur'an represents women as equal to men from the anthropological and moral point of view – "Whoever does good, whether male or female, and is a believer, We will surely bless them with a good life, and We will certainly reward them according to the best of their deeds" (Qur'an, 2021). However, her position in society and family is defined differently. She should seek the fulfilment of her life in being a mother and a wife and submit to her husband's will, who has disciplinary rights over her (Bani & Pate, 2015). In the marriage, a Muslim woman should be an ally or a guarding of a Muslim man – "The believing men and believing women are allies of one another. They enjoin what is right and forbid what is wrong (...)" (Qur'an, 2021).

Although the above cannot be said about all of the six wives of the leader of Al-Qaeda, Osama bin Laden, five of them shared life with him for a lengthy period of time, including the struggles and profits stemming from their husband position. This paper aims to examine whether the high status of bin Laden's wives translated into better treatment within the

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patriarchal social structure and loosening of strong social and moral constraints. The potential exceptionalism of the wives will be examined with the use of the historical method and content analysis. The critical reading of available sources reporting on the wives' lives will allow, with the application of the deductive method, to verify or falsify the central hypothesis of this study, i.e. whether bin Laden's wives enjoyed special privileges due to their husband position; whether such exceptionalism took place.

The paper is divided into five sections that provide context and premises for the main argument. The first one, very briefly, describes the inception, ideology, and structure of Al-Qaeda. The second, entitled "Women in Al-Qaeda", is dedicated to depicting the role given to women within the organisation. Next, the wives' story is presented, followed by the analysis of how the husbands rank within the organisation impacted the women's status. The paper is concluded with the answer regarding the occurrence of the exceptionalism of bin Laden's wives.

## **2. MILITANT ISLAMIST ORGANISATION AL-QAEDA**

Al-Qaida was established in 1988 and began as a logistical network to support Muslims fighting against the Soviet Union during the Afghan War. The members of the organisation were recruited from the whole Islamic world. In 1989, when the Soviet troops withdrew from Afghanistan, Al-Qaeda dispersed but continued to oppose what its leaders believed to be corrupted Islamic regimes as well as the foreign presence in Muslim countries. Around 1996, the organisation eventually re-established its headquarters in Afghanistan under the patronage of the Taliban militia (Britannica, 2019).

The rise of Al-Qaeda coincided with the development of a new type of terrorism. Terrorist organisations were established in other countries with goals similar to those of Al-Qaeda, such as Hezbollah in Lebanon. The activities of this type of fundamentalist organisations gave rise to the term "new terrorism" due to unprecedented brutal methods of operation and the scale of attacks, hitherto unknown (Zubrzycki, 2015).

Al-Qaeda became an international terrorist network shortly after its inception. Until his death, the organisation was financed and led by Osama bin Laden. It consisted of various groups scattered around the Muslim world, such as the Egyptian Al-Jihad group. Initially, Al-Qaeda was an informal organisational structure of Arabs who fought in Afghanistan against the USSR, and after the withdrawal of Soviet troops, it openly turned into an organisation of fighters who were to bear the fire of the Islamic "holy war" around the world (Alexander & Swetnam, 2001). The jihadists became convinced that it was mainly they who contributed to the victory in the war in Afghanistan.

In 1996, the ideological doctrine of Al-Qaeda was proclaimed, and Osama bin Laden announced the "Declaration of War Against the Americans Occupying the Land of the Two Holy Places, Expel the Mushrikeen from the Arabian Peninsula" (Bin Laden, 2007). In it, he claimed that the occupation (also understood as simply their presence in a Muslim country) of the land of Islam by American troops is the most severe act of aggression against Muslim countries, which forces them to start fighting. He called on all Muslims to jihad against the Americans and to overthrow the Saudi dynasty, cooperating with Israel and the United States, and made jihad a personal duty of every Muslim.

The organisation's main goal was to overthrow the "corrupt and heretical" governments of the Arab states and replace them with Sharia law. Al-Qaeda is strongly anti-Western and views the United States as the main enemy of Islam, which is particularly reflected in the

views expressed by Osama bin Laden, which urge all Muslims to take up arms and stand up against this country (Mielnik, 2019).

### 3. WOMEN IN AL-QAEDA

In the Declaration of War, bin Laden “explains that women are playing an essential role as supporters, facilitators and promoters in carrying out the international Jihad” (von Knop, 2008). Bin Laden also said: “Our women had set a tremendous example for generosity in the cause of Allah; they motivate and encourage their sons, brothers and husbands to fight for the cause of Allah in Afghanistan, Bosnia-Herzegovina, Chechnya and in other countries. (...) May Allah strengthen the belief- Imaan- of our women in the way of generosity and sacrifice for the supremacy of the word of Allah. (...) Our women instigate their brothers to fight in the cause of Allah. (...) Our women encourage Jihad saying: Prepare yourself like a struggler; the matter is bigger than the words” (von Knop, 2008). On the other hand, however, in the fatwa (a formal ruling or interpretation of Islamic law given by a qualified legal scholar) entitled “Jihad Against Jews and Crusaders, World Islamic Front” published in 1998, which became the manifesto of the full-fledged global jihad, the role of women seems to be diminished (von Knop, 2008).

Women were also portrayed as needing protection and vulnerable: “[T]o the sister believer whose clothes the criminals have stripped off. To the sister believer whose hair the oppressors have shaved. To the sister believer whose body has been abused by the human dogs” (Al-Qaeda, 2004). Based on these statements, it can be concluded that Al-Qaeda members recognised the capture of a Muslim woman by the people considered by them as infidels as a reason to carry out the defensive jihad. In such instances, ensuring woman's freedom is a duty imposed upon the whole world Muslim community (von Knop, 2008). However, one could argue about the definition of the word “freedom”. It could not be fully justified to understand it as understood by contemporary feminism as the freedom to decide about oneself. In this case, it is about freedom in the understanding of Islamism, that is, freedom defined by Shari'a law.

A document entitled “The Role of Women in the Jihad against Enemies” encourages women to participate in jihad actively. It does not mean actual fighting but calls for women to encourage and support men in their quest to join the jihad. While explicitly stating that women should not actively engage in physical combat, the document emphasises women's power over men, reminding them that their role in jihad is a vital necessity for the entire Muslim community (von Knop, 2008). It would seem that this has an almost propaganda overtone, which aims to improve the population's morale.

Since most of the men in Al-Qaeda acted at a high risk of being injured or killed, it would seem that assigning women to tasks that are no less important, but not necessarily related to literal physical combat, made a lot of sense. Those tasks were taking care of financial transactions, bookkeeping, the establishment of bank accounts, etc. Dealing with such financial areas can also often be done from home, which also facilitates the operation (von Knop, 2008).

One of the many things that is associated with terrorism is suicide bombings. At least five fatwas discussed the possible participation of women in martyr operations, also known as suicide bombings, and finally decided that this was allowed (Lundborg Regnér, 2017). Involving women in suicide operations and using their tactical advantages (a woman attracts more media attention, she can also smuggle an explosive in her clothes more easily) could

be understood as a rational choice of a terrorist organisation. More importantly, female terrorists have a greater capacity for mobilising support than their male colleagues – they provide strong role models for other women. Female terrorism also increases male recruitment because men may feel ashamed that women are taking over their tasks. Given all of these advantages, it is not surprising that women carried out suicide attacks in the name of Al-Qaeda (von Knop, 2008).

The instance of female suicide bombers operating under the banner of Al-Qaeda can be said to have increased over a relatively short time. From an analysis of the biographies of the very few women who acted under the banner of Al-Qaeda, it is obvious that in most cases, their educational level was above average compared to other female Muslims. Carrying out attacks allows women to fulfil traditional male duties and obtain the chance of being honoured by the society in which they live (von Knop, 2008).

Therefore, the community's respect (no matter whether during life or after death) and care for the honour are also important for Al-Qaeda women.

Even if classical Islamic sources are fairly negative about the role of women in jihad, it is equally clear that radical Muslims have been attempting to legitimise women's participation in it.

The necessary ideological justification to allow women to carry out suicide operations clearly exists, but it is questionable whether a revolutionary change in Jihad will be accepted by the larger radical Islamist community. It appears that women's roles of supporting male relatives and educating children in the ideology of the global Salafi Jihad play a more important role than suicide bombing in the short- and long-term survival of al-Qaeda affiliates (von Knop, 2008).

In 2003 bin Laden announced that the women are awaited to act their part.

With this statement, he emphasised the female tasks in an unprecedented way. This does not necessarily change the actual roles, but give women a new context; they are counted on in a way that hasn't been seen before (Lundborg Regnér, 2017).

However, it cannot be immediately assumed that suddenly the women grabbed their rifles and joined in building the bombs. It was a game intended to emphasise the importance of women in the organisation as such, rather than calling them to fight.

It is also worth mentioning that Al-Qaeda was an organisation with military features. After all, the main goal of its members was to wage war. Is it justified, therefore, to speak of women in Al-Qaeda as military wives understood as those who

maintain the household while their husbands are away at war, serve to calm and soothe stressed soldiers, create a sense of home at every new station or base, encourage their husbands to reenlist, and encourage their children to join the military (Sjoberg, 2012)?

The information provided so far shows that yes, the wives of Al Qaeda members were military wives. It can also be indicated that in-state military organisations, wives of Al-Qaeda members played a crucial role in psychological support for the group's male members. The ideal Al-Qaeda wife, however, provided not only psychological but also social and organisational support.

They function, much like military wives in the United States and around the world, as sources of psychological support and unconditional love, stitches in the social fabric of a sub-culture with substantial independence, and servants of the organisation as a whole (Sjoberg, 2012).

A completely different aspect is the portrayal of these women as criminals. There have been frequent arrests in the past of women whose husbands were suspected of belonging to Al-Qaeda. This had many purposes, including luring out hiding fighters who may have wanted their wives back and presenting it in the media as a success in fighting terrorism when other successes were lacking, and the public was dissatisfied. In this case, most of the arrested women testified that they did not know what their husband was doing. Perhaps some of them did not really know, or perhaps they testified in this way to protect their husbands and the community. It is also worth paying attention to the perception of the woman in this situation as a victim who sacrifices herself for the good of the cause and of her husband. It is because the husbands of the arrested did not always show a desire to release them and remained hidden, which can be interpreted as sacrificing their family happiness for the good of the mission, which is jihad (Sjoberg, 2012). Women who believed in the purpose of their actions as strongly as their husbands did, perhaps they accepted it with gratitude, knowing that they were doing a good deed.

#### **4. OSAMA BIN LADEN'S WIVES**

Osama bin Laden's first wife was his younger cousin. Her name was Najwa. The spouses knew each other since childhood because bin Laden's mother visited her relatives in Syria, where Najwa also came from. They spent vacations together, and Najwa remembers her childhood as a wonderful period in their lives when she saw the advantages of Osama and began to consider him an ideal. From the teenage age, Najwa was sure that she would want to marry her cousin in the future. On the other hand, when they both reached the marriageable age, he could not make a firm declaration. Najwa persisted and almost harassed Osama, and finally managed to win the wedding. However, this does not mean that Osama did not reciprocate her feelings. Perhaps it was simply an awkward period of adolescence and embarrassment about such a serious declaration as a desire to marry. The wedding took place in 1974, and one of the groom's closest friends gives an entirely different explanation for the decision to marry than overcoming shyness – a desire to have sex. The young couple did not immediately live together. Najwa only moved to her husband a few months after the wedding. It should be noted that Najwa, despite her descent from a religious family, "won" the right to wear non-traditional clothes in her family home and to develop her passions, such as playing tennis and painting. After moving to Saudi Arabia, she gave up colourful dresses and started wearing abaya and niqab. Initially, the new Mrs. bin Laden did not feel comfortable in the new reality and felt awkward and embarrassed by the new outfit, but she got used to it with time. Over time, she also developed unconditional

loyalty and obedience to her husband. His word was holy in their home. In Najwa's memories, the first years of marriage are probably the best time in their life together. In 1976 their first son was born, which further raised the rank of Najwa among the bin Laden family. When Osama was working, Najwa felt lonely, and after some time, she found herself a new job- tailoring. She started designing and sewing dresses, which gave her much joy, but also exposed her to a perilous confrontation with her husband. After the birth of her fourth son, Najwa, despite enjoying motherhood, was still slightly disappointed with the lack of a female child. She has always dreamed of a daughter who could be dressed in beautiful dresses. One day, while looking at her youngest son, Omar, she noticed that the boy's hair was too long. Furthermore, instead of trimming them, she started braiding them into braids and other interesting hairstyles. The next step was to "use" her son as a dummy for new dress designs. And so, one day, Osama came home to find his son in a dress and braided hair. One might expect this event to have tragic consequences for Najwa, but surprisingly it did not. The spouses had a quiet conversation, and Najwa confided in her husband that she was sad because she did not have a daughter and had no one to transfer these specific maternal feelings to (Ducret, 2012). This happened in parallel with bin Laden's initial involvement in the war in Afghanistan.

In the course of the development of his radicalism, Osama also reflected on polygamy. Thus, turning his mind into action, in 1983, he married Khadija Sharif, a woman nine years his senior, whose family descended from Muhammad, which gave her prestige (McGirk, 2011). Najwa was unhappy about it, but her husband convinced her of his decision, giving her the illusory hope that his second wedding depends on her consent. The woman, feeling some kind of power, graciously agreed to Khadijah. Khadija was a teacher at a private girls' school in Jeddah. After some time, she became friends with Najwa, which in the long run, was of great importance to both of them because they supported each other in difficult moments that were to come (Ducret, 2012).

The family was enlarged in 1985 with another Mrs. bin Laden. Interestingly, in this case, Najwa did indeed influence the selection of the candidate. The choice fell on Khairiah Sabar, an extraordinary woman and again older than Osama, this time by seven years. The woman came from Saudi Arabia, and one thing is certain, she had higher education, a doctoral degree, according to some sources in child psychology, according to others, in Shari'a law (McGirk, 2011). It would seem that since the first two wives became friends, the third was accepted by them, the family lives in prosperity, the husband fairly divides his time between the three wives, it is a seemingly very good situation, taking into account the realities and values about which is speech.

In 1986, Osama, frustrated by the fact that his third wife has yet to give him an heir, decides to marry another woman. This seems a somewhat quick decision considering that his marriage to Khairiah back then was a year during which she might not have become pregnant for several reasons, not least because her husband was often absent because he was very involved with the mujahideen in Afghanistan. So in 1987, he married Siham Sabar, another teacher, this time of Arabic grammar. It is also interesting that Osama did treat his wives fairly and divided his time between them equally, at least back then. Nevertheless, there was an unwritten rule in the family that Najwa, although the youngest, was the "most important" wife because she was the first (Ducret, 2012).

In 1990, bin Laden family's life passed between Osama's trips to Pakistan, the creation of Al-Qaeda, and his increasing radicalisation, which also translated into his family life (e.g., ever more modest home furnishings, dispensing water to his sons) and his wives

raising a group of children and spending time with each other and studying the Qur'an. At the end of 1990, a conflict broke out between Iraq and Kuwait, and Saudi Arabia, fearing Iraq's expansion, asked the United States for help. Osama considered it a personal insult and a serious offence to his religious feelings (cooperation with the West) and decided to move to Sudan (Ducret, 2012).

In 1994, when the family was living in Sudan, bin Laden went into business with local officials supporting his spiritual mission. At this point, attention should be paid to what bin Laden allowed his wives to do. All of them, except Najwa, could still work professionally. Especially Khairiah, who came to Sudan almost like on vacation, spending most of the time in Saudi Arabia. She welcomed esteemed Sudanese families and talked with them about the subtleties of Quranic law. This is all the more surprising since Osama was not much of a supporter of women's education, as evidenced by the fact that he did not send his daughters to school. It is all the more surprising that he got involved with such women. Some believe that the decisions about the next weddings resulted from his religious beliefs, according to which he wanted to care for old maids who had no better chance of getting married (Ducret, 2012). This cannot be completely ruled out because what exactly guided Osama bin Laden in making these decisions, only he knew himself.

Another surprising decision in the story is the divorce requested possibly around 1994 by Khadija, unable to bear her husband's further radicalisation and constant bans. Osama agreed to this without any further discussion, but he struggled after the breakup. After the divorce, the woman returned to Saudi Arabia. After Khadija's departure, Osama married another woman, but little is known about her, even her name is unknown. It is only known that the marriage took place in Khartoum in 1994. However, it was cancelled within 48 hours, and Osama never consummated the marriage, allegedly after learning that his new wife was forced to marry him (Ducret, 2012). However, is this true, and would a man like Osama bin Laden have heeded such an argument and displayed such "nobility"?

In 1996, Osama and three wives relocated to Afghanistan, a country at the time engulfed in a war between the Taliban and the mujahideen leader Masud. The family settled in a building on the Tora Bora hill, also known as "bin Laden's mountain". The conditions in the new house were indeed Spartan. It lacked running water, electricity and windows. Osama, who was fully involved in organising jihad, did not see the influence of the environment on the health, especially mental health, of his loved ones. His children hardly saw their father, he was a stranger to them, and Najwa fell into depression, which was further aggravated by another pregnancy and fear for the life of a new child (Ducret, 2012).

In 1997, Osama went to fight alongside Masud, and the family moved to Jalalabad, where an Al-Qaeda camp and command centre was built on the city's outskirts. His wives could count on the company of other wives of other militants, but they could enjoy it for only two hours a week during their Qur'anic studies. The decision for such a limited time to socialise was made by bin Laden, and his wives submitted to it without objections. Their voluntary asceticism and submission to their husband's will may come as a surprise, given their origins and growing up in abundance and without much restriction as to their free time (Ducret, 2012).

At that time, Khairiah was not only her husband's favourite but she was also liked and respected by other women in the community because she was able to adapt to her interlocutors. She was eloquent and had a diplomatic talent. Perhaps the favouring of the third wife was due to her education and the possibility of philosophical and theological discussions between the spouses, to which Osama, of course, could not directly admit

because he did not officially consider women equal and worthy of discussion. Siham constantly compared herself to Khairiah, creating complexes that made her almost always feel down. Meanwhile, Najwa returned to her obsession with clothes, and her biggest hobbies were makeup and shopping. She was probably saddened by her husband's displacement in favour of a third wife and thus tried to make up for the gaps in education by constantly trying to be attractive to him (Ducret, 2012).

It is worth returning to the topic of Osama's children. Although he officially opposed their education, his daughters he had with Siham were taught by him mathematics and physics while he was at home, and he allowed Najwa's daughters to listen to Western music, which he, too, privately, with some exceptions, was not a great opponent. His younger sons, in turn, received permission to own a Nintendo console. Khairiah's unique position may be determined by the fact that, after long discussions and demands made by the women in the camp, the leaders finally agreed to establish a school for girls there. Khairiah was entrusted with the task of organising it and teaching girls according to the teachings of the Qur'an (Ducret, 2012).

In the spring of 1997, the bin Laden family moved to Kandahar, where Osama decided to marry for the sixth time two years later, instructing Yemeni Sheikh Rashad Ismael to find him another wife. This one pointed to a teenage Amal. The girl accepted the offer of marriage without hesitation, believing that it was "God's plan". Thus Amal became the youngest wife of Bin Laden in July 2000. From an early age, she was pious and obligatory. She was also determined to die a martyr's death alongside her husband. The other wives were not thrilled with the expansion of the family but used to not discussing their husband's decisions, so they accepted Amal. Bin Laden's sixth wife seemed to enjoy life in the camp, as evidenced by her father's visit nine months after the wedding, who was shocked by the conditions in which his daughter lived. He urged her to return home to Yemen, but she refused, insisting that her place was with her husband, where her dream would come true, and she would live for a short time (Ducret, 2012).

In August 2001, she gave birth to a daughter. It was a time when nothing other than war was talked about in the camp. The atmosphere was also warlike. Mentally and physically exhausted, Najwa asked Osama for permission to return to Syria. They had a serious conversation, after which Osama agreed. It was a difficult decision for him because Najwa was with him from the beginning, for better and for worse, and the consent to her departure could be explained with love and respect for her. He likely did not want bad luck for his wife, and it motivated his decision even more. Before leaving, at the beginning of September, she gave him her wedding ring, symbolically ending their relationship. However, they did not get an official divorce (Ducret, 2012).

As for Khairiah, she was the first to flee to Saudi Arabia via Iran after the 9/11 attacks. In Iran, she was temporarily detained under house arrest, but the authorities allowed her to return home. She later crept from Saudi Arabia to Pakistan to meet her husband in Abbottabad. In the case of Siham, military sources say she may have sneaked into Pakistan and hiding after 9/11 until she felt it was safe for her to see her husband (McGirk, 2011).

Around 2005, bin Laden sneaked into Pakistan and settled in a fortress house in Abbottabad. After some time, he called his wives to him. Apart from two Saudis and a young Amal, 17 children lived with him. Each wife and her offspring lived on a separate floor of the house, and bin Laden tried to devote the same amount of time to each group. During the 2011 commando attack, bin Laden was in a bedroom with Amal and their daughter Safiyah. The woman pounced on the Americans to protect her husband and was

shot in the leg. The Americans left the women and children tied up at the scene, and soon they were captured by Pakistani special forces (McGirk, 2011).

## 5. THE SIGNIFICANCE OF HUSBANDS' RANK FOR AL-QAEDA'S WIVES

Spencer discusses an example where a husband's position in ISIS significantly increased his wife's opportunities. As ISIS arose from the Iraqi part of Al-Qaeda, it can be assumed that a similar situation could also be possible in the original organisation. It is also an excellent example of the exceptionalism of women in a terrorist organisation.

As clever and ambitious as Sayyaf was, her success within the organisation likely would not have happened without her husband's sanction. Women living under ISIS' stronghold are not able to occupy senior commanding roles; specific women are privy to top-secret discussion and undertake operations dependent on their husband's seniority. The odyssey of Umm Sayyaf confirms this (Spencer, 2016).

It is about Umm Sayyaf, who married the chief financial leader of ISIS. Thanks to her marriage to a high-ranking ISIS member, Umm had direct insight into the organisation's activities. "Notwithstanding her husband's assistance, Sayyaf held a prominent position in her own right. According to an anonymous senior defence official, Sayyaf was a principal advisor to the caliphate leadership on all critical women's matters" (Spencer, 2016). It is worth emphasising, however, that she did not become an adviser on tactical or political matters, but on women's matters, which may indicate, despite the exceptional situation, that she will remain in the iron pattern of "women deal with women's matters, men with men".

In the case of bin Laden's wives, the husband's position simultaneously granted them certain privileges and, on the other hand, deprived them of them. Being the wives of the leader, they could enjoy extra protection and respect, and at the same time could make them a target of a potential attack for the same reason. One cannot speak of privileges in the form of travel or material goods in their lives before leaving for Afghanistan because they resulted from their husband's wealth as the heir of a multi-billionaire, not a terrorist leader. For example, Maha el-Samah, the wife of a Canadian fighter who also lived in the camp, who regularly travelled to Canada and was able to enjoy visiting shopping malls there, enjoyed greater privileges of this type (Ducret, 2012).

Due to bin Laden's radical beliefs, their privileges were limited, as evidenced by life in very modest conditions and limited time for social interactions. There are also no reports that either of the bin Laden wives wished to become her husband's official adviser like Umm Sayyaf was.

## 6. CONCLUSION

There is no simple answer to the main hypothesis of the paper. Based on the source information and carried out analyses, it has to be stated that the phenomenon of exceptionalism among wives of Osama bin Laden occurred and did not occur at the same time.

If we focus on the part of the definition of being different from the rest in terms of living conditions and material well-being, this did not apply to Osama bin Laden's wives because the leader's wives shared the hardships of life in the camp with him and the other women. It also points to the lack of superiority of his wives over other women in Al-Qaeda. Of

course, as in the unwritten rule of the hierarchy of wives, it was possible that, due to the rank of their husband, they were logically treated with greater respect or prioritised on certain issues, not wanting to offend the leader, but the cited sources do not mention it. However, what was unique was that they followed their husband and stayed by his side almost to the end, which was not always done by other women married to important figures in this organisation.

Exceptionalism, however, took place in a different sphere, related to the strict adherence to the values proclaimed by members of Al-Qaeda. First, divorce. By design, marriages are concluded until the death of one or both spouses. Divorcing the second wife, in addition, at her request and resolving the matter “peacefully”, may prove Osama bin Laden's genuine respect for the opinion and wishes of his wives and the potential PR disaster that could have happened if the divorce had not occurred and the tormented woman decided to flee from her husband. It could damage the image of the rising leader, so choosing the “lesser evil”, it was better to opt for a divorce, which is allowed by Islam.

Another point is the equality of wives. Most sources agree that Osama bin Laden treated his wives equally and did not favour any of them for most of his married life. However, the time that Khairiah was active during the time in the Afghanistan camp and the aspect of her education clearly show that at that time, she was her husband's favourite and enjoyed his greater attention. This indicates a selective approach to treating wives equally because when circumstances changed and other wives began to show dissatisfaction, bin Laden began to pay more attention to the one who shared his beliefs, did not complain, and at the same time was a worthy partner to discuss religious matters, the most crucial issue in his life. This thread could also point to Khairiah's exceptionalism in comparison to his other wives.

The story of little Omar dressed in a dress deserves special attention. From the perspective of Islamic fundamentalism, it was a clear slander and denial of the son's masculinity. Cultural settlement of the case may also be evidence of the exceptional treatment of wives by bin Laden in the privacy of his home. This is also evidenced by other events, such as allowing Najwa to leave and giving the other wives the opportunity to leave him when the situation was about to worsen and become very dangerous.

It is also worth paying special attention to the repeated departures from bin Laden's proclaimed hatred and contempt for the Western world and life principles. Using Western machines, Western Internet portals, and driving Western cars constitute the selectivity of treating his assumptions, which proves hypocrisy. Also, in the private sphere, the example of home teaching daughters and allowing their sons to play on the Nintendo console prove this.

The issue of wives and women in terrorist organisations, in general, is a vast topic that can be studied from many perspectives. It is also a difficult topic to explore because it is not easy to access reliable information in this area. This may be due not only to the fear for the lives of those who have come into contact with this environment, but it may also result, as in the case of bin Laden's last wife, from a deep faith in the rightness of one's actions. This topic is still relevant today, especially in the era of the development of new technologies and the threat of the emergence of new types of terrorism. Therefore, it is worth exploring it despite the difficulties and show various facets of the world of terrorism.

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## STRUCTURAL DRIFT: REFLECTIONS ON SCIENCE INNOVATION POLICY IN POLAND

The subject of this article is an analysis of Polish scientific and innovation policy. The author made forecasts about the development of policy in the context of the reform implemented in Act 2.0. An attempt was made to formulate a forecast about the impact of the policy on the level of innovation in Poland. The author was critical of the changes implemented under the so-called Gowin reform and points to potential threats related to, among others, the hierarchization of Polish universities and maintaining the so-called Matthew effect: strengthening strong academic centers and weakening the inferior ones. The complexity of the issue of innovativeness and the limited influence of R&D expenditures on the level of innovativeness of a given country was pointed out. The author also referred to the Wissema's concept of the third generation university, which critically assesses changes in higher education, especially according to the idea of new public management, including university parameterization based on the points awarded for indexed journals.

**Keywords:** innovations, innovation policy, science innovation policy, academic entrepreneurship.

### 1. INTRODUCTION

The subject of the article is the prognoses of the development of Polish science innovation policy. The *Lisbon Strategy* (European Council, 2000) assumed radical economic transformation of the EU, which was expected to defeat the USA and Japan in the innovation competition. Thus, the EU policy focused on the creation of national innovation systems, which were to institutionally enforce the collaboration between the private sector and the research and development (hereinafter R&D) sector through various institutions controlled and coordinated by the state. Consequently, the concept of innovation reinforced the economic and commercial aspects in science policy and was put in the centre of it (Pelkonen, 2008). According to Gibbons, it was the last stage in the evolution of the scientific policy of the post-war period from the phase of policy for science, through science in the policy arena, to the period of technological innovations policy (Gibbons et. al., 1994).

The national innovation system in Poland is classified as the model in transition and the innovations have mainly the imitation character (Bukowski & Śniegocki, 2011). There are some institutions in the innovation system, such as clusters or science and technology parks,

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but their innovative activity involves mainly imitation and is incommensurate with the organizational and administrative base (Kwieciński, 2018). Therefore, the Polish system of innovation is considered to be *in statu nascendi*: although individual institutions are functioning, stable relationships have yet developed between its components (Bukowski & Śniegocki, 2011). It is worth mentioning that the Polish innovation system is mostly based on public institutions, which have been (and will be for the next few years) financed with EU resources. Innovation activity displayed by the private sector is negligible and mostly takes place in Polish branches of foreign companies. Universities do not conduct substantial innovation activity, either. In the regions of Poland with a low level of industrialization, faint (and often the only) innovation activity is generated in state institutions, whose functioning is not verified by market effectiveness. Obviously, there are places where innovation activity is dynamically developing, but these are scarce cases that only occur in huge agglomerations. Thus, the Polish system of innovation is characterized by the low efficiency of imitation innovation policy, excessive institutionalization of the Polish national system incommensurate with its R&D resources, low profitability (Poland has one of the lowest efficiency ratio in the EU) and excessive financial dependence on EU funds (Gasz, 2015). In this context, the question of the future of innovation leads to rather pessimistic forecasts. The presented discussion on forecasts concerning the development of science innovation policy in Poland is based on publications, analyses and reports on innovation as well as critical analysis of literature of the field.

## 2. SCIENCE INNOVATION POLICY

Forecasts concerning the development of Polish innovation policy refer to the growing role of the sector of science in innovation processes. It is the result of many factors, i.a., the problem of brain drain pointed out in benchmarking analyses (Klimczuk-Kochańska, Proniewski, Popławski, Niedźwiecki, Perło, Skibińska, Juchnicka, Nikitorowicz, 2012) or the increasingly popular idea of learning regions (Gasz, 2015). The experience of collaboration between scientific institutions and the world of business to date clearly shows that the role of academia in generating innovation activity is overestimated. Generally, most Polish universities are not innovative, and the private sector is not interested in cooperating with universities functioning completely out of the market reality. Although 30 years have passed since the system transition, the value of scientific exploration, i.e., the pursuit of the truth, has not been properly acknowledged since the post-war period, either in science policy or in the real activity of universities. Commercialization of universities may be possible, but definitely not in the present phase of development of Polish science. Before universities in post-communist countries adapt to the market reality (if they do so at all), they need to work out stable conditions for R&D activity. From the beginning of the system transition, change has been the most distinctive feature of Polish science. The state of reform, referred to in source literature as constant reinstitutionalization (Sadowski, 2014), is going to continue in the nearest future. The *2.0 Law*, implemented by the Ministry of Science and Higher Education in October 2019, introduces many solutions typical of the new public management policy, connected i.a., with the evaluation of institutions and academics' research work in accordance with standardized rules (Dz.U. 2018, item 1668). M. Kwiec, one of the co-authors of the new law, considers international comparative data to be the starting point for creating science policy.

We – as the system, particular institutions and their agendas as well as individual researchers located in various parts of the system – are becoming almost transparent for the world, and if particular elements are not visible in the global perspective, it means our situation is even worse. It is because the age of visibility (and measurability) has come for all the most important dimensions of university (Kwiek, 2018).

Therefore, *the Constitution for Science* stresses the need for scientists to publish in journals present in international bases such as Scopus or the Web of Science, which help researchers from all over the world access that content. In the evaluation process, such publications receive more points. In the evaluation following the new rules, universities will mostly be assessed using the criterion of indexed scientific production. In accordance with the strategic choice made in the law, the level of an institution is determined by its scientific accomplishments, not the degrees of staff members.

One of the most important changes, whose consequences may not yet be understood by everyone, is recognizing the significance of publications and research grants (ultimately affecting the income and scientific production structures and their temporal changes) instead of the number of new professors and habilitations (Kwiek, 2018.).

In the context of structural changes, the reform introduced by minister Gowin corresponds to the idea of learning regions and introduces solutions mobilizing scientific institutions to establish broader cooperation with the environment. *The Law* provides i.a., for the possibility to create federations. The federation will be entitled to joint evaluation in a specific field, carry out scientific activity, educate doctoral students, grant scientific degrees and commercialize the effects of scientific activity. The solution with crucial importance for the future of the Polish science, and indirectly, for their research and innovation potential, is the introduction of so-called ‘flagship universities’ (although this term is not explicitly mentioned in *the Law*). The best academic centers will be able to fight for extra financial resources as part of the cyclical program *Inicjatywa doskonałości – uczelnia badawcza [Excellence Initiative – Research University]*. The best ten universities can obtain at least 10% extra resources granted as part of the subsidy for 6 years. The other institutions which meet the contest requirements may obtain extra 2%. Obviously, it is only possible for a university to receive category A or A+ if its employees have a high rate of indexed scientific publications and apply for scientific grants. Thus, *the Excellence Initiative* program strengthens alternative paths of obtaining resources for research, and as a result, it supports vertical diversification of Polish academic institutions.

Resources for research produce more research, which means that grants are necessary for new publications and research projects in most disciplines, but to obtain grants (from the National Science Centre or the European Research Council), you need to have the best publications. Thus, it is a vicious circle: without best publications there are no new grants for research, so there is no new research, and so there are no new publications or citations. For institutions, this is one way to collapse (Kwiek, 2018).

The money will go to the small group of the few best universities in Poland, especially the University of Warsaw and the Jagiellonian University. The contest allocation of grants from the National Science Centre will result in more good (highly indexed) publications. In institutions that receive financing, the pool of indexed publications is systematically growing, allowing to apply for further resources from the *Excellence Initiative* program. This results in the process of accumulation of prestige, and hence, of resources. The Matthew effect – strengthening the strong and weakening the weak – is more powerful in such institutions than in others, which do not use context financing or use it to a little extent. It is hard to forecast to what extent the proposals will affect the innovation activity of higher schools, especially that the new law does not introduce any revolutionary changes in cooperation with business. Many changes have already been introduced, first by means of the *Small Innovation Law* (Dz.U. 2016, item 1933), and then, another *Innovation Law* (Dz.U. 2018, item 1668). The proper regulations concerning technology transfer are an imitation of the current regulation. The division into indirect and direct commercialization is still in place. Further, *the Constitution for Science* takes over the previous model of procedure of so-called “enfranchisement of researchers”, i.e., their obtaining the right to the results of R&D works. The present principles of distribution of profits from commercialization between the researcher and the university will not change. Asked whether university faculties will focus on commercial parts of their disciplines only, H. Izdebski responds:

This trend is becoming the mainstream in Poland, while in other countries, it is beginning to recede. The task of the university is to educate good professionals, not to assume their role and compete with them. And the concept of entrepreneurial university, which was not created in Poland, does involve such dangers. (...) Yes, I know the spirit of this reform is to combine basic research, applied R&D works into one technological series. But it’s impossible to do. Einstein was not an implementation researcher. What is more, for some time, his theories were regarded as a fad, which may be interesting but will definitely not be useful. Would he fit the entrepreneurial university? (Izdebski, 2018b).

We might ask instead whether in the reality of Polish academia there is a chance for the development of entrepreneurial attitudes, which can ultimately stimulate innovation. Analyzing the assumptions of the reform introduced with the *2.0 Law*, one may have the impression that in some academic centres the chance definitely exists. The leading Polish universities, which will make the core of flagship research centers in the nearest future, will become the main center of research with a high index of scientific production. Universities will become commercial, but only as regards market mechanisms of applying for grants. Innovation policy based on the assumption that research is the main source of innovation irrespective of the amount of financial expenditure will never be effective. The phenomenon of innovation is something in between production and marketing. New solutions may result from R&D work, but it does not have to be so. Innovative things are mostly those that sell, regardless of the cognitive value of the new product or service. Hence, the political discourse legitimizes some myths concerning innovation, constructing the rhetoric contrary to the scientific discourse. Therefore, it must be emphasized here: from the perspective of scientific discourse on innovation, postulates assuming a direct influence of R&D expenses

on the level of innovation deserve criticism. Although this assumption is often repeated in EU strategies and present in scientific literature, it is actually a hypothesis, proved false in empirical research. “Actually, there is no clear correlation between the level of research expenditure and the level of innovation” (Jaruzelski, Dehoff, Bordia, 2005). Unfortunately, the political vision is being implemented by the Ministry of Science and Higher Education, which is well evidenced in the following quotation from the recitals of *the Constitution for Science*: “Universities and other research institutions carry out the mission of special importance for the state and the nation: they contribute considerably to the innovativeness of economy, to cultural development, and to shaping the moral standards present in the public life” (Dz.U. 2018, item 1668).

The belief in the key role of universities in the innovativeness of the economy shows the misunderstanding of the idea of innovation and the lack of scientific knowledge in this regard. The experience of western countries clearly shows that the stress on the commercialization of research does not guarantee the expected financial profit and only leads to the marginalization of basic research and reduced quality of didactic work (Izdebski, 2018a). But in the context of innovation, the main question is different: will the predicted, almost certain, development of the best Polish science centers – measured with indexed scientific production and active research work – generate the expected (and symbolically present even now in *the Recitals of the Constitution for Science*) increase in innovation activity? What about the institutions that do not meet the threshold of *Excellence Initiative*? And what about those that do not even obtain the *Regional Initiative* title? What effect will the strengthening of the vertical structure of Polish research centers have for regions’ innovativeness if we take into consideration the Matthew effect? Will the best universities be the most innovative? The experience of western countries shows it is fitting to be skeptical about such straightforward theses. The title *Excellence Initiative* will not have a direct positive impact on the innovation potential. Universities may carry out impressive research activity, which I consider to be their main mission in the context of the discussed reforms, but it does not mean at all that they will be more innovative than other institutions. I would rather see some influence on innovative attitudes in the indirect result of investment in human capital, which the *2.0 Law* forces the authorities to do. *The Constitution for Science* undermines the current assumption that recruitment policy and promotion policy do not really matter for the university profile. In the situation of closely binding financial mechanisms with the measurable, prestigious scientific production, the key to the research character of selected institutions will only be talented staff: productive, engaged in research, and having the potential for obtaining additional, external financing of research (Kwiek, 2018). Supposedly, employees matching this profile will display some innovation activity, provided that in the reality of standardized scientific production, innovation will be profitable for academics. Thus, universities will compete with each other, and the effect of this competition is easy to predict and already forecast in source literature: the process of stratification will deepen. And innovation? Despite pompous and inaccurate declarations included in the Recitals, innovation in Poland usually occurs in places where decision-makers do not really expect it.

### 3. THE 4<sup>TH</sup> GENERATION POLICY. THE 3<sup>RD</sup> GENERATION UNIVERSITY

One of the strongest trends forecast with reference to the development of Polish universities is the direction of deepening stratification. The *2.0 Law* enhances the processes of hierarchization by introducing solutions resulting in the Matthew effect: stronger institutions will strengthen, and the weak ones will weaken. The pillar of research is to be research activity resulting in scientific production in journals with a high impact factor. The introduced changes result from the imperative of visibility of Polish science centers, connected with the growing importance of standardized, international comparative data. The introduction of technocratic principles of evaluation of universities and individual work of researchers may have positive effects concerning the level of their scientific activity. Probably, there will be some strategies aimed at evading regulations and attempting to maintain the *status quo*, but it seems that the mechanism of strictly binding the financing of an institution with its parametric assessment will discourage others from making such attempts. From the perspective of development of the research potential of the Polish academia, we may pin our hope in Gowin's reform. However, *the Constitution for Science* does not introduce the needed and expected solutions concerning the innovativeness of Polish universities. In the political discourse, the statement of the lack of significant influence of R&D activity on innovation activity, often repeated by the author, is ignored at best. And yet, the dynamic development of research on innovation and experience of developed countries, which have been introducing various scenarios of development for many years, shows that the key for stimulating innovative activity is not R&D activity but entrepreneurial attitudes of academics, students and owners of private companies. Innovation is commercialization. A crazy inventor with a number of patents to his credit is not an innovator. An innovator is first of all a practitioner who knows how to sell their idea. "An idea in itself is nearly worthless. It only assumes some worth in the phase of development and marketing" (Wissema, 2005). That's all. As shown by research carried out by the *European Innovation Scoreboard*, even a high number of patents registered in a country does not correlate with high innovation activity. Innovation is most closely related to marketing, and less to technology. The sector of social innovation, currently growing in importance, is mostly based on institutional, ecological, cultural and behavioural innovations. New forms of innovation also lead to changes in global innovation policy, which is referred to as the 4<sup>th</sup> generation policy, stressing the interdisciplinary character and context of usability of social innovation. The reorientation of international strategy causes changes in the discourse of science policy, in which the idea of modern entrepreneurial university, called the 3<sup>rd</sup> generation university, is used more and more extensively. This concept was presented by J. G. Wissema, who refers to the new mission of universities, that is, educating and supporting entrepreneurs which try to introduce to the market some technological concepts, ideas or technologies (Wissema, 2005). Generally, the 3<sup>rd</sup> generation university conducts research activity, and hence, it employs entrepreneurial academics and educates future entrepreneurs. The idea of entrepreneurship constitutes the scientific and didactic activity of university. Thus, the author demystifies innovation as a gift of outstanding individuals and focuses on the ability to commercialize the invention: "An idea, even a good one, has no worth. An invention may have some worth. But innovation may be worth a fortune", he argues (Wissema, 2005). Wissema's assumptions concerning didactics are based on the belief that entrepreneurship is an attitude that can be taught and acquired as part of university education.

Yes, entrepreneurs are dreamers with passion, who pursue their dreams. If it is the matter of passion, entrepreneurs do not need any special gene of success. Anyone who is ambitious, wants to learn and is persistent can become an entrepreneur. It's not magic. You can learn anything as long as you want to, he concludes (Wissema, 2005).

The model of the 3<sup>rd</sup> generation university is based on so-called seven-pointed star and includes, among others, the following elements: commercialisation of know-how, ambition to become an international centre of technology transfer, introduction of research evaluation based on direct control with the system of appeals (expert evaluation), independence from the state authorities as there is no direct financing of the university from the budget, replacement of faculties with specialised thematic entities of an entrepreneurial nature, replacing faculties with specialist, entrepreneurial subject teams having their own management and establishing their own networks of cooperation, English as the basic language of communication (Wissema, 2005).

It is hard not to comment on the revolutionary character of the changes proposed by Wissema. In the context of discussion about the Polish science policy, the model of 3<sup>rd</sup> generation university is undoubtedly very futuristic, and perhaps even fantastic. It is worth pointing out, however, that it mostly resulted from the criticism of some assumptions currently promoted by Gowin's reform. Wissema harshly criticizes the idea of so-called scientific production, on which he comments:

Finally, research itself has become an object of bureaucracy. Administrators boasted about an increase in research productivity (again, a term taken from commercial organizations), and the measure of that "productivity" was the number of publications and citations. The system was very beneficial for research that repeated earlier theses. Independent and innovative thinking was the casualty of such an attitude, and mediocrity has become the standard (Wissema, 2005).

Sadly, universities still measure the results of research with the number of scientific publications: Not only publications are counted. It also refers to the number of citations, which is determined with complex indices, where different scientific journals are classified with regard to the count of citations and the positions of particular researchers are expressed in the form of a weighted average of citations of their works. It is a typical way of thinking from the industrial period, which cannot be used in the information age. It stimulates the formation of pseudo science (Wissema, 2005). In the context of the discussion on the role of Polish universities in the development of innovation activity, it is also worth pointing out the importance of universities in developing entrepreneurial attitudes of academics and students. In Poland this issue is marginal and is mostly studied in relation with EU programs promoting and financing this issue. Scientific and political reflection oriented at the development of innovation through stimulating entrepreneurial attitudes is actually absent. Thus, the prognosis is that in the nearest future the direction of development of potential of Polish universities will not contribute to an increase in innovative attitudes, even if it will result in observable (or rather visible) growth in scientific production.

#### 4. CONCLUSIONS

The linear model of forcing innovation through science (the supply model) dominates in Poland, while in the EU it has already become obsolete and been replaced by the model of innovation “dragged” by the market (the demand model). The forecasts concerning the development of innovation and science policy suggest that in the nearest future, this trend will change considerably. The concept of regional innovation systems, based on the idea of learning regions, overestimates the importance of investment in R&D potential as a motor of innovation.

Apart from many economic factors whose dynamics is hard to predict, the reorientation of Polish innovation policy should avoid reproducing ineffective assumptions of EU strategies. One of the most serious mistakes, often pointed out in source literature, is treating research as a source of innovation (Ciborowski, 2014). “Actually, there is no clear correlation between the level of research expenditure and the level of innovation (Jaruzelski, Dehoff, Bordia, 2005). Another trap may be the overestimation of the factor of knowledge in creating market processes, and innovation is definitely one of them. This erroneous thinking has also been present for many years in European- and national-level innovation strategies. Although the concept of regional systems changes the perspective of thinking about innovation from the national to the local level, the mechanisms of distribution of financial resources are still the same. Evidently, the main target is the level of R&D expenditure. It is worth pointing out that as a result of such a policy, the European market is becoming less flexible and new, innovative enterprises are not established. The market is still dominated by big corporations, which use the support of innovation policy to become monopolistic and make a trustified economic structure. As argued by Ciborowski, this will result in higher expenses for R&D but will not increase innovation (Ciborowski, 2014). L. Zienkowski expresses a similar opinion, concluding the reflections on the impact of knowledge capital on economic growth as follows:

Assuming as the starting point the realistic view of the situation – relatively low R&D expenditure, especially in the sector of enterprises, the insufficient number of highly qualified research workers and engineers, relatively low level of education capital (formal knowledge) and low level of literacy (actual knowledge, not the formal education level) – substantial growth of R&D expenditure in Poland is unlikely to have far-reaching effects, even if such growth was possible (Zienkowski, 2008).

While the EU innovation policy can be called an instrument which “does not guarantee effectiveness and may even do harm to entrepreneurial processes” (Ciborowski, 2014) the idea of smart development of regions involves a danger that the knowledge on regional determinants will neither do harm nor help innovation. For many years, the national and regional innovation policies have had their strategy based on a wrong assumption, i.e., considering R&D expenditure as a source of innovation, and consequently, evaluating innovation using the criterion of technological activity, excluding social and economic activity (Ciborowski, 2014).

The most effective method of influencing innovative entrepreneurship is the possibility to use properly the resources and market opportunities available for entrepreneurs, and the

stakeholders of the regional innovation system cannot do much about it. However, it is the institutions responsible for regional policy that can shape the quality of human capital – the factor of special importance in peripheral countries and regions.

The problems of peripheral countries are aggravated by privileges for foreign capital regarding access to knowledge, but also the immaturity or incompetence of political elites, as well as their low sensitivity to social problems. Wise authorities learn not to renounce the most valuable resources, that is, human resources (Popławski, Popławski, 2016).

Thus, in the context of discussion on the future of innovation in Poland, investment in human resources should be treated as the priority. Innovativeness is always hard to learn, because it is a characteristic of few, and the massive outflow of entrepreneurial individuals from imitation countries is not only becoming a social fact but also considerably worsens economic losses and prevents the country from overcoming backwardness or so-called middle income trap, which is evidenced i.a., by the weakening pension system, brain drain, and exogenous growth (Popławski, Popławski, 2016). Unfortunately, science policy is going to deepen the hierarchy of Polish universities, only few of which have a chance to become flagship centers with a stable, systematic source of financing. The *perpetuum mobile* of development of Polish academia is to be the high rate of scientific production, whose influence on the innovativeness of Polish economy is lower than assumed by the authors of the law. The trend of imitating foreign solutions rooted in the idea of new public management is consolidating in Polish innovation policy. However, this process occurs later than in the model countries, which results in copying solutions whose effectiveness proved to be lower than initially assumed. Polish innovation policy repeats the mistakes of developed countries such as overestimating the impact of R&D activity and standardized scientific production on innovation activity. Unfortunately, concentration on the macrostructural model of national innovation system drawing on the experiences of EU countries has led to the marginalization of importance of human capital in the development of innovation. An individual with their intellectual and entrepreneurial potential is not the addressee of systemic innovation policy or science policy. Both strategies are under a great influence of industrial rhetoric, promoting measurable and visible indices of human activity. But innovativeness, as a feature of few individuals, mostly requires investment in human capital. One could ask a provocative question whether innovation can be a change predicted by the authors of the policy in advance (Ciborowski, 2014). Probably not. Decision-makers have limited influence on the dynamics of global economic processes shaping the market of innovation, although they have a greater impact on shaping the economic development of regions. And yet, it is more and more often argued in source literature that innovation is a very complex and dynamic phenomenon, and its occurrence is practically unpredictable (Miettinen, 2002). With the development of international comparative research on innovation, the list of determinants of innovation is becoming shorter and shorter (Godin, 2002; Jasiński, 2013). Researchers have undermined i.a., the thesis of the key impact of R&D activity (Zienkowski, 2008). More and more studies point to the lower than expected impact of infrastructure of national innovation systems (Nazarko, 2013; Niosi, 2002; Okoń-Horodyńska, 2012; Popławski, Popławski, 2016). Research results and the increasing

knowledge on the study of innovation support the thesis of the crucial importance of human capital in creating innovation (Mytelka, Smith, 2002). The essence of innovation policy should be the shaping of modern mechanisms of development of human capital, especially as regards entrepreneurship. And yet, in Poland the importance of education in the development of innovation is marginalized. Innovation policy focused on the idea of learning regions introduces significant changes in this respect. However, the thesis of the priority importance of cooperation between institutions of the academia, business and local government a priori assumes a sufficient level of human capital of particular stakeholders. Still, research results clearly show that the high enrollment ratio of the Polish society does not correlate with other elements of human capital, e.g., with the level of entrepreneurial attitudes of individuals, particularly academics and students (Kleiber; Kleer, Wierzbicki, Galwas, Kuźnicki, Sadowski, Strzelecki, 2011). “You need to learn how to walk before you learn how to run”, we could metaphorically sum up the relations between regional innovation systems and the level of human capital. It is only a higher level of education of the society and the intellectual elites developed within it, supported with socio-economic policy and a change in mentality of the society towards innovation, that may accomplish the situation in which the internal scientific and technological thought will be the basic factor of development (Zienkowski 2008).

Unfortunately, the science policy represented in the *2.0 Law* also clearly depreciates didactic scientific activity, which is not subject to international standardization or comparisons, and thus, does not play a significant role in the parametric assessment of universities. The few factors on which the state policy may have a real impact are marginalized in Poland, and the presented changes are going to reinforce this trend in the foreseeable future.

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## **ASSESSMENT OF THE FINANCIAL STANDING OF SELECTED POLISH IT COMPANIES DURING THE COVID-19 PANDEMIC**

The crisis caused by the COVID-19 pandemic is credited with causing a significant acceleration in digital infrastructure progress. It seems perverse to say that had it not been for the pandemic, IT changes would have taken much longer, even several years. It is predicted that in 2021/22, the pace of IT development will continue to increase, and in the long run, cloud infrastructure will develop dynamically twice as fast. This article presents an analysis of the economic situation and financial standing of the two largest IT companies in Poland, namely, Asseco Poland SA and Comarch SA. The research was carried out based on the most important business activity ratios: return on assets, return on equity, return on sales, return on investment and the assets and liabilities structure ratios (30) (35). They indicated that Asseco Poland SA has a stronger economic and financial position. The analysis also showed that Asseco is able to develop stably in difficult conditions, as proven by its financial results during the pandemic.

**Keywords:** IT, financial analysis, performance indicators, COVID-19 pandemic.

### **1. INTRODUCTION**

The crisis due to the coronavirus pandemic visible in the global economy caused a number of negative effects in the Polish economy. There has been inhibition or even complete stoppage of economic activity in many industries. The crisis caused by the pandemic is attributed to causing a significant acceleration in the progress of IT infrastructure. On the basis of conducted research and an analysis of business involvement in the anti-crisis action strategy of the largest Polish IT companies Asseco Poland SA and Comarch SA, it may be stated that both these IT corporations effectively engaged in offering solutions in the IT market that would enable normal functioning of the Polish economy during the crisis. These companies reported improved financial results and strengthened their position on the capital market not only in Poland.

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## 2. CHARACTERISTICS OF THE COMPANIES STUDIED

Two Polish IT companies, Asseco Poland S.A. and Comarch S.A., were selected for the study. Asseco and Comarch are the dominant Polish companies in the IT market in terms of sales of software. Currently, Asseco Poland's market capitalization is over PLN 5.8 billion, while Comarch is valued at PLN 1.8 billion (bankier.pl). The IT industry in Poland is characterized by a diversified market and significant competitiveness. Not only domestic companies operate on this market but also foreign companies mark their presence very strongly. The market analysis data shows that software producers account for the largest share of the IT market in Poland (38.1%), followed by IT service providers (28%), producers of IT hardware (19%), and companies operating in the IT infrastructure segment (14.3%) (pl.asseco.com; brandsit.pl).

Asseco Poland is listed on the Warsaw Stock Exchange with a stake in the following indices: WIG 20 – 1.76%, WIG – 1,21%, WIG-INFO – 37.24%, WIGTECH – 10.01% (bankier.pl). The company is one of the largest IT companies in Poland and a well-known company abroad, whose business is focused on the sale of proprietary software and services (prnews.pl). It currently employs 22,300 people. Asseco Poland S.A. was ranked first in the Polish IT market category by Computerworld TOP200 in its 2018 report. Figure 1 shows the stock price of Asseco Poland over the period of 2017–2021. It can be seen that between 2018–2019 the stock price has declined somewhat, but since mid-2019 the stock price has shown a steady upward trend. The lowest price was recorded on 22 June 2018, when it was 37.8400 PLN, while the highest price was 75.9000 PLN on 1 June 2020 (www.bankier.pl).

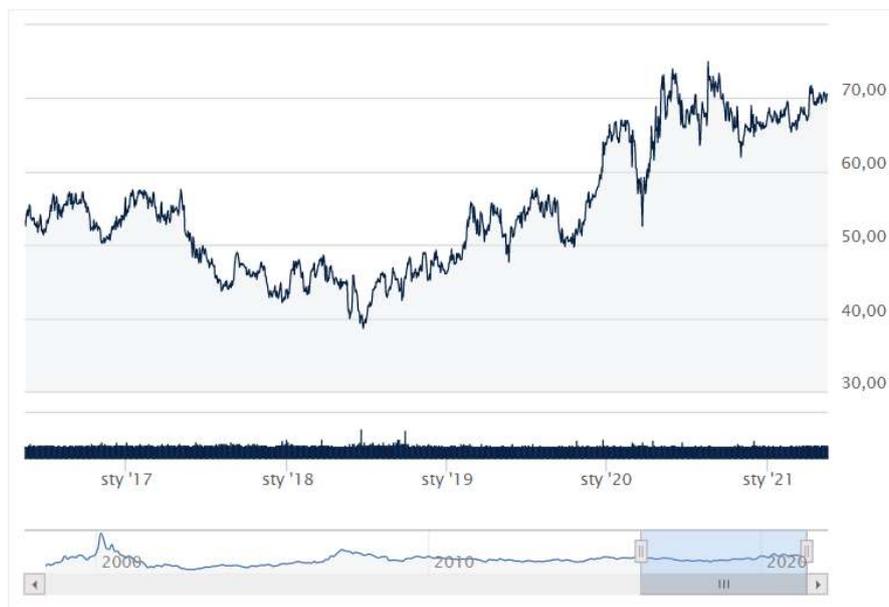


Figure 1. Quotes of Asseco Poland on the Warsaw Stock Exchange in the period 2017–2021

Source: (bankier.pl/inwestowanie/profile/quote.html?symbol=ASSECOPOL).

The largest competitor of Asseco Poland is Comarch S.A., which is considered a *smart* computer company. Founded in 1993 in Cracow, it is engaged primarily in the supply of software and IT services. Comarch is a capital group having its divisions in Europe, Asia, South America and North America. The group consists of, among others: Comarch Software AG, based in Dresden and Frankfurt am Main, and Comarch Inc. based in the USA. It currently employs 6500 people (bankier.pl).

On 4 April 2017, Comarch became the owner of author's economic rights to ERGO software. The purchase of the above company allowed the Group to expand its portfolio of IT products for the public sector, as Geopolis was a company dedicated to supporting IT in public administration units (comarch.pl).



Figure 2. Quotes of Comarch on the Warsaw Stock Exchange in the period 2017–2021

Source: (bankier.pl/inwestowanie/profile/quote.html?symbol=COMARCH).

Figure 2 shows Comarch's stock price on the Warsaw Stock Exchange over the period 2017–2021. As in the case of Asseco Poland, Comarch's stock price was lowest at the turn of 2018 and 2019. The lowest price recorded over the presented 5 years was recorded on 6 June 2018 and amounted to 127.5000 PLN, while the highest price was 244.9000 PLN and was recorded on 4 May 2017.

The data presented in Figure 3 shows that the WIG-Informatyka index is dominated by the Asseco Group companies (bankier.pl). Asseco Poland holds a 38% equity interest, which confirms its dominant position in the index. Further members of the Asseco group are ASSECO SEE with 10% and ASSECOBS with 6%. The second largest company in the above-mentioned index is Livechat with 18% share. Further positions are occupied by Comarch (11%) and Datawalk (7%), respectively. Other IT companies together have a 10% share.

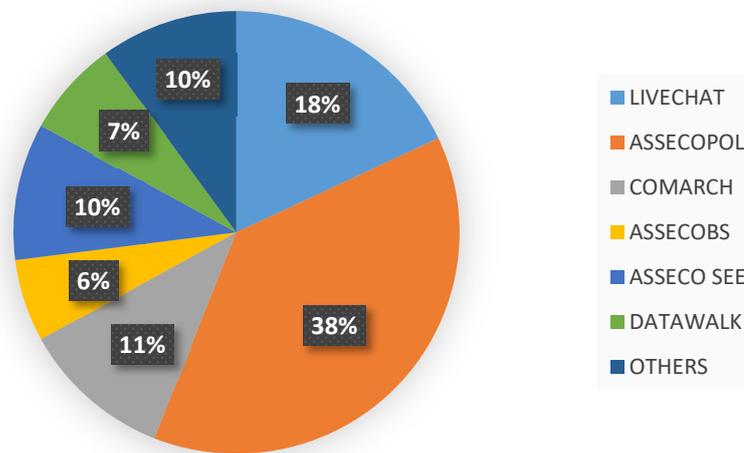


Figure 3. Shares of companies in the WIG-Informatyka index

Source: Own elaboration based on: (stockwatch.pl/gpw/indeks/wig-info,sklad.aspx).

### 3. AN ANALYSIS OF COMPANIES ON THE BASIS OF SELECTED FINANCIAL INDICATORS

The ratio analysis of Asseco Poland and Comarch has been carried out based on the data from financial statements (Gartner Report). and the data presented by the companies in their regulatory filings. Tables 1 and 2 present main indicators of companies studied.

Table 1. Profitability ratios for Asseco Poland

	2017	2018	2019
ROA	3,19%	3,13%	3,95%
ROE	3,49%	3,36%	4,23%
ROS	13,89%	20,12%	13,46%
ROI	174,11%	9,75%	30,71%

Source: Own elaboration based on data from the 2017–2019 financial statements of Asseco Poland.

Table 2. Profitability ratios for Comarch

	2017	2018	2019
ROA	3,15%	3,72%	4,13%
ROE	4,94%	5,95%	6,54%
ROS	7,02%	12,25%	4,33%
ROI	37,16%	45,05%	45,25%

Source: Own elaboration based on data from the 2017–2019 financial statements of Comarch.

A first “bird's eye” look at the two basic analytical ratios ROA and ROE (Nowak, 2008) in the surveyed companies shows that return on assets and return on equity show a higher growth rate in Comarch than in Asseco Poland. Although ROA in 2017 in Asseco is higher than in Comarch, in the following years the value of this indicator grows faster in the case of Comarch than in Asseco. However, the absolute values of these ratios, except for 2018, are at similar levels (Figure 4) (Gołębowski, 2016; Babalola, Abiola, 2013).

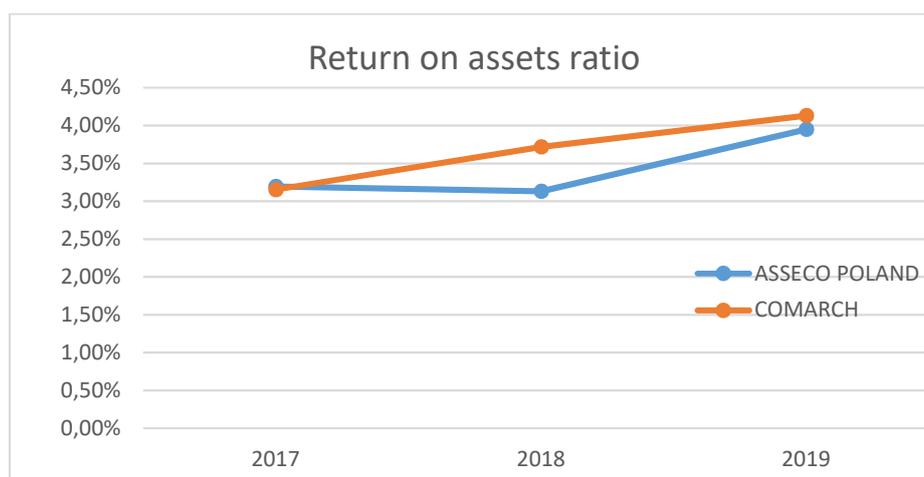


Figure 4. Comparison of return on assets ratios

Source: own elaboration based on financial statements of Asseco Poland and Comarch for 2017–2019.

Asseco Poland's return on assets ratio shows that in 2017, one PLN of assets managed to generate 0.0319 PLN of profit, against 0.0315 PLN for Comarch. A year later, the difference in the level of indicators was 0.0059 PLN in favor of Comarch and in 2019 this difference has minimized to 0.0018 PLN. The increase in the value of this ratio in Asseco in the last analyzed year was influenced by the steady growth of net profit from PLN 175 million in 2017 to over PLN 200 million in 2019 (Bednarski, 2007).

The return on equity (Figure 5) was higher in Comarch in each of the years under analysis. Both the above-mentioned companies are characterized by a growing trend, but the growth dynamics is also higher in Comarch (1.32%) than in Asseco (1.21%) (Bień, 2005).

On the other hand, when analyzing the profitability of sales (Waśniewski, Skoczylas, 2002), one can clearly see the advantage of Asseco. In the analyzed years, the Podkarpackie-based company managed to generate the average return on sales at the level of 15.82%, which means that each PLN of realized sales brought the company almost 0.16 PLN of net profit (Figure 6) (Brigham, Houston, 2013). In the competing company in Cracow, the return on sales ratio was on average at the level of 7.87%, i.e. the company was able to generate profit per 1 PLN of sales – at the level of ca. 0.08 PLN. This may prove that the Rzeszów company is much more focused on maximally beneficial conclusion of sales transactions. It has an impact on the increase of the profit sum and, as a result, on the increase of the company's equity and capital position (De Franco, Kothari, Verdi, 2011).

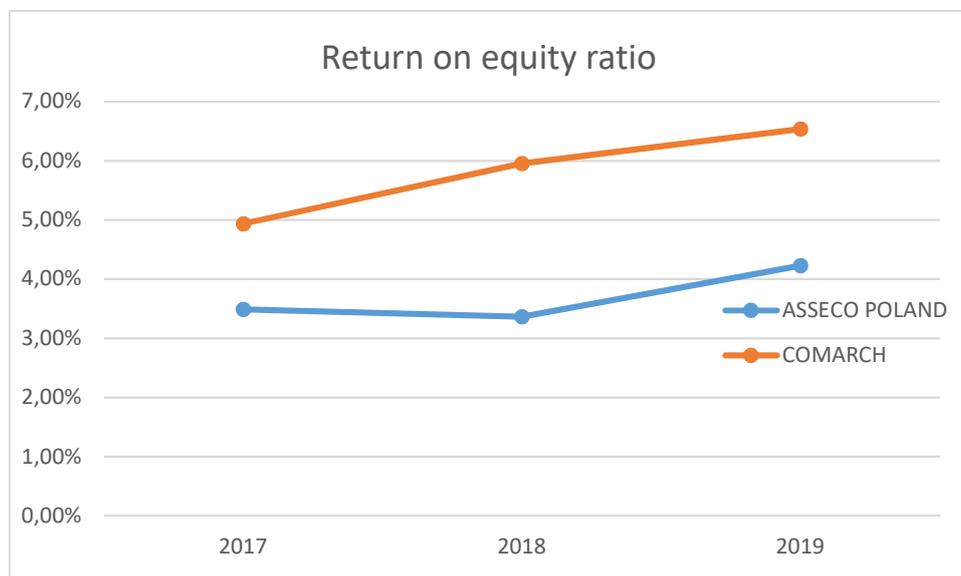


Figure 5. Comparison of return on equity ratios

Source: own elaboration based on financial statements of Asseco Poland and Comarch for 2017–2019.

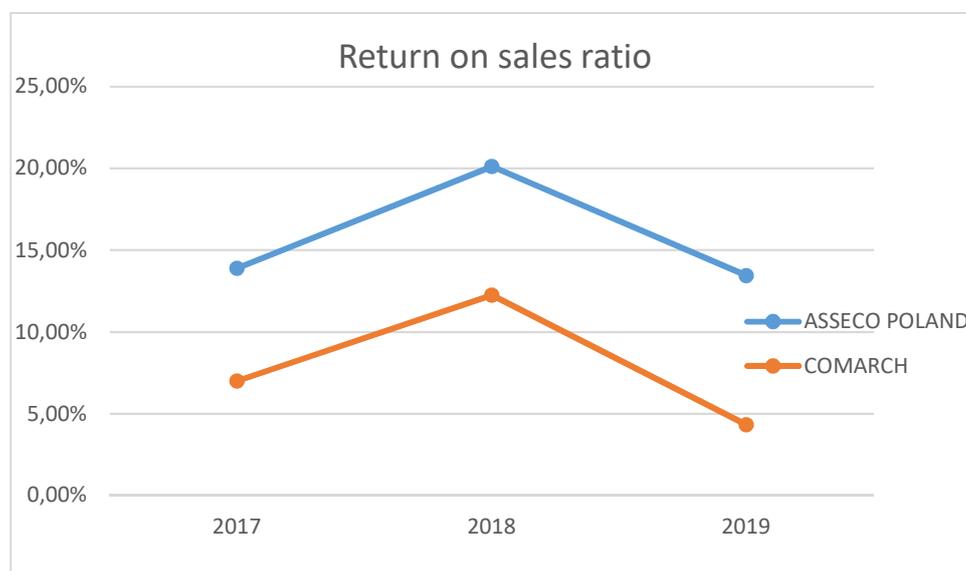


Figure 6. Comparison of return on sales ratios

Source: own elaboration based on financial statements of Asseco Poland and Comarch for 2017–2019.

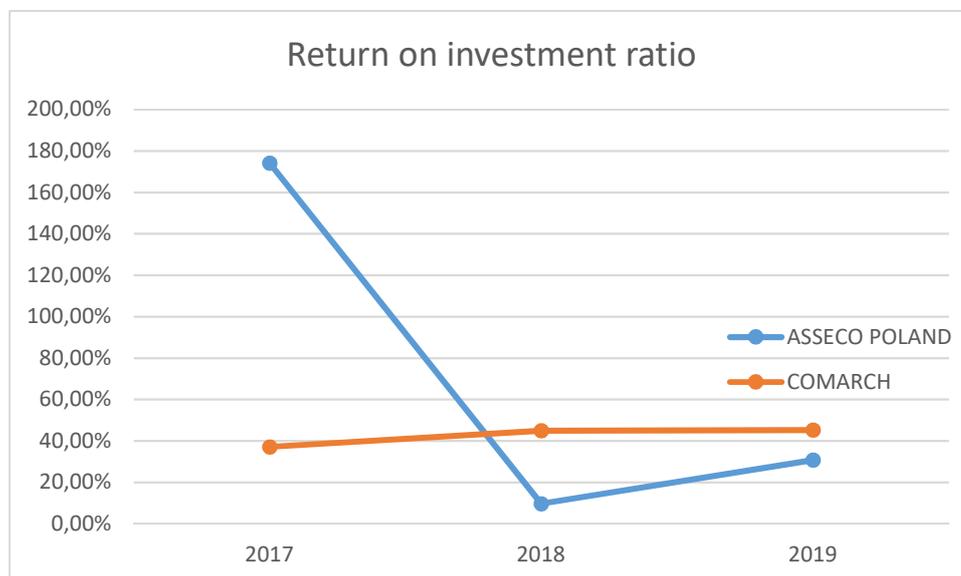


Figure 7. Comparison return on investment ratios

Source: own elaboration based on financial statements of Asseco Poland and Comarch for 2017–2019.

The return on investment ratio shows how profitable the investments (Vance, 2003) were over the analyzed years in the companies under analysis, that is, it informs how many PLN of profit one PLN invested allowed to generate. ROI indicator shows that in the first examined year Asseco showed much higher profitability of investment than Comarch (Gabrusewicz, 2005). Asseco realized the indicator at a very high level of 174%, which is due not to the huge profit but to the spending of small capital expenditures in that year, which (as the data in Figure 7 shows) were realized in the following year causing the indicator to drop to 9.75%. In 2017, the ROI was as high as 174.11%, influenced by the amount of cash invested in the amount of over 400 million. In that year, the company intensively expanded in foreign markets, which resulted in the achievement of 80% of sales. The Asseco Group also managed to effectively execute new acquisitions. Very important for Asseco were revenues from sales of proprietary software and services (Tokarski, Tokarski, Mosionek-Schweda, 2017; Lew, 2016; Lew et al., 2017), which amounted to PLN 6.2 billion (asseco.com) in 2017<sup>3</sup>. And in 2019, this ratio returned to 30.71%, which is lower than Comarch's ratio of 45.35% this year (asseco.pl; Financial statements of Asseco Poland).

Since 2017 it is Comarch that presents a stable value of the above indicator, in 2017 – 37.16%, in 2018 – 45.05%. It should be noted that the values of ROI in Comarch do not vary as much as in the case of Asseco, which may indicate a stable, more cautious investment policy.

<sup>3</sup> Data derived from the consolidated financial statements of Asseco Poland for 2017.

#### 4. ASSET STRUCTURES

The structure of current assets indicates a good financial and economic situation in both companies. On a positive note, the current assets of Comarch are increasing. An analysis of the current assets structure indicates that Asseco is in better shape. The company from Rzeszów holds much less inventory, and has more cash than Comarch. Asseco's cash stood at over 150,000 PLN in each of the years under review, and its share in current assets exceeded 35% (Report of the Management...). In turn, Comarch holds ca. 70 thousand in cash and its share in current assets is lower than in Asseco Poland (Campello et al., 2011). Asseco Poland holds much more fixed assets, while the share of current assets decreases. The asset structure of Asseco Poland should be assessed negatively because fixed assets constitute a substantial majority of its total assets. Their number, and at the same time their percentage share in total assets, increased over the analyzed years to over 91%. The value of fixed assets increased, accompanied by a downward trend in the amount of current assets. From the point of view of financial liquidity, fixed assets should constitute a smaller part or half of all assets, as it is more difficult to convert them into cash to repay the debt (Cornett et al., 2011; Disatnik, 2013). Both, the structure of liabilities and assets indicates that Asseco is developing more dynamically. The amount of assets held, including fixed assets, may indicate an aggressive development strategy of the company (Kreczmańska-Gigol, 2015; Lew et al., 2021) and in a long-term perspective building strong foundations of own fixed assets may be a promising development advantage for the Rzeszów-based company. This results from the adopted policy of building fixed assets and investing in modern and efficient hardware (analizy-prognozy.pl). In Comarch, it is noticeable that the value of current and non-current assets is at a similar level. An analysis of the structure of current assets shows that Comarch has managed to reduce the share of inventories in current assets (Comarch S.A. financial statements).

#### 5. STRUCTURE OF LIABILITIES

An analysis of the structure of liabilities indicates (Table 3) that in the analyzed period Asseco Poland financed its operations mostly with short-term credits. This is evidenced by the amount of short-term liabilities held and their share in total liabilities (Wypych, 2007). The number of short-term liabilities has been decreasing over the years – from over 278 thousand to less than 210 thousand. Together with the decreasing value of current liabilities, the number of long-term liabilities is also decreasing. It can be concluded that the company is financing its activities with the use of foreign capital to an increasingly smaller extent (Gąsiorkiewicz, 2011; Gibson, 2011).

This is because equity is a method of financing that does not incur financial expenses and Asseco Poland held equity of approximately PLN 5 million in 2017–2019. Over the analyzed years, we can see an increase in the share of equity in total liabilities, although the amount of equity is decreasing with a downward trend in the amount of debt capital (finanse21.pl). In Asseco Poland this percentage is higher than 90% in each of the analyzed years. In the nearest future the company should have no problems with maintaining its development strategy and keeping its liquidity (Gołębiowski, Taczała, 2005).

Table 3. Liabilities structure ratios of Asseco Poland SA

	2017		2018		2019	
	In thousand PLN	In %	In thousand PLN	In %	In thousand PLN	In %
	Liabilities structure ratios					
Long-term liabilities	183,8	3,3%	140,4	2,6%	137,2	2,6%
Short-term liabilities	278,5	5,1%	226,7	4,3%	206,1	3,9%
Equity	5 035,7	91,6%	4 949,8	93,1%	4 892,4	93,4%
Total liabilities	5 498,0	100%	5 316,9	100%	5 235,7	100%

Source: own elaboration based on Asseco Poland's 2017–2019 financial statements.

Comarch is characterized by a similar amount of long-term and short-term liabilities (Table 4). The share of current liabilities is higher than that of long-term liabilities, but their value is not high (Grzenkiewicz et al., 2017). A positive aspect here is also the amount of equity, which increases with each passing year. The percentage share of equity since 2017 has remained at a comparable level of 72–75% with a steadily increasing level of equity in the following years 2017–2019. Despite the increasing equity, its share in total liabilities shows a trend of a constant relationship.

Table 4. Comarch SA liabilities structure

	2017		2018		2019	
	In thousand PLN	In %	In thousand PLN	In %	In thousand PLN	In %
	Liabilities structure ratios					
Long-term liabilities	154,8	14%	120,9	10,9%	152,3	12,7%
Short-term liabilities	155,2	14%	157,1	14,1%	160,9	13,5%
Equity	797,0	72%	834,2	75%	881,5	73,8%
Total liabilities	1 107,0	100%	1 112,2	100%	1 194,7	100%

Source: own compilation based on Comarch S.A.'s 2017–2019 financial statements.

Both Comarch and Asseco Poland are in a good position in terms of the structure of their liabilities (Hamrol, 2013; Kowalak, 2011). Neither company is at risk of financial insolvency, as they have sufficient cash to settle their liabilities in due time. Moreover, both companies do not have too much debt capital. In the Authors' opinion, Asseco is in a slightly better position because it has much higher equity as well as the ability to obtain external capital and external sources of financing (Kowalska, 2013; Lee, 2009).

## 6. FINANCIAL POSITION OF ASSECO POLAND IN THE PANDEMIC PERIOD

In March 2020, a coronavirus pandemic was announced globally, which also affected the Polish economy. With the Polish government announcing a lockdown, Asseco Poland decided to work remotely. The company's authorities initially expected that there might be delays in the implementation of projects whose initial phases were to start in Q1 or Q2 2020<sup>4</sup>.

In its most recent financial statements, Asseco's Management Board assessed that the company's operations are not threatened, and that the company will not face any difficulties in meeting its orders or obligations for 12 months starting from 31 December 2020 until the end of 2021 (Kłós, 2021). Asseco Poland achieved satisfactory results after impairment testing of its assets due to the prevailing pandemic. No substantial risk of impairment of assets, including primarily goodwill, was identified. Furthermore, the statements show no significant change in the collection of receivables, which positively influences the calculation of expected losses on trade credits granted to business partners. Analyzing the reports published in 2021, it should be pointed out that the pandemic did not exert a significant influence on the company's operations. This is confirmed by the fact that Asseco Poland did not make a decision on taking advantage of the "anti-crisis shield" and the offered funds from PFR, nor did it apply for changing the dates of tax payments or make any adjustments to its leasing contracts<sup>5</sup> (wnp.pl).

The evidence indicating the company's dynamic exit from the pandemic period is the new project that the company has started to implement together with the National Cloud Operator. This project concerns the creation of a special purpose company called the National Medical Cloud Operator, in which the founding companies each have a 50% stake. The entity is tasked with implementing electronic medical records (EMR) in the cloud. It is to serve medical laboratories from April 2021, outpatient clinics and medical practices from May 2021, and hospitals from the second half of the year. A separate division of the company for this purpose will operate on the Google Cloud platform (bankier.pl).

Asseco has not noticed any significant changes in its financial results due to the crisis, but does not rule out that some negative effects may appear in the future. At the gala organized by Dziennik Gazeta Prawna, entitled "There is no future without entrepreneurship", President of Asseco Poland Adam Góral pointed out that he is concerned about the psychological condition of his employees, which has been affected by long-term remote work (Góral, 2021). He stressed that many of them are introverts and working in a team where they had contact with each other was certainly much more comfortable for them (Berenda, 2021).

In recent years, we can see the progressive process of globalization, which affects the increase in the level of competitiveness, as well as providing continuous technological development in the field of hardware, software, IT systems. These factors make the current conditions of doing business different from what it was a few years ago. Now the most important feature that an enterprise must meet in order to successfully run its business is the ability to quickly adapt to market conditions (Pomykalska, Pomykalski, 2017). For both large and smaller companies it is crucial to have IT solutions (itwiz.pl). IT has become an important part of the corporate architecture, as business units in order to improve the

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<sup>4</sup> Financial statements of Asseco Poland S.A. for the year 2019.

<sup>5</sup> Unofficial financial statements of Asseco Poland S.A. for the year 2020.

efficiency and effectiveness of business processes implement packages of IT systems (Miształ, 2018).

From 2012 until the outbreak of the pandemic, the IT market worldwide grew at an average annual rate of 3.4%, with the fastest growth characterized by sales of enterprise software (statista.com). The pandemic caused the IT market to develop at a much faster pace. It is indicated by quotations of the WIG-Informatyka index at the Warsaw Stock Exchange.

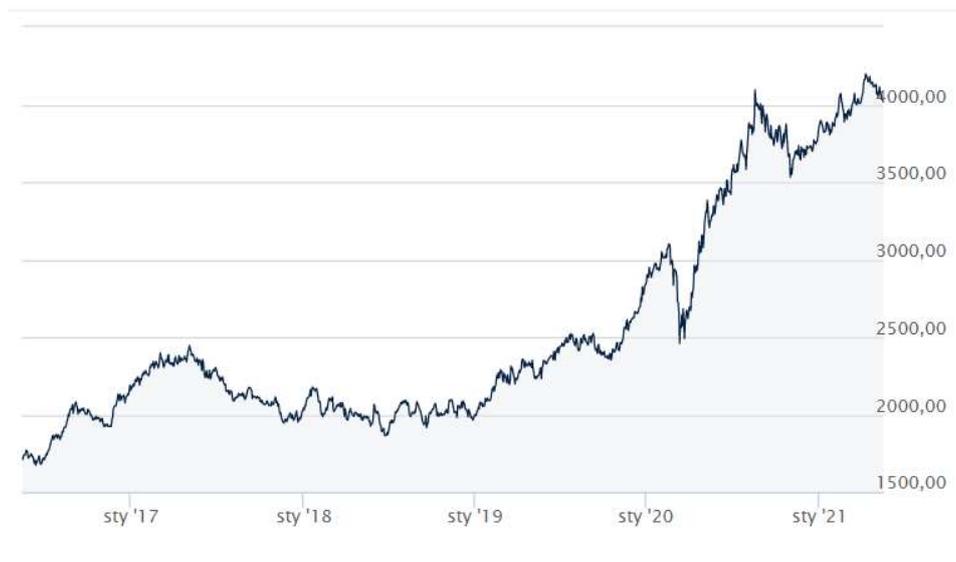


Figure 8. WIG-INFORMATYKA index portfolio over the period 2017–2021

Source: ([www.bankier.pl/inwestowanie/profile/quote.html?symbol=WIG-INFO](http://www.bankier.pl/inwestowanie/profile/quote.html?symbol=WIG-INFO)).

Figure 8 presents the quotations of the WIG-INFORMATYKA index on the Warsaw Stock Exchange over the period 2017–2021 (t) (e). It can be observed that the IT market has been in a bull market since January 2020. This allows us to conclude that the crisis caused by the COVID-19 pandemic did not affect the IT industry, but on the contrary, caused its development. In March 2020, the index price fell due to the announcement of the first lockdown in Poland, as it forced all companies to switch to remote working. However, since then the share price of IT companies has been increasing at a dynamic pace. The year 2020 showed that the global IT market was the least affected by the pandemic crisis. Predictions for future years are equally optimistic. Gartner predicts that global corporate spending on information technology in 2021 will increase by 6.2% compared to last year and will reach 3.9 trillion dollars (Gartner Report). Analysts are predicting particular growth in the software market, with forecasts indicating that enterprise software spending will grow 8.8% (\$506 billion) in 2021, up from a 2.4% decline last year. The growth rate is expected to be even stronger in 2022, when enterprise software spending will grow 10.2% to reach \$557 billion (marketingcharts.com).

Forecasts of the domestic IT market were also presented in a report prepared by Bank Pekao SA. Analysts emphasize in the report that the IT industry in Poland is characterized by relative immunity to the pandemic crisis. The authors of the report point out to the fact that the income dynamics was slowed down by almost a half, but they also point out to the fact that the industry recorded the smallest drops (Pekao Report).

Analysts of the report also point to opportunities for the development of the IT industry in Poland, such as: digital transformation of the economy, companies and citizens, caused and driven by the crisis, the fact of low saturation of IT services in the country, as well as, the emergence of new products and IT services that enable new opportunities for development and create market niches. The authors of the report consider the most important feature that enables the development of the industry to be the competitive advantages such as: high competence of the staff and organizational advantages while maintaining low costs (Sierpińska, Jachna, 2004; rp.pl; analizy-prognozy.pl).

The crisis caused by the pandemic significantly accelerated the progress of digital infrastructure. Specialists believe that if it were not for the pandemic, these changes would take much longer, even several years. Analysts predict a further increase in the pace of development and emphasize that the most dynamic development will be cloud infrastructure (u). They predict that by the end of 2021 – 80% of organizations will implement a mechanism to move to infrastructure and applications that are based on the cloud, at a rate twice as fast as they would have done without the crisis (idc.com).

To sum up, all the analysts agree that the IT industry is going to develop at an even faster pace. Taking into account the above-mentioned predictions as well as the financial results of Asseco Poland, we may conclude that the company will develop more and more dynamically, and thus generate higher and higher revenues (money.pl; computerworld.pl). The Group plans to incorporate other companies which will enable it to widen its customer base and expand its business worldwide (pl.asseco.com; rzeszowskiinfo.pl).

Asseco Poland is able to grow steadily, which was proved by the company's financial results during the pandemic. An industry-based study has shown that Asseco Poland is the largest Polish company selling software (biznesistyl.pl). E-learning training software to be used in high schools and universities such as eduPortal PRz used at Rzeszow University of Technology proved to be very useful during the pandemic. At present the Company has the largest market share in the WIG-INFORMATYKA stock exchange index; the results of economic and financial analysis carried out in this material suggest that there is a good chance Asseco Poland SA will maintain this position in the future.

## 7. CONCLUSION

Based on the conducted research on business activities and strategies of operations during the crisis caused by COVID-19 and achieved financial results, it can be concluded that both studied IT corporations Asseco Poland SA and Comarch SA were very involved in offering solutions to the IT market for application of software and online communication platforms in the Polish economy. This contributed to acceleration of the crisis-driven digital transformation of the economy, companies, offices, schools and universities. The most important features that enabled the development and good results of these companies can also be considered high competence of the staff and organizational advantages while maintaining low costs (Xu et al., 2014). Asseco demonstrated more stable financial

standing. This is manifested by strengthening of the capital position and active expansion into foreign markets.

Taking into account the achieved financial results, structure of assets and liabilities as well as forecasts for development of IT companies in Poland, one may conclude that Asseco Poland will develop more dynamically and earn higher revenues. The Asseco Group plans to incorporate other companies into its operations in order to extend the customer network and expand its business worldwide.

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## STRATEGIC COMMUNICATION IN THE FACE OF CONTEMPORARY THREATS TO THE INFORMATION ENVIRONMENT

Citizens' involvement in social life is essential to the functioning of civil society. This takes place when citizens are duly informed and involved in the activities of public institutions. To realize this, it is necessary to develop an extensive information policy that integrates a given ministry's strategic communication expectations. The aim of this article was to describe strategic communication in relation to the implementation of a systemic method of communication in the army together with its structures in the larger society, including allied countries. This description was carried out against the background of contemporary threats to the information environment. The following research problem was posed: How are the assumptions of strategic communication implemented against the background of contemporary threats to the information environment? Qualitative analysis was the research method used, and the technique used was the analysis of source documents.

**Keywords:** international security, strategic communication (StratCom), threats to the information environment.

### 1. INTRODUCTION

The process of managing the image of the armed forces is, on the one hand, strongly regulated by regulations and instructions, and on the other – free and devoid of detailed solutions due to changing political, military, economic, social and information conditions. The need to systematically inform the public about the activities of the armed forces was especially noticed during the conflict in Yugoslavia in 1992<sup>2</sup>. In turn, in the Polish armed forces it only happened in 2004. The image of the army in society, like many other public institutions, translates into for its smooth operation. A modern and professional army needs

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<sup>2</sup> The war in Yugoslavia was very well prepared in terms of propaganda. The aim of this campaign was to shape the belief that before the start of the NATO attack in Kosovo, there had been a humanitarian catastrophe - mass murder and expulsion of Albanians from the provinces, that the victims are Albanians and the perpetrators are Serbs. Military intervention to put an end to this catastrophe was to become the responsibility of aspiring states to recognize them as major human rights defenders. The media became involved in promoting this position, especially in the countries participating in this project.

high-class specialists. By sending such a message to the public, he has the opportunity to expand his area of searching for suitable candidates for the service. Another important element related to the activities of the military is cooperation between the military unit and entities in the environment. Mutual understanding is a guarantee of tolerance for both sides, and the basis of this tolerance is knowledge that today is obtained primarily from the mass media. Living in the information society, the social environment not only uses the benefits of technology for consumption or entertainment, but also perceives it as a source of information and knowledge about the surrounding world. Armed forces, using the potential of the mass media, must provide the public with answers to several basic questions: what are their tasks now? What direction are they going? What are the benefits of their functioning for society? These questions are answered through strategic communication. As noted by Ansgar Zerfass, Dejan Verčič, Howard Nothhaft and Kelly Page Werder.

Communication can play a distinctive role for the formulation, revision, presentation, execution, implementation, and operationalization of strategies. While there are many ways to investigate these research objects, strategic communication as a discipline takes the perspective of the focal organization/entity and its calculus to achieve specific goals by means of communication under conditions of limited resources and uncertainty (Zerfass, Verčič, Nothhaft, Werder, 2018).

In turn, Hallahan, Holtzhausen, van Ruler, Verčič and Sriramesh define strategic communication “as the deliberate use of communication by an organization in order to fulfill its mission” (Hallahan, Kirk, Holtzhausen, Derina, Ruler, Betteke, Verčič, Dejan, Sriramesh, Krishnamurthy, 2007). Necessary for the survival and lasting success of an entity. Strategic communication is a deliberate use of communication by an organization or other entity to conduct discussions of strategic importance to its goals (Zerfass, Verčič, Nothhaft, Werder, 2018).

In the military, as part of strategic communication activities, psychological operations (PSYOP), information operations (IO) and psychological warfare are used. They are examples of the deliberate use of communication by a government or military organization to fulfill its mission, and therefore have different understandings of the concept of strategic communication (Wallenius, Nilsson, 2019).

The research objective presented in this article was to characterize NATO's strategic communication, which consists in the implementation of a systemic method of communication between the army and its structures with the social environment in the allied countries against the background of contemporary threats to the information environment.

Therefore, an answer was sought to the following research problem: how are the assumptions of strategic communication implemented in NATO against the background of contemporary threats to the information environment?

They want to get an answer to a given research problem, a qualitative analysis was used with the use of the technique of source documents analysis. Therefore, for the purposes of the analysis, the characteristics of the strategic communication areas were made and the allied normative documents were reviewed, taking into account the contemporary requirements of the information environment.

## 2. CONTEMPORARY REQUIREMENTS OF THE INFORMATION ENVIRONMENT

When analyzing the information environment in the context of operations conducted in it by the armed forces, first of all, it is necessary to identify the threats present in it. This approach allows for the definition of needs in relation to the prevention, counteraction and neutralization mechanisms. At the same time, it means the necessity to define tasks for individual military capabilities and communication functions in times of peace, crisis and war, as part of everyday functioning and as part of operations (Decision No. 478 / MON of 8 December 2014)<sup>3</sup>.

The armed forces are an element of every state, therefore all actions aimed at undermining the decisions taken as part of managing defense ministries, disrupting the decision-making process, weakening the image and competences of top-level commanders, or negating processes aimed at modernizing military equipment, have an indirect impact on the functioning and security countries. Therefore, it is important to understand the functioning of the information environment and the factors surrounding it, influencing the proper risk analysis.

An important group, important from the perspective of this analysis, is the area of direct information threats. The most important of them include:

1. image threats,
2. cyber threats,
3. military threats (NATO Military Policy On Strategic Communications, SH/SAG STC/AM/17-318278, 2017).

## 3. IMAGE THREATS

Image threats may result in a reduction or complete loss of credibility of the activities undertaken by the ministry (Strategia Bezpieczeństwa Narodowego Rzeczypospolitej Polskiej, 2014). Even a small loss of credibility may cause difficulties in the implementation of the ministry's narrative prepared in accordance with the strategic communication (StratCom) guidelines, which may significantly reduce the effectiveness of the communication process. Image threats may result from own activities, neutral environments, as well as hostile to the activities undertaken by the ministry. Accidental risks, i.e. errors resulting from insufficient coordination or inappropriate use of communication skills, are by far the easiest to eliminate. The solution seems to be the implementation of the strategic communication guidelines approved for implementation and the proper coordination of the activities of communication capabilities and tools as well as military actions having an indirect impact on the cognitive and information sphere of the information environment. A much more dangerous scenario seems to be an event when the intended operational activities will have a negative communication effect (e.g. accidental civilian casualties as a result of an operation). Therefore, building the awareness of commanders of even the lowest rank (platoon, company, battalion) in terms of strategic

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<sup>3</sup> Communication skills and functions are defined in point 3. Decision No. 478/MON of 8 December 2014, areas divided in terms of the nature of the activity, where the function is only a staff process, and the capabilities are tools that can have an impact. It is a division adopted under NATO, resulting from its policies, military policies and doctrines. Decision 478 / MON lists one function – information operations – and three abilities – public diplomacy, social communication and psychological operations.

communication capabilities seems to be a desirable solution. Realizing the importance of the actions taken in the initial stage of staff training can definitely contribute to increasing the effectiveness of strategic communication. The understanding by the command level of the consequences of the actions taken, their impact on the information environment, may significantly affect the level of implementation of tasks within the armed forces, and, consequently, the perception of the Ministry of Defense in accordance with the political and military goals set in StratCom (NATO Military Policy On Strategic Communications, SH/SAG STC/AM/17-318278, 2017).

Neutral threats, e.g. in the form of a natural disaster, may also be an element used in the implementation of image-related strategic communication tasks. Therefore, the use of engineering troops or general military subunits in this particular case can definitely have a positive impact on the process of perceiving the ministry. Skilful use of soldiers as an element of strategic communication (communicated through actions taken) may affect the positive perception of not only the public opinion of the region affected by the natural disaster, but also show the public the willingness of the ministry to help the victims. Information noise can also be included in the category of neutral threats. Nowadays, it results from the universality and availability of all information channels in the space of the information dimension of the environment. Messages are created on an ongoing basis, distorted (intentionally or completely unconsciously), and then distributed for the purposes of communication with target groups. It often happened that the mainstream media, not knowing the proper conceptual apparatus, described the changes taking place in the armed forces. Both the structural and hardware changes have their supporters and opponents, so using the right wording is extremely important. Therefore, it seems important to be absolutely transparent towards journalists, and at the same time to educate them in the use of the appropriate conceptual apparatus during the work on the material for publication (NATO Military Policy On Strategic Communications, SH/SAG STC/AM/17-318278, 2017).

Image-related threats resulting from the actions of the opponent (potential opponent) constitute the broadest category. They concern deliberate communication activities, the intended effect of which is to reduce the credibility of the armed forces. Among hostile actions of this type, one should distinguish, first of all, propaganda and disinformation aimed at influencing political leaders in order to disrupt the decision-making process, influencing military commanders of various ranks in order to overpower the command system of armed forces, or influencing the society or social groups in the media to undermine the decision-making process. the credibility of the leaders or disrupting the functioning for the benefit of society. Therefore, it seems important to conduct analytical activities in the scope of defining the directions of threats and developing schemes to counteract them. It should also be borne in mind that many state entities, but also extremist groups (including those that use terrorist activities as an element of combat), currently operate within the information environment. Therefore, it is important that a potential threat (e.g. political, military, economic, social, information) is diagnosed at an early stage, which may help minimize the effects of a planned attack (NATO Strategic Communications Handbook, SH/STC/15-309090, 2015).

The above considerations in terms of image threats prove that not all threats may come from propaganda or disinformation activities carried out by hostile entities. The factor connecting these threats is the cognitive dimension of the information environment, where the activities undertaken by the ministry are discussed within various demographic groups.

As a result, judgments of decisions (actions) made by the ministry are formed, which in turn are the source of information in the publicly available space at a later stage. Of course, the information would not reach a potential recipient without the physical sphere, i.e. a network of tools with the help of which information is disseminated among selected audiences (e.g. press, radio, TV, social media, or even a peer-to-peer network within which information is reproduced).

The level of trust in the indicated institutions is a reflection of the image-building activities undertaken by national ministries. And so, according to CBOS, by September 2020, there had been fewer positive opinions about the functioning of the army. Currently, nearly seven out of ten respondents speak of it approvingly (69%, since March a decrease by 3 percentage points), while it is criticized by every twentieth (5%). Objections to the activities of the army are most often expressed by respondents who identify themselves with the left, who are not religiously engaged, as well as the youngest respondents (Komunikat z badań, 2020).

Table 1. Assessment of the military activity in the years 2011–2020

Oceny działalności wojska	Wskazania respondentów według terminów badań																		Zmiany III – IX '20		
	2011		2012		2013		2014		2015		2016		2017		2018		2019			2020	
	IX	III	IX	III	IX	III	IX	III	IX	III	IX	III	IX	III	IX	III	IX	III		IX	
	w procentach																				
Dobra	65	66	69	55	66	66	67	62	69	66	69	60	65	59	64	73	74	72	69	-3	
Zła	9	9	6	10	4	8	7	8	4	6	6	12	11	8	7	10	7	5	5	0	
Trudno powiedzieć	26	25	25	35	30	26	26	30	27	28	25	28	24	33	29	17	19	23	26	+3	

Source: (CBOS nr 121/2020).

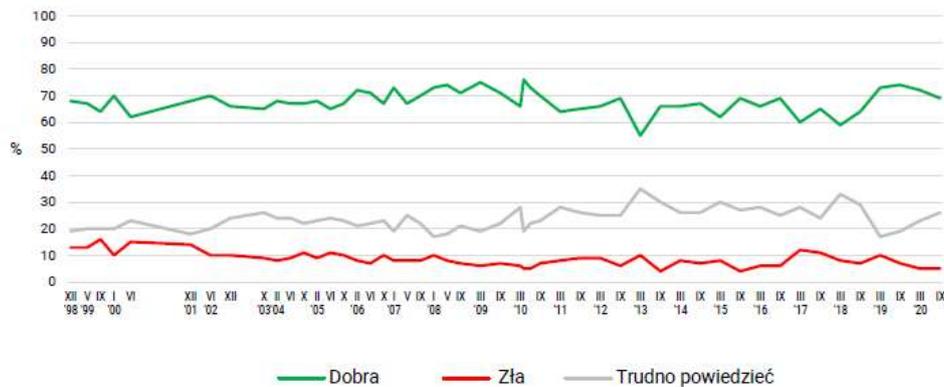


Figure 1. Assessment. Assessment of the military activity in the years 2011–2020

Source: (CBOS nr 121/2020).

In another CBOS study on the attitude towards various institutions and organizations of public life, the military (83%) and NATO (80%) also enjoy high public trust among the 20 entities mentioned.

Table 2. Trust in the social sphere in 2020 r.

Instytucje	Czy, ogólnie rzecz biorąc, ma Pan(i) zaufanie czy też nie ma Pan(i) zaufania do wymienionych instytucji?						
	Zdecydowanie mam zaufanie	Raczej mam zaufanie	Zaufanie – ogółem	Raczej nie mam zaufania	Zdecydowanie nie mam zaufania	Brak zaufania – ogółem	Trudno powiedzieć
	w procentach						
WOŚP	48	36	84	7	5	12	4
Wojsko	28	55	83	5	3	8	9
NATO	20	60	80	5	1	6	14
Caritas	24	54	78	8	5	13	9
PCK	20	57	77	6	2	8	15
Władze lokalne	12	62	74	13	4	17	9
Unia Europejska	14	59	73	12	5	17	10
ONZ	16	56	72	7	2	9	19
Policja	11	60	71	16	5	21	8
Rzecznik Praw Obywatelskich	17	47	64	9	3	12	24
Kościół rzymskokatolicki	22	42	64	21	11	32	4
Urzednicy administracji publicznej	4	57	61	18	5	23	16
Prezydent	26	32	58	16	20	36	6
Rząd	13	33	46	24	21	45	9
Sądy	3	39	42	33	12	45	13
Trybunał Konstytucyjny	7	33	40	21	16	37	23
Związki zawodowe	3	31	34	20	7	27	39
Sejm i Senat	2	31	33	36	9	45	22
Media	2	30	32	37	18	55	13
Partie polityczne	1	23	24	41	15	56	20

Source: (CBOS nr 43/2020).

Compared to previous measurements, NATO gained public trust (an increase from 62% to 80% compared to 2016)<sup>4</sup> and the military (from 79% to 83%) (Komunikat z badań „Zaufanie społeczne”, nr 43/2020).

<sup>4</sup> It is worth noting that the level of trust in NATO and the United Nations is the highest among those recorded so far.

Table 3. Trust in the social sphere in 2020 r.

Instytucje	Czy, ogólnie rzecz biorąc, ma Pan(i) zaufanie do wymienionych instytucji?																													
	I 2002			I 2004			I 2006			I 2008			I 2010			I 2012			I 2016			II 2018			II 2020					
	Tak	Nie	Tp	Tak	Nie	Tp	Tak	Nie	Tp	Tak	Nie	Tp	Tak	Nie	Tp	Tak	Nie	Tp	Tak	Nie	Tp	Tak	Nie	Tp	Tak	Nie	Tp			
	w procentach																													
Wielka Orkiestra Świątecznej Pomocy	89	8	3	86	9	5	87	9	4	85	6	9	88	8	4	89	7	4	85	10	5	-	-	-	-	-	-	84	12	4
Wojsko	76	16	8	76	16	8	76	17	7	84	10	6	76	13	11	74	15	11	79	10	11	-	-	-	-	-	-	83	8	9
NATO	63	18	19	59	21	20	63	19	18	68	11	21	59	20	21	57	20	23	62	17	21	-	-	-	-	-	-	80	6	14
Caritas	85	9	6	84	10	7	83	10	7	80	10	10	82	12	6	80	13	7	83	11	6	-	-	-	-	-	-	78	13	9
PCK	85	6	9	82	8	10	83	9	8	79	7	14	78	10	12	81	10	10	79	10	11	-	-	-	-	-	-	77	8	15
Unia Europejska	49	30	21	46	34	19	62	24	14	73	12	15	60	23	17	58	26	16	56	27	17	-	-	-	53	32	16	73	17	10
ONZ	63	15	21	62	16	22	65	17	18	69	9	22	60	18	22	57	17	26	57	17	26	-	-	-	-	-	-	72	9	19
Policja	62	30	8	56	36	8	59	34	7	75	19	6	63	29	8	65	28	7	65	27	8	-	-	-	-	-	-	71	21	8
Kościół rzymskokatolicki	76	21	3	75	21	4	81	17	2	79	17	4	78	18	4	69	26	5	70	24	6	-	-	-	-	-	-	64	32	4
Urzednicy administracji publicznej	31	52	17	33	54	14	38	50	12	53	33	14	42	47	11	45	41	14	50	33	17	54	32	14	61	23	16			
Prezydent	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	60	32	8	58	36	6			
Rząd	42	45	13	21	68	11	47	40	13	56	32	13	31	60	9	39	49	12	38	50	12	44	46	10	46	45	9			
Sądy	40	49	11	31	60	8	39	51	10	59	29	12	44	45	11	45	44	11	45	42	13	33	50	18	42	45	13			
Trybunał Konstytucyjny																			37	36	27	24	50	26	40	37	23			
Związki zawodowe	22	41	37	31	40	30	32	37	31	39	27	34	26	40	34	29	36	35	26	39	35	-	-	-	34	27	39			
Sejm i Senat	28	54	18	21	67	12	30	54	16	39	44	17	21	68	11	29	55	15	30	54	16	34	53	13	33	45	22			
Partie polityczne	15	65	19	13	72	15	24	61	15	28	54	18	14	76	10	20	65	15	20	65	15	20	65	15	20	65	15			
Władze lokalne miasta/gminy	43	41	17	53	34	13	56	33	11	68	23	9	55	34	11	58	31	11	64	23	13	65	23	12	74	17	9			
Rzecznik Praw Obywatelskich	-	-	-	-	-	-	69	13	18	62	15	24	55	21	24	60	16	24	63	12	25	54	14	32	64	12	24			

\* W tabeli połączone odsetki odpowiedzi zdecydowanie mam zaufanie i raczej mam zaufanie oraz zdecydowanie nie mam zaufania i raczej nie mam zaufania. Na szarym tle zaznaczono odsetki wskazujące na przewagę deklaracji wyrażających zaufanie lub nieufność

Source: (CBOS nr 43/2020).

The strategic communication tool used against image threats are the activities of PSYOP, which, as Claes Wallenius and Sofia Nilsson write

troops by sending various types of demoralizing messages via leaflets. A further purpose directed towards specific and distinct groups is to influence or disrupt an opponent's decision-making processes. Related to this, is the concept of reflexive control, used primarily in the Russian military science theories. A third purpose is to influence public opinion in both domestic and foreign populations through a certain form of propaganda. In addition, the development in the Middle East has shown a new pattern of psychological terror aimed at intimidating opponents by posting brutally violent acts on the Internet (Wallenius, Nilsson, 2019).

#### 4. CYBER THREATS

Cyber threats are usually equated with the actions of the enemy (potential opponent) on infrastructure elements (e.g. networks, workstations, servers, radio, television, etc.) serving as channels of communication with the public or directly on the critical infrastructure of the armed forces in order to disrupt the process. decision making (Strategia Bezpieczeństwa Narodowego Rzeczypospolitej Polskiej, 2014).

Disruption of communication channels reduces the effectiveness of the activities carried out. It may be carried out with the task of temporary or permanent damage to the network, ICT systems or devices through which communication is carried out both inside and outside the ministry. Effective infrastructure security must take into account maintaining appropriate security standards at all levels of command.

Therefore, an important element in the strategic communication system is the protection and defense of the state's cyber infrastructure. In addition, in the event of a cybernetic event,

when an external deliberate activity causes information chaos, there is also a probability of interference in the form of information noise. This can translate into a temporary lack of a coherent message, which is crucial in the case of StratCom. Therefore, in addition to the protection of sensitive infrastructure, attention should be paid to the knowledge of the current lines of narrative of the Ministry of Defense, including topics to be emphasized / avoided as part of conducting activities (including communication) in accordance with the competences held (NATO Military Policy On Strategic Communications, SH/SAG STC/AM/17-318278, 2017).

The most common goal of activities in cyberspace is to disrupt the decision-making process of an institution. If there is no unanimity in making a decision, or if it is not possible to send the task to be carried out by subordinate elements, there may be decision chaos, which in turn may contribute to an image problem. In addition, a case not related to the chain of command but with the effect of disrupting official channels of communication with the public as part of wider strategic communication, i.e. hijacking a social profile (e.g. Twitter, Facebook, etc.). The control over the electronic media taken over may both negatively affect the image of the institution, but also become a tool for the manipulation of an entity hostile to the ministry. In addition, in the discussed case, there is a risk of stealing sensitive data remaining within the ICT systems, which can be used to impersonate these persons. One must take into account the likelihood of information warfare activities aimed at using the obtained data to undermine the competence of high-ranking government officials.

A tool that has many advantages but also creates many threats are social media, i.e. channels for direct communication, expressing thoughts and judgments. Protecting yourself in the event of hostile influence, the use of social engineering or social engineering is very difficult, but not impossible. Users must be aware of the threats resulting from disinformation and propaganda activities by entities hostile to actions taken at the state level, including the level of the Ministry of Defense.

An important problem in cyber threats is the attribution of the attack. In the twenty-first century, there are many techniques and tools supporting the process of hiding the sources of devices indicating the place from which the attack was made. It should be taken into account that as part of the arms race, a potential enemy will try to direct his actions to another area in order to mask operational ones (e.g. using a global network of connections, a network of nodes allowing anonymous access to resources, impersonating public figures, e.t.c.) (NATO Military Policy On Strategic Communications, SH/SAG STC/AM/17-318278, 2017).

Research in the field of cyber network security is undertaken by numerous research centers, however, as noted by Jha, A.V., Appasani, B., Ghazali, A.N.

according to the Scopus database, the statistics for the year-wise research articles published in the context of the CPS cyber networks are illustrated in Fig. 1. It can be observed that research has been focused on addressing the security and safety issues in CPS. However, not much research has been found on the reliability of the cyber networks (Jha, Appasani, Ghazali, Pattanayak, Gurjar, Kabalci, Mohanta, 2021).

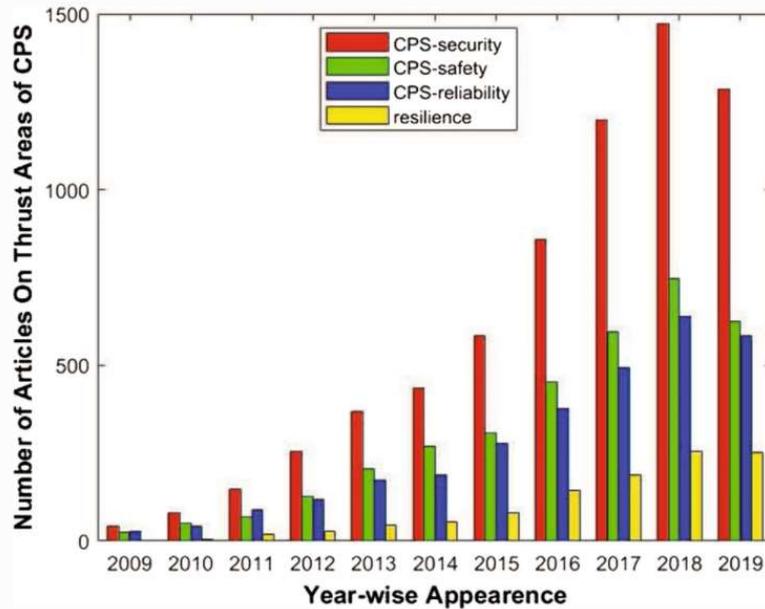


Figure 2. Publication statistics on cyber networks

Source: (Appasani, Ghazali, Pattanayak, Gurjar, Kabalci, Mohanta, 2021).

## 5. MILITARY THREATS

Military threats are a category of threats to the information environment that occur in wartime or in the course of an operation (Strategia Bezpieczeństwa Narodowego Rzeczypospolitej Polskiej, Warszawa 2014). The main goal of this type of threat is to disrupt the decision-making process of the operation commander or commanders subordinate to him, as well as lowering the morale of troops and the will to fight. The main method of operation is to sabotage information, communication and reconnaissance systems. In addition, one should take into account the direct and indirect destruction of resources through a lethal effect on the technical elements of the command and communication system, as well as attempts to overpower the command and control system of subordinate troops. It should also be understood that actions consisting in destroying, overpowering, harassing or demolishing will carry a specific message that will affect not only the physical dimension of the information environment. The use of conventional forces, the destruction of state infrastructure, or terrorist attacks carried out by ideological fanatics will carry a message that will also have a significant impact on the cognitive dimension of the information environment. A society exposed to direct attacks will be subject to psychological pressure, which in turn may have an impact on reevaluating personal goals as well as expressing opinions and concerns about the competence and ability of forces and means to defend themselves (NATO Military Policy On Strategic Communications, SH/SAG STC/AM/17-318278, 2017).

There is a relationship between communication technology and political conflicts and violence. Nils B Weidmann writes that

there are different pathways through which this can happen: technology can facilitate collective action, but at the same time give governments the opportunity to censor content and gather intelligence about dissidents. Also, audience effects can be introduced by the rich and instant transmission of information from conflict regions (Weidmann, 2015).

A special case of war threats in the information environment are the so-called phase zero, i.e. events occurring when the full spectrum of communication activities resulting from legal and ethical limitations regarding the use of forces and means of the destruction system in peacetime cannot be used. We can deal with such a situation when the opponent carries out offensive communication activities already in peacetime, with the intention of weakening the state's capabilities in the field of public diplomacy, the implementation of tasks by ministries, including the implementation of military strategic communication tasks. The threats may include attempts to undermine the legitimacy of the actions taken, discredit forces and resources within the national defense system, impersonating state officials, conducting disinformation and propaganda activities, as well as manipulating information (NATO Strategic Communications Handbook, SH/STC/15-309090, 2015).

As noted by Jha, A.V., Appasani, B., Ghazali, A.N.

another important challenge in this direction is the integration of traditional information technology (IT) systems with operational technology (OT) systems. OT systems differ from traditional IT systems with respect to the target, purpose, computing components, communication technologies, and interfaces as well as ownership and management (Jha, Appasani, Ghazali, Pattanayak, Gurjar, Kabalci, Mohanta, 2021).

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## **USING SUSTAINABLE LIVELIHOOD APPROACH TO ANALYZE THE IMPACT OF COVID-19 ON THE SOUTH AFRICAN RURAL AGRICULTURAL MARKETS**

The coronavirus pandemic (COVID-19) has disrupted the operation of many economic activities around the world. Informal economic activities including rural agricultural markets were mostly affected by the impact of COVID-19 as those in the rural areas they lost access to urban markets. This study researched the impact of COVID-19 on the South African rural agricultural markets, using the Sustainable Livelihood Approach (SLA) as a primary theory. The study relied on secondary data which was collected by a case study and analyzed using a textual analysis. The key findings revealed that rural agricultural markets have been recognized as the main contributing informal activity to the South African economy. It showed that the COVID-19 pandemic disrupted these economic activities as the government introduced strict lockdown regulations to maintain social distancing and avoid the spread of the pandemic. The South African government must, therefore, implement a regulatory framework that will formalize the operation of informal traders in rural agricultural markets.

**Keywords:** Agricultural traders, COVID-19, Informal Traders, Rural Agricultural Market, Sustainable Livelihood Approach.

### **1. INTRODUCTION**

The impact of the coronavirus<sup>3</sup> (COVID-19) pandemic has shown to be a threat to the socio-economic development of countries across the global world. This crisis has placed informal traders under a vulnerability context as far as economic and the labour market is concerned. There are already growing reports on the economic losses faced by workers engaging in certain occupations due to lack of access to markets, reduced demand and the loss of mobility of people and goods. The informality nature of the rural agricultural market in South Africa has invited a significant need to understand the extent to which this economic activity has been impacted by COVID-19. This is because of the related

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<sup>3</sup> In this article, the word coronavirus will be used interchangeably with covid-19.

assumptions that assumes that workers from the informal sector were likely to lose their jobs and face extreme poverty and food insecurity as the COVID-19 intensifies across large informal economies (Shaikh, 2020).

Kiaga (2020) is of the view that the rural agricultural market and other informal activities already experience loss of income, which will lead to migration of people between rural-urban areas and this may possibly spread the COVID-19 in rural areas. The COVID-19 pandemic is mostly expected to affect small-scale farmers, small food retailers, street vendors, domestic workers and small food processing units as they lose access to urban markets. These aforementioned informal activities, according to Shaikh (2020) make the most contribution to the economy in the region, however, they are excluded from the legal and contractual protections of formal workers. The majority of these informal traders are from disadvantaged communities, so if information about COVID-19 is floating on social media circles, they struggle to access it as a result of lack of technology. It is for this reason that they are lacking information about the virus, its seriousness, the myths around it and most importantly its prevention techniques.

It is for this reason that this current article seeks to analyse the impact of COVID-19 on the South African rural agricultural market by using Sustainable Livelihood Approach (SLA) as a primary theory. The SLA is used because it allows rural people to be involved in making their livelihoods with the aim of promoting economic, social and environmental development. The critical aspect of the findings, therefore, reveals that the capital assets (human, physical and social capital) have received a hard hit from the COVID-19 in South Africa. Their disruption has come because of the strict regulations of the lockdown, which was introduced by the government in early March 2020 as a way of maintaining social distance among people in order to avoid the spread of the virus.

## **2. UNDERSTANDING THE CONTEXT OF RURAL AGRICULTURE MARKET IN SOUTH AFRICA**

Agriculture is recognised as the backbone of the economy in many developing countries and South Africa in particular as it serves as a major source of employment and Gross National Product (GDP). While the agricultural market is understood as a lucrative channel towards contributing to the sustainable livelihood of rural communities. This is because the agricultural market plays an important role in food distribution and improving rural economies as it forms the central market whereby agricultural products are sold (Mbatha, Nojiyeza and Mdiniso, 2021). These agricultural products include freshly processed crops, fish, dairy product and white and red meat (Marocchino 2009). The sad reality behind the South African rural agricultural market is that its trade is mostly associated with the informal economy, which is discussed in the subsequent section.

### **2.1. The Concept of Informality in the Rural Agricultural Market**

The concept of informality is usually used in distinguishing labour market across the world of million economic sections which are operating and where the majority of workers are chasing their livelihoods in informality conditions (ILO, 2020). In this context, the concept of informality is employed to define the type of workers and activities based on their state of operation, which is outside the modern economy and outside of the legal and regulatory framework (see Loayza, 2019). It is very important to indicate that rural agricultural market is playing a measurable contribution to the informal economy in most

developing countries. Rural Agricultural Market is associated with the concept of informality based on the reason that its nature of work is featured by unhealthy and unsafe working conditions, small workplaces, unproductivity, low level of skills, and poor access to information, technology, training and finance. According to Rogan (2018), workers in the rural agricultural market are not well recognised, protected or regulated under social protection and labour legislation. This is because the informality nature of rural agricultural market consists of families or private households who are not protected by any job security. This, as a result, indicates that the majority of workers in this livelihood strategy are self-employed and usually acting as street vendors or traders. However, Rogan (2018) further depicts that these workers are not paying Value-Added Tax (VAT) or taxes and they are struggling to employ others since they are not registered. It is, however, well acknowledged that even though the rural agricultural market is mostly operating as an informal economy but it plays an important role in terms of serving a social purpose and regarded as the main source of income for rural people to make their living sustainable.

## **2.2. Agricultural Retail Market in Rural Areas**

Rural agriculture market also involves the availability of retail market or location used by rural farmers, agricultural producers and customers as their gathering point for the purpose of trading (selling, buying and supplying) of goods. Marocchino (2009) points out that the high rate of informality in the rural agricultural market is causing a challenge on the working conditions of the labour force in the retail market. Tracey-White (2003) recognises the significance of having effective marketing infrastructure towards minimising post-harvest losses and to reduce health risks in the rural retail market. This is because the efficiency in agricultural retail market is expected to play a crucial role in food security, income generation and developing strong linkages with respect to the rural market. Reardon, Timmer and Berdegúe (2004) bring forward as a suggestion that the planners of the rural market are expected to come up with proper ideas in designing market that addresses both economic and social need of rural people. In addition, it is also very important to come up with a rural market that will be easily managed, maintained and operated by rural farmers. The essentialness of effective market regulations in the rural agricultural sector is well recognised and needed. These regulations must enforce revenue collection activities and hygiene rules inside a market. It is assumed in the context of this study that the poor quality of these regulations has negatively contributed to the sustainable livelihood of rural farmers and traders during the spread of coronavirus across the global world. It is for this reason that this particular study seeks to analyse the impact of COVID-19 on the South African rural agricultural market through the use of SLA.

## **3. SUSTAINABLE LIVELIHOOD APPROACH AS A THEORY**

The impact of COVID-19 to the sustainable livelihood of people across the globe is a current burning issue of which it requires massive and robust investigation. The present study recognises rural spatiality as the most part of the world that is suffering from the consequence of the COVID-19 as far as making the effectiveness of their livelihood is concerned. The SLA is used as a primary theory to analyse the impact of COVID-19 on the rural agricultural market in South Africa. Therefore, this is a very relevant theory that provides a proper explanation and analysis of the situation of the rural agricultural market during the hard times of COVID-19. The strength of SLA in the context of this study is that

it allows rural people to be involved in making their livelihoods with the aim of promoting economic, social and environmental development. Malemela & Yingi (2016) argues that this theory can play an important role in planning activities of development and help to analyse the contribution of existing activities to the livelihood of rural people. Nevertheless, this approach was introduced with the intention to reduce the issues of poverty by promoting economic development activities.

Petersen, Michelle, & Pedersen (2010); Malemela & Yingi (2016) argue that SLA can be employed in studies that anticipate dealing with issues of poverty by establishing economic activities including rural agricultural market. It further contributes to integrating the resources and market places as a way of improving rural livelihood. The framework for SLA, according to Ferguson (2012) also aim at acknowledging the strengths, capital assets, livelihood activities and opportunities that belong to rural communities and determines factors that shape those livelihoods. As far as the issue of the COVID-19 pandemic is concerned, the SLA helped to comprehend the set of ideologies behind the trading of farmers and other agricultural traders towards maintaining their livelihood through the rural agricultural market during the hard times COVID-19 pandemic. The authors contextualised the rural agricultural market as an important livelihood strategy for rural people to make their livings during the incidence of COVID-19 pandemic.

#### **4. METHODS AND MATERIALS**

The case study has been used to collect secondary data that is related to the COVID-19 pandemic, rural agricultural market and SLA. The dependence of this study on the secondary data aimed at collecting important information that has been collected by others through the use of primary research methods. According to Ponsignon, Durrieu & Bouzdine-Chameeva (2017), a case study is a crucial tool in collecting information from various sources such as the officially published papers, technical reports, and documentation of data collection methods and procedures. These online sources, in the context of this study, played an important role in providing accurate information (Baxter, & Jack 2008) on the impact of COVID-19 in the rural agricultural market. This data collection instrument assisted the authors to employ qualitative data to explain the process and results of the phenomenon through the full reform and analysis of cases that are under investigation. These authors, therefore, adopted textual analysis as an instrument to analyse collected data. The textual analysis assisted the authors to critically analyse the relevant reviewed literature.

#### **5. RESULTS AND DISCUSSIONS**

The rural agricultural market is the most economic activity that is being undertaken by South African communities as a way to improve their livelihood. This stems from the point that rural people depend more on trading agricultural product and it is where they are able to make decisions regarding the sustainable livelihood of their respective families. The main analysis and discussion of this study results are based on the basic elements of the Sustainable Livelihood Framework, which includes vulnerability context, capital assets and availability of regulation to guide livelihood strategies.

### **5.1. Rural agricultural market on the vulnerability context caused by COVID-19**

The result depicts the COVID-19 pandemic as one of those vulnerability contexts faced by rural people who are involved in the agricultural market to pursue their livelihood. Fishers (2002) argue that vulnerable context in SLA is recognised where people are suffering from the various risk of external changes, which also results in negative impact as people attempt to improve their living. The impact of COVID-19 has shown to be a threat to rural agricultural market as it caused a disruption in the value chain and market for agriculture. This is because both the agricultural market and value chain are recognised as the most essential components that affect rural livelihood. In this point, Food and Agriculture Organization (2020) argue that COVID-19 has placed small farmers, agricultural traders and agribusinesses into a vulnerability context due to the introduction of movement restrictions and lockdown, which resulted to their inability to process their agricultural product and access the market. Pafumi (2020) recognise that the vulnerability context caused by COVID-19 results in the declining demand of the agricultural product and lower prices, which negatively leads to the loss of income and sensitive waste of food. This is due to the point that the majority of workers and traders are struggling to generate income as there are being compelled by the strict regulations of lockdown to stay at their respective households as a way of reducing the spread of COVID-19 (Human Sciences Research Council, 2020).

Maintaining social distancing by staying at home is a most contributing factor to the vulnerability contexts of the rural agricultural market, mostly affecting small farmers, agricultural traders, customers and agribusinesses as far as the spread of COVID-19 is concerned. Lazarte-Hoyle (2017) maintain that vulnerability context can possibly happen from human actions and some can happen at an individual level, which may be related to the health issues or social risk. The study results further indicates that small farmers, agricultural traders and agribusinesses have complied with the regulations of coronavirus during the earlier stages of lockdown (level five and four) as they were scared to be infected by the spread of COVID-19. This adverse events as argued by Food and Agriculture Organization (2002) has frustrated rural people as they have suffered from hunger and food insecurity.

### **5.2. Impact of COVID-19 on the Capital assets for Rural Agriculture Market**

The capital assets of SLA are recognised as pillars at which livelihood for rural people can be built. In the context of this study, these assets are assumed to play a crucial role in terms of uplifting situation of people who engage in rural agricultural market by reacting to the impact of COVID-19 as they attempt to adjust and overcome it. The results, therefore, show that COVID-19 has a negative impact on rural agricultural market in respect of human, financial, physical and social capital assets.

#### *5.2.1. COVID-19 on Human capital for the rural agricultural market*

The results reveal that human capital is the most aspect of SLA to experience a severe impact of COVID-19 as the small farmers and agricultural traders struggled to access agricultural market. According to Mapiye (2016) & Serrat (2017), the human capital asset of SLA involves the obtainability of experiences, creativity, skills, labour and good health amongst people in rural areas. These aforementioned factors play an integral part to small farmers and agricultural traders to obtain desired livelihood outcomes from the rural agricultural market, which is their main livelihood strategies. It is, however, noted by the

African Union (2020) that the introduced measures as a way to contain the spread of COVID-19 have forced small farmers and agricultural traders to close their daily operation and harshly reduced their involvement economic activities. This is assumed to be resulting in a long term recession in rural agricultural market as far as the continuing spread of COVID-19 is concerned. Blanke (2020) raises a concern about the health care system in Africa, which is assumed to be very weak as there is a spread of the pandemic. In addition, the spread of the COVID-19 puts at high-risk lives and livelihoods of rural communities and economic growth.

It is very important to note that in most African communities, there is an existence of informal economy including rural agricultural market which forms the backbone of the economy and provides most employment. Conversely, the impact of COVID-19 through lockdown has resulted to the human capital being disturbed as farmers and traders were not allowed to travel locally and internationally, hence, this risk pushed many local people into poverty, while others lost their jobs in the rural agricultural market. It is argued that if previous crises are any guide, the loss of employment and income is likely to have a serious and widespread impact on access to food from the retail market as they reduce the ability of vulnerable groups to purchase sufficient calories, let alone nutritious food (Blanke 2020). This is not solely an urban issue. Rural areas that depend heavily on purchased foodstuffs are also affected. The huge impact of COVID-19 on the human capital asset of SLA can be referred to the high probability that rural agricultural market in most part of the country will be suspended, downsize, or face bankruptcy as they are starved of capital. In this point, the British Broadcasting Corporation (2020) report that women and youth are the likely component of a human capital asset to be hit badly by COVID-19 in the rural agricultural market.

#### *5.2.2. COVID-19 on physical capital for the rural agricultural market*

The physical capital asset of SLA involves the availability of basic infrastructure that can be used by farmers and agricultural traders to attain their livelihood outcome through the rural agricultural market (Serrat, 2017). The results show that communication and transport to access rural agricultural market are the most components of a physical capital asset to be impacted by COVID-19. It can be argued that physical asset can assist small farmers and agricultural traders in transporting their agricultural produce to the market for commercial intentions (Chitongo, 2017). The results depict that accessing the retail market during the initial phase of lockdown has been difficult for farmers and agricultural traders since the operation of public transport remained shut down. The shutdown of public transport was mainly on the basis to maintain social distancing in order to slow down the spread of COVID-19 by limiting contact between people. This has negatively contributed to the rural agricultural market as the farmers and agricultural traders were not able to transport their product to the retail market. Mbonambi (2020) argues that other farmers and informal agricultural traders were unable to travel for the purpose of accessing permit to work during the high restricted time of lockdown. In addition, this has left people who are involved in informal agricultural activities with no more means to travel to offices to acquire such permit and polices still harassed those who got permits (Mbonambi, 2020).

#### *5.2.3. COVID-19 on social capital for the rural agricultural market*

The social capital asset of SLA encompasses the quality and quantity of social resource that can help farmers and agricultural traders to effectively attain their livelihood outcomes

through the rural agricultural market. These social resources according to Serrat (2008) consist of cooperation of members, social relations and also access to the institutions that promote development in rural societies toward making a sustainable livelihood. It is, however, noted that the impact of COVID-19 has destroyed those social resources as people are forced by lockdown regulations to socially maintain distance as a way of avoiding the spread of the pandemic. The results further show that the social capital asset of SLA received a hard hit from COVID-19 as people in the rural agricultural market are struggling to adjust on the use of technology. Trendov, Varas, & Zeng (2019) are of the view that technologies and digital innovations may play an important role in advancing several sectors and agricultural sector in particular. It is, therefore, assumed that the introduction of the Fourth Industrial Revolution has resulted in the rapid transformation of several sectors by disruptive digital technologies (FAO, 2017). United States Agency for International Development (2018) reports that in the agricultural sector, the spread of remote-sensing services, distributed computing and mobile technology are already contributing on the enhancement of informal traders and smallholders access to market, information, training and finance.

However, this has been an issue in South African rural agricultural market as the majority of farmers and informal traders were not prepared to opt for the use of technology since COVID-19 has disrupted their operation from the retail market. From the social perspective of SLA, African Union (2020) shares a view that the existing fragility in the economy could increase global unemployment since COVID-19 has disrupted the level of shared norms and trust that exist among farmers and agricultural traders in the rural agricultural sector. This is because their mission to overcome risks, accessing services, and acquiring information about improving their livelihood outcomes has been in jeopardy as far as the negative impact of COVID-19 is concerned

### **5.3. COVID19 on regulations for Rural Agricultural Market**

The regulatory behind the rural agricultural market involves the availability of policies and institutions which can play an important role to improve the livelihood strategies of rural communities by transforming the capital assets. The findings of Ncube (2017) shows that there is the availability of government institutions (including Local Municipalities and the Department of Agriculture) that intendeds to bring support to the rural agricultural sector and informal traders. It is, however, noted that they lack regulatory framework or policies available to guide and protect the operation of rural agricultural market and other activities, which are recognised as contributors to the informal economy. The lack of regulation for informal traders has compromised their ability to trade during COVID-19 because of the strict regulation of lockdown. Christensen (2020) is of the view that the impact of COVID-19 has highlighted the existence of inequity and negative perception in a way the South African government treats the informal sector, which actually plays a key role in the overall economy. Unlike in the formal sector, Shaikh (2020) has a perception that the continuing crisis of COVID-19 brings workers who engage in the rural agricultural market in an exceptional vulnerability of the economic and labour market shocks of the pandemic. This is due to the point that the majority of people in this sector are not protected by any regulations and they are continuously losing their jobs and facing extreme poverty as the COVID-19 intensifies across large informal economies. Kiaga (2020) maintain that the concern of government over the informal economy originates from the point that people who work in this sector have shown to be more vulnerable to impoverishment, hunger and

disease, as they lack the necessary social protection coverage and support mechanisms if they lose their livelihood during these periods of COVID-19. Christensen (2020) bring forward as a suggestion that during the COVID-19 and after, it will be important to support the most vulnerable in society by ensuring that the informal safety net remains strong in a social and business prerogative.

## 6. CONCLUSION AND RECOMMENDATIONS

The paper analysed the impact of COVID-19 on the South African rural agricultural market by using SLA as a primary theory. The results of the study show that rural agricultural market is one of the activities which are mostly contributing to the informal economy. Therefore, the impact of COVID-19 has threatened this economic sector by disrupting the value chain and market for agriculture. The human capital asset has suffered the most since small farmers, agricultural traders and agribusinesses were struggling to trade due to the movement restrictions and lockdown as a way of containing the spread of COVID-19. The physical capital asset has been disrupted by a lockdown regulation of maintaining social distancing in order to limit contact between people. Thus, farmers and informal traders struggled as they were not able to transport their product to the retail market. The lack of technological advancement in the rural agricultural sector has been identified as farmers and informal traders were not prepared to opt for the use of technology since COVID-19 has disrupted their operation from the retail market. The results also reveal the existence of inequity and negative perception in a way the South African government treats the informal sector which actually plays a key role in the overall economy since there is a lack of regulations that supports informal traders. It is, therefore, very important for the South African government to implement a regulatory framework that will guide the rural agricultural market. This regulatory framework will assist in formalising the rural agricultural market toward protecting the right of its labour force and daily operation activities.

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## **THE ROLE OF COMMUNICATION IN THE FORMATION OF YOUNG PEOPLE'S SOCIAL CAPITAL IN THE CONTEXT OF THE COVID-19 PANDEMIC**

*Introduction:* Our society faces new challenges nowadays. The widespread usage of mobile communications and its availability attracts more and more users to the worldwide network. The current generation is unable to isolate themselves from their internet connected gadgets. Clearly, the world is becoming more and more digital and dependent on information and communication technology (ICT). On the one hand, it gives the opportunity to communicate and removes all borders between cities and even continents. On the other hand, youth over-dependence on technology could lead to impaired consciousness, change in mental processes, and the problems of the Googlization of our society. The formation of young people's social capital in the modern society is influenced by information and communication technology and new communication possibilities. Notably, the transformation of communication processes was caused not only by the common availability of communication means and constantly growing network coverage areas, but also by the availability of social networks as the main means of communication among youngsters. Due to the COVID-19 pandemic and self-isolation, communication between young people has become even more dependent on ICT. The means and ways of the formation of human and social capital have also changed.

*Aim:* The main aim of the research is the evaluation of the influence of information and communication technology on the formation of social capital of young people, as well as the

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study of the amount of time spent on ICT usage for studying versus communication during the COVID-19 pandemic.

*Materials and methods:* This research was conducted among young people ages 18-38 and involved more than 500 participants (46% of whom were men and 54% women), who work or study in small or medium-sized cities, as well as in rural areas in the south east of the Moscow Region (Russia). The survey was conducted in the beginning of 2021 (after Russia lifted its lockdown restrictions). Participants were as follows: 21% were secondary school students, 35% were higher education students, 26% were college students, and 18% were working youth. The methods used were custom survey, data processing algorithm, and a part of the longitudinal analysis toolbox known as, "The influence of information and communication technology on youth's health".

*Results:* To compare the research results (based on the custom longitudinal analysis toolbox, which has been used for 10 years in this region), the data for 2020 (before the COVID-19 pandemic) and 2015 were used. The results showed that information and communication technology have become the main means of communication in the modern society during the pandemic, its use pervades all areas, from distant learning to working from home. Also, while modern technology provided more ways of communication even before the pandemic, it also became the main means of communication, especially during the period of hard lockdowns, thereby, helping to preserve and develop social capital. The pandemic also showed the difference in the access to and the usage of ICT by individuals and households. Particularly, people in areas with poor network coverage have a lower possibility of using internet-connected mobile devices. In addition, the percentage of people using information and communication technology for studying has grown up to 76% during the pandemic. Almost half of the survey participants started communicating with friends using information and communication technology more often during their self-isolation. While 13% of all participants think it is easier to use ICT to communicate, 90% of all respondents use social media for communication.

*Conclusions:* The pandemic triggered the development and wider usage of information and communication technology, which influence the formation of social capital greatly. The digitalization processes that took place before COVID-19 have strengthened information processes. Opportunities for the formation of social capital of young people have changed as they adapted to the pandemic restrictions (and distancing) that was imposed on the society. The consequences of such changes require a special attention and further research. This research represents a kind of iteration on this complex topic, and it should be analyzed further.

**Keywords:** social capital of young people, information technology, pandemic, socio-economic issues, communication.

## 1. INTRODUCTION

### 1.1. Theoretical and historical background

In the modern society social capital is one of the communication and knowledge incentive mechanisms. The onrush and expansion of the newest internet-based communication technology effectively influence the processes of the creation of new knowledge (Medvedeva, Kroshilin, 2011). It results in qualitative and quantitative changes of the social capital of the whole society. Social networks (internet-based technology) help to widen people's social circles. Internet forums, chats, pages, etc. make it possible to build social networks, and this is especially relevant for the formation of the social capital of the young people.

A social capital is usually defined as the networks of relationships among people & the norms of trust and behavior connected with them, that create the mechanism for social interaction. The definition of “social capital” was introduced by P. Bourdieu in 1983 for denoting social relationships that enable a person to exert power on the group or individual who mobilizes the resources (Fukuyama, 1999). In his article “Social Capital and Civil Society” (Fukuyama, 1999) Fukuyama determines different manifestations of social capital through the prism of the concept known as “The radius of trust”. The author divides all groups embodying social capital according to “a certain radius of trust, that is, the circle of people among whom cooperative norms are operative”. Most scientists say about two meanings of this notion: cognitive – trust, relationships, values, norms, and behavior patterns, and structural – social institutions, networks, associations. A. Portes states that social capital is fundamentally shaped by structure of relationships within social relationships that benefit individuals and groups (Coleman, 1988).

The concept of social networks in a scientific context was first used by D. Barnes in 1954. It categorizes a social network as follows:

“Every person belongs to a certain circle of friends, these friends in their turn belong to a circle of their friends. Some friends of this person know each other, and some don’t. I found it appropriate to denote such social fields as social networks. I see the system of dots and some of them are connected with each other. The dots represent people and the lines that connect these dots show what people interact with each other” (Veselkin, 1976). This concept can fully denote a social network created on the Internet (e.g. Odnoklassniki, Vkontakte, Twitter, Facebook, etc.).

Internet social network represents a resource designed for communication, creating groups, and sharing personal information. A social network target audience are young people up to 34 years old; they represent 66% of all users (VTsIOM, 2019). According to comScore researches, even ten years ago Russian users were spending more time on social networks than any other people in the world. The average time people spend on social networks is as follows: world (4.5), Russian Federation (9.8), Israel (9.2), Great Britain (7.3), Canada (5.8), Spain (5.0) (Mohamud, 2010).

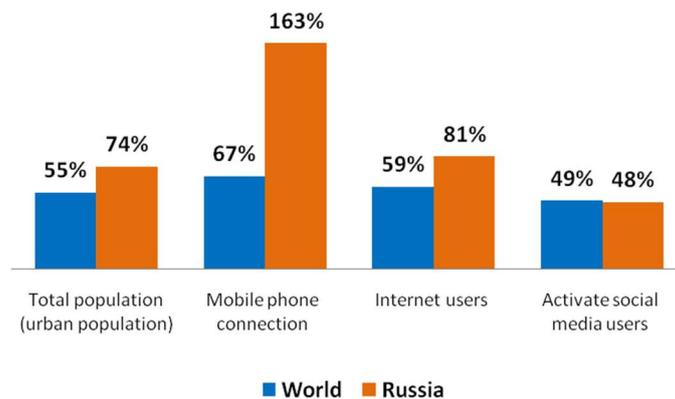
Thus, by social capital we understand sociological, economic, and political concept, that denotes social networks and their interactions in the society. The development and universal use of modern ICT have an impact on the processes in the society and lead to enlarging existing and prospective social circles. Modern youth and children are more familiar with new technology, IT, and mass media than their elders. They don’t have issues with getting used to new communication means, they know computer technology very well, they got used to new ways of searching the information, they are not afraid to use different new gadgets (Medvedeva, Kroshilin, 2013). That is why the formation and development of social capital of the modern youth and older generations is different.

Many young people, teenagers, and even children prefer to communicate in cyberspace via chat, social networks instead of in-person communication. On the one hand, this process helps to widen social circles and removes its borders, but on the other hand, negative consequences of such virtualization still exist (Medvedeva, Kroshilin, 2012). As a result, all the above creates a new culture for network interactions which is based on the usage of modern means of communication.

## 1.2. Modern Statistics

The main possibilities of communication and receiving and sharing knowledge represent the following numbers: 59% of the world population is already online (81% in Russia), 67% use mobile phones (163% in Russia, i.e. 1.5 mobile phone per person). 95% of the world population live in the areas covered by network. Mobile phones make it possible to communicate via the Internet nowadays. More than a half of users (53.3%) use the Internet on their mobile phones and almost the same number of users (49%) use social networks for communication (Picture 1, 2, 3) (Global Digital 2021, 2021).

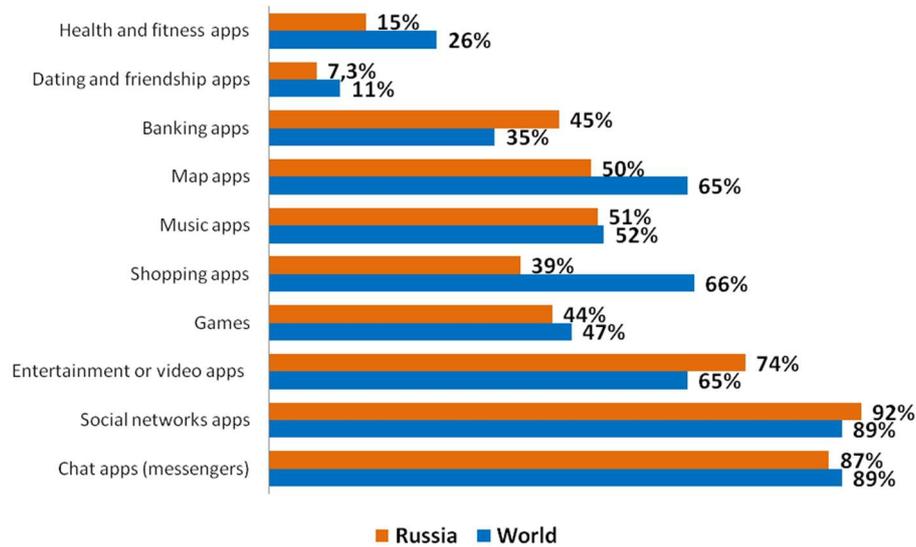
The development of the Internet technology widens social circles and improves personal social capital at the same time. According to scientists, almost 78% of young population in Russia use social networks, the number of such people in Japan is 89%, in France 48%, in Germany 57%. The analysis of mobile applications used in Russia and in the world shows, that 92% of Russians use social networks. This number is 3% bigger than the number of such people in the world. 87% of people communicate via chat applications (messengers). This is 2% less that the number of such people in the world (Picture 2). More than a half of users all around the world (53.3%) use their mobile phones to connect to the Internet (Picture 3).



Picture 1. The number of Internet users in Russia and in the world in 2021 (% of population)

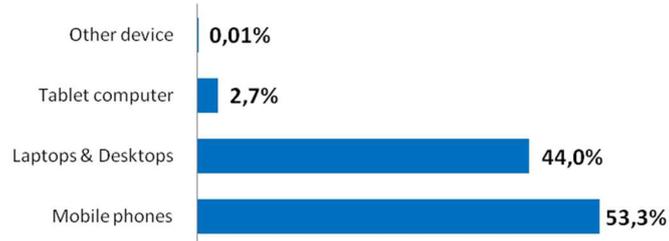
Source: (<https://www.web-canape.ru/business/internet-2020-globalnaya-statistika-i-trendy/> [access: 20.03.2021]).

Using mobile internet is obviously convenient. However, there are still some places in the world with no or partial network coverage. The limits or the absence of the internet connection lead to digital inequality. E.g. it could limit children to be online, prevents them from being competitive in the modern society. In case the schools are closed as it happened during the COVID-19 pandemic it leads to the situation when the access to education for such children becomes restricted.



Picture 2. Mobile application in the world and in Russia in 2021

Source: (<https://www.web-canape.ru/business/internet-2020-globalnaya-statistika-i-trendy/> [access: 20.03.2021]).



Picture 3. Devices for accessing the Internet in the World in 2021

Source: (<https://www.web-canape.ru/business/internet-2020-globalnaya-statistika-i-trendy/> [access: 20.03.2021]).

Two thirds of the world's school-age children – or 1.3 billion children aged 3 to 17 years old – do not have internet connection in their homes, according to a new joint report from UNICEF and the International Telecommunication Union (ITU) (01.01.2020) (Table 1) (UNICEF, 2020).

The lack of internet access will cost a new generation their future. According to UNICEF, the number of school-age children affected by school closures during the COVID-19 pandemic has increased by 38%. It made difficult to progress in their education and negatively impacted the well-being of 90 million schoolchildren all over the world. “That so many children and young people have no internet at home is more than a digital gap – it is a digital canyon”, said Henrietta Fore, UNICEF Executive Director (UN, 2020).

Table 1. School-age children without internet connection in their homes, %

Region	School-age children 3-17 years old unconnected at home
West and Central Africa	95% – 194 million
East and Southern Africa	88% – 191 million
South Asia	88% – 449 million
Middle East and North Africa	75% – 89 million
Latin America and the Caribbean	49% – 74 million
Eastern Europe and Central Asia	42% – 36 million
East Asia and the Pacific	32% – 183 million
Global	67% – 1.3 billion

Source: Two thirds of the world's school-age children have no internet access at home [Electronic resource] // UNICEF [access: 05.05.2021]. Access on the internet: <https://news.un.org/ru/story/2020/12/1391572>

Nowadays children having no possibility to be online face certain hardships feeling isolated from the rest of the world. In the situation when schools are closed due to the COVID-19 pandemic many young people and children lack the access to primary and secondary education. The people who did not have the possibility to use information and communication technology suffer even more from digital inequality during the pandemic. The digital gap in the society becomes more and more obvious.

About a quarter of a billion school children were affected by school closures during the COVID-19 pandemic to some extent. Hundreds of millions of school children must rely on online education. For those who have no access to the Internet education has become unavailable (UN, 2020).

According to WHO experts, a child could experience the lack of social skills and gain mental health problems in the long run due to kindergartens, schools, and other educational institutions closures. "Childhood and adolescence are crucial periods for neurobiological, behavioral, and social development. Physical distancing measures as well as measures for limiting transmission of COVID-19 reduce the opportunities for children and young people to interact with peers. It could influence their mental health", states V. Poznyak, Addictive Behaviors Specialist in the WHO (Balandina, Safronova, 2020).

In our country the transition to distant and online education went smoothly in comparison to other countries. The availability of hardware and software required for videoconferences confirm only 11% of all school children in Russia (according to the National Research University Higher School of Economics). While the availability of hardware and software required for audioconferences is confirmed by 21% of school children in Russia. More than one third of all children surveyed (38%) can do their homework using online educational platforms.

Firstly, the main problem is low Internet speed which teachers and children from small, medium-sized cities, as well as in rural areas have. Secondly, people with lower income can't change their Internet plan to a better one (e.g. changing a provider, buying unlimited

Internet package, etc.). Thirdly, some teachers and school children do not have required hardware at home (e.g. computer, web-camera, etc.).

Those children who had to self-isolate during the COVID-19 pandemic lack the ability to interact with their peers, develop their social skills. During quarantine or self-isolation, the ways to gain “support and motivation” are very limited. Obviously, educational institutions help to acquire the most important communication skills. Autonomy in making new friends and acquaintances affects child’s future abilities to build relationships and to fulfill themselves in the modern world (Balandina, Safronova, 2020).

## 2. AIM

The main aim of the research is the evaluation of the influence of information and communication technology on the formation of social capital of young people.

The following assumptions have been made:

- A1: There are many factors that could influence the formation of social capital of young people nowadays. The COVID-19 pandemic has become a great challenge & the situation has very much turned around.
- A2: The governments of all countries have taken unprecedented measures to prevent the spread of COVID-19. These measures have influenced the development of social and economic processes in our society greatly, i.e. showed the need for distant learning and education. Communication processes have changed as well.
- A3: During the COVID-19 pandemic the possibilities of information and communication technology would become the main factor for satisfying the demands of the modern society from the organization of educational process to remote work. It could provide a strong push towards exploring the new ways of training and retraining for a quicker development of skills and professions.
- A4: The pandemic has showed a significant digital inequality in our society. The possibility to use mobile phone to connect to the Internet was complicated by poor network coverage in some areas. It made it difficult to communicate, learn & work remotely.

## 3. MATERIALS AND METHODS

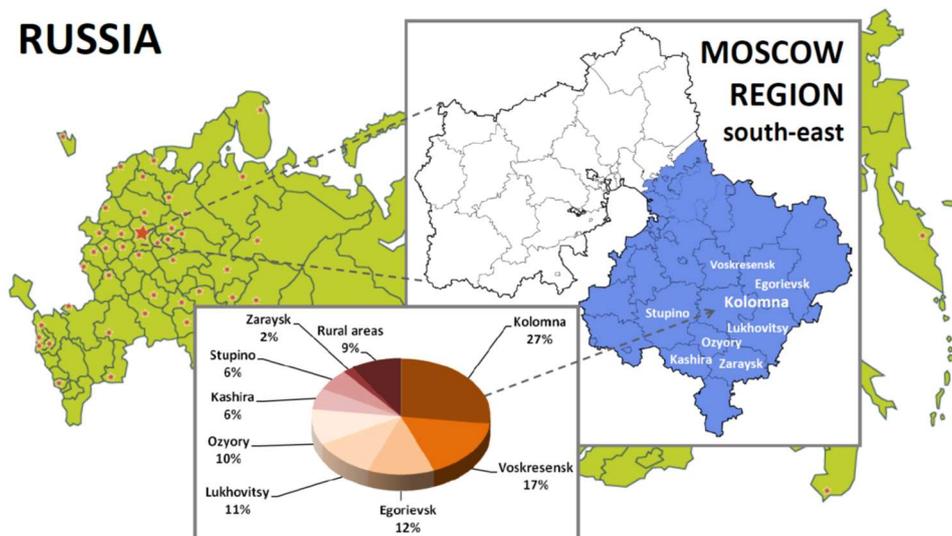
The following tools were used for the research:

1. Customer survey and the data processing algorithm developed by the authors.
2. The part of longitudinal analysis toolbox called “The influence of information and communication technology on youth’s health” which has been used for 10 years in this region. The data for 2020 (before the COVID-19 pandemic) and 2015 were used.

Joint studies of the researches from the Institute of Socio-Economic Studies of Population of the Russian Academy of Sciences (Moscow) together with the authors showed that the problem of the formation of social capital of young people during the COVID-19 pandemic is very important and diverse: the process of the formation of social capital of young people is changing. Most of all it relates to the spread and availability of the Internet, as well as to the influence of social, economic, and political factors, ongoing global processes including the COVID-19 pandemic. The development of the Internet technology widens social circles and improves personal social capital at the same time. This issue requires further in-depth study.

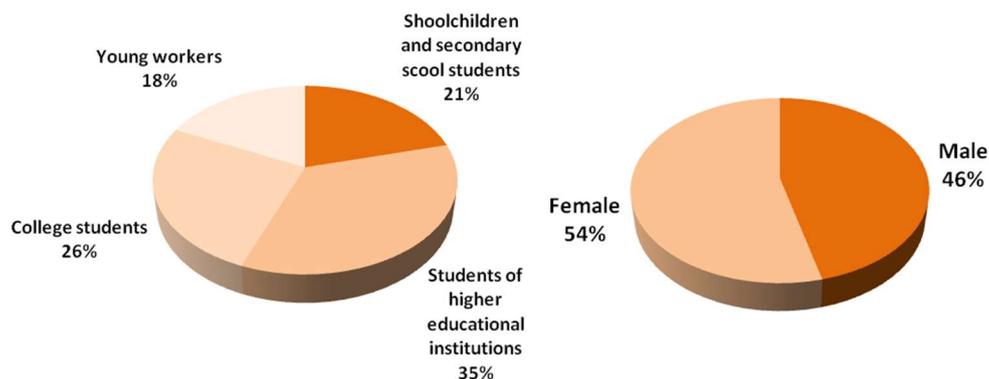
A field study was conducted to evaluate the level of the influence of communication and modern technology on the formation of social capital of young people. The survey was

conducted in the beginning of 2021 (after lifting lockdown restrictions in Russia) and involved more than 500 people: 21% of secondary school students, 35% of higher education students, 26% of college students, 18% of working youth. The gender distribution was as follows: 46% of men and 54% of women. The geographic representation of survey respondents was as follows: small or medium-sized cities (Kolomna, Voskresensk, Egorievsk, Lukhovitsy, Ozyory, Kashira, Stupino, Zaraysk), around 10% of the respondents live in rural areas in the south east of the Moscow Region (Russia) (Picture 4, 5).



Picture 4. Geographic representation of survey respondents and the number of people surveyed, %

Source: developed by the authors.



Picture 5. Gender representation of survey respondents and the number of people surveyed, %

Source: developed by the authors.

The longitudinal analysis research (Medvedeva, Kroshilin, 2011) has been used for 10 years in this region. It allows to compare the research data. The selected areas (by demographic, numerical, gender, and qualitative indicators) are typical for many Russian cities. This helps to extrapolate the research data to other areas for decision-making. The processes covered by this research are more open to the influence of information and communication technology. However, studies there could be more representative across Russia, due to a huge difference in educational, working, and financial opportunities young people have in large cities and rural areas. Quota sampling method was used to target the data based on the required population size and composition. All this enable to approximate the results across the country.

## 4. RESULTS

### 4.1. Learning and education

First, we assessed learning possibilities during the COVID-19 pandemic. Russian higher education system has proved itself and its effectiveness under pressure. 96% of all higher educational institutions in Russia completed the 2020 academic year remotely. Under these circumstances, many educational institutions had to use all possible means for remote learning (Kroshilin, Dobrokhleb, 2018). The diversity of information and communication technology specially designed for education was in high demand. The tool choice was regulated by the demand of certain Ministries. Schools and colleges decided to use online platform "School Portal", higher educational institutions used their own online learning platforms as well as platforms for online teaching (Zoom, Skype, etc.) (Kroshilin, Dobrokhleb, 2018). Many teachers were not familiar with these tools and technology.

According to the data from the expert analytical research, which were presented during the meeting of the Public Council at the Ministry of Education and Science (in 2019) around 60% of teachers have rarely or never given lectures and lessons remotely or in webinar format. They rated their knowledge of cloud technologies as 3.5 of 5 points. 88% prefer traditional face-to-face learning. Teachers did not consider traditional face-to-face learning to be fully substituted by distant learning. They believe there is a number of risks related to students' motivation & deprofessionalization of teachers in the active development of digital learning technologies ("Stress-tests" Lessons, 2020):

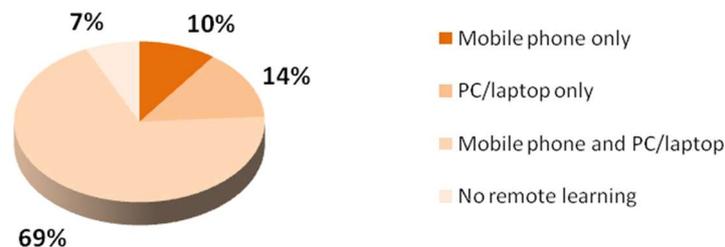
- 65% of teachers believe they are not able to control student engagement in the process during remote lectures,
- more than 70% were afraid of cheating in exams,
- 60% of teachers were unsure of the quality of remote education.

However, about 95% of students had to begin remote or hybrid education within several weeks in 2020. Almost all Russian higher educational institutions were ready to work in a new environment. This readiness helped to retain a sense of stability among teachers and students. The majority of courses took place according to the schedule and were not rescheduled for other semesters. The COVID-19 pandemic clearly showed the diversity among higher educational institutions and potential risk of further inequality: 20% of higher education institutions were working in hybrid mode, 60% changed for remote learning with a lower quality of education, 20% went for distant learning without paying attention to the quality of education, 15% "lost" their students, as there was no online tool to communicate with students during the first 2-3 weeks (First Weeks Storm, HSE, 2020).

The problem of unequal access to quality educational resources has become topical (Medvedeva, 2013; Medvedeva, Kroshilin, 2014): 13% of higher educational institutions were not even minimally equipped, only 11% of higher educational institutions have digital infrastructure, one third of students with low income did not have hardware required for remote learning. Universities remote learning experience also showed that efficient use of such technologies requires special knowledge from teachers, managers, students. It also showed the requirement for effective and convenient technological solutions, as well as a special organization of education process. This situation has proved that some very important processes within universities can't be digitized or moved to cyberspace. The reality showed that it's not possible to fully implement higher educational program remotely ("Stress-tests" Lessons, 2020).

Students had an overall positive assessment of remote education: 34% of students do not consider remote education less effective, 55% of students were less tired from learning, one third of students preferred distant learning to traditional face-to-face learning, 49% believed they have more free time, 64% admitted they sleep longer. However, remote education has also negative effects: more than 40% of students noticed an increase in their study load (especially in self-study), the same percentage of students consider the lack of communication with teachers and peers as the most challenging during distant learning. 39% see difficulties in studying at home (35% find it difficult to ask questions to their teacher online, 33% of students are confused and embarrassed when being asked to switch their web camera on) (First Weeks Storm, HSE, 2020).

According to our researches, the shift to remote learning required not only the use of desktop computers, but also the use of mobile devices, especially mobile phones (smartphones). During remote learning students were using all available devices (Picture 6).

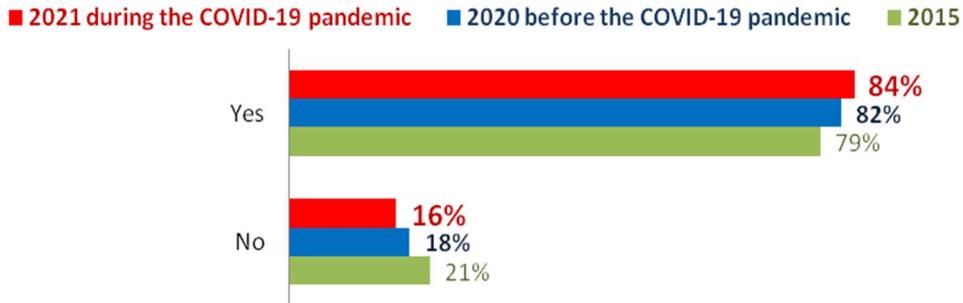


Picture 6. Devices used for remote learning, %

Source: developed by the authors.

69% of all respondents used their mobile phone and PC (laptop) for remote learning, 10% used only their mobile phone, and 14% used only a PC (laptop). 15% of all respondents noticed the increase in their expenses for mobile & internet connection, however, these expenses remained unchanged for 80% of all respondents (mostly for those who had unlimited Internet packages).

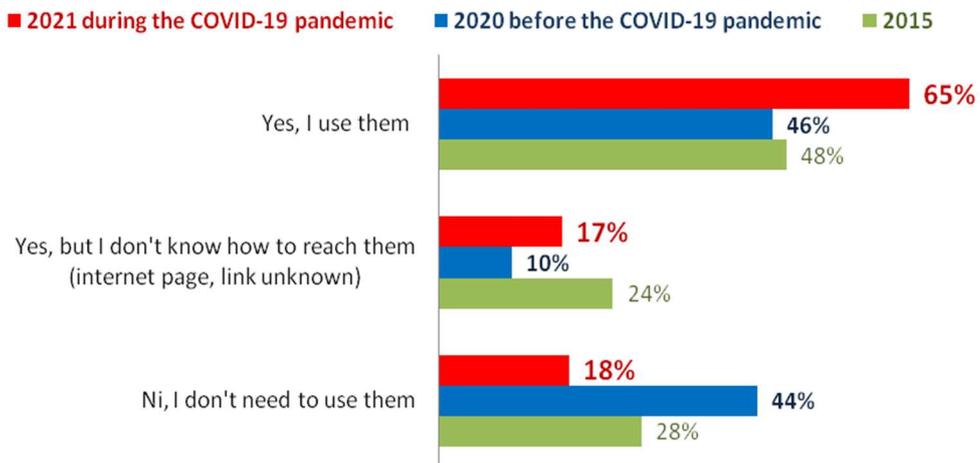
The degree of credibility to information and communication technology has grown during the COVID-19 pandemic (Picture 7).



Picture 7. Answers to the survey question “Does information and communication technology make quality education more available?”, %

Source: developed by the authors.

84% of respondents are sure that the use of information and communication technology make quality education more available. 64% of respondents became active users of education portals, while only 46% of them had known about such portals before the COVID-19 pandemic (Picture 8).

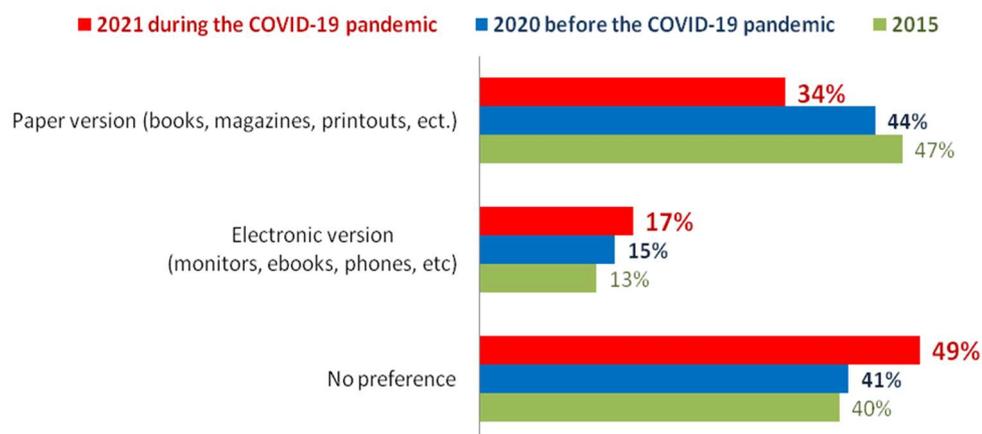


Picture 8. Answers to the survey question “Do you know about the existence of education portals on the Internet?”, %

Source: developed by the authors

Five years ago, almost one third of respondents had no idea of the existence of education portals on the Internet, and almost one fourth of respondents (24%) did not know how to reach them. Nowadays (with the help of remote learning) it makes no difference for almost

half of respondents what version to read (paper or electronic). The number of people who prefer to use paper version has decreased to 34% (compared to 2020 – 44%, 2015 – 47%) (Picture 9).



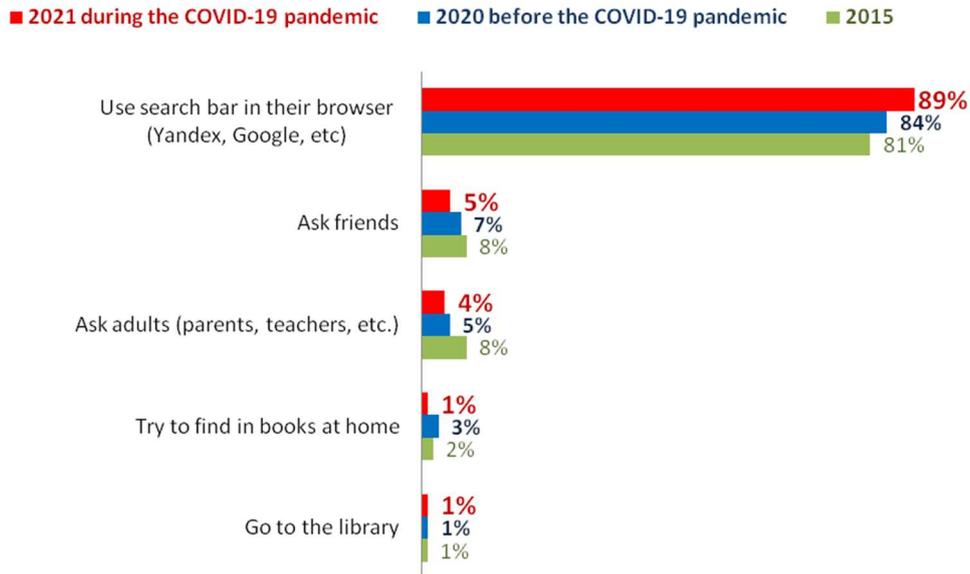
Picture 9. Answers to the survey question “What version do you prefer to read, paper or electronic?”, %

Source: developed by the authors.

Young people confidence in the fact information and internet technologies can provide a required level of knowledge instead of just information has led to the “Googlization” concept (Medvedeva, Kroshilin, 2014). The surveyed believe, that all information and knowledge could be found on the Internet without making any effort. Yandex motto “Find everything!” has become the designated panacea for managing any task or even any life issue. Typing an unknown term in search bar is becoming the only way to acquire new knowledge for many people.

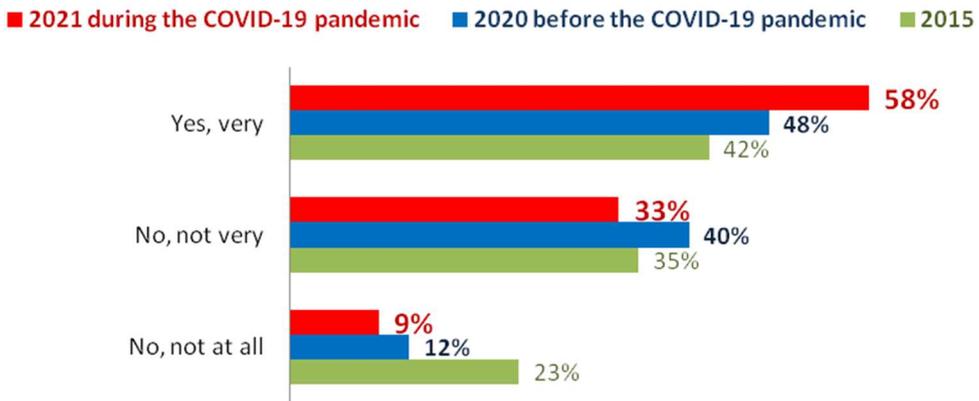
89% of respondents use search bar in their browser (Yandex, Google, etc) when they need to check the meaning of any new term or concept, in 2020 the number of such people was equal to 84% (81% in 2015). Only 4% prefer to ask their tutors or teachers, 5% of respondents ask their friends. Only a few of respondents go to the library (Picture 10).

In the situations when people have to learn something new or would like to get an answer to any problem, they prefer to use the Internet. Modern generation becomes more and more addicted to communication technology and the possibility to be online all the time. Answering the question “Would your life change if you are no longer able to use the Internet?” 58% of respondents replied that their life would change a lot. In 2020 before the COVID-19 pandemic only 48% of respondents responded the same way, in 2015 the number of such respondents was 42% (Picture 11).



Picture 10. Answers to the survey question “What would you do if you come across the term or concept you are not familiar with?”, %

Source: developed by the authors.

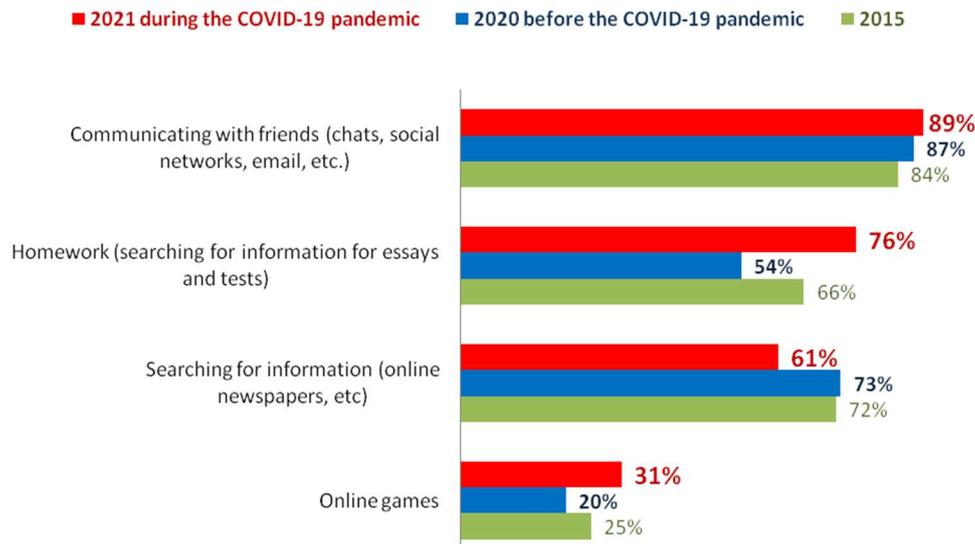


Picture 11. Answers to the survey question “Would your life change if you are no longer able to use the Internet”, %

Source: developed by the authors.

#### 4.2. Communication and social capital

Nowadays people use the Internet mostly to communicate (almost 90%) (Picture 12).



Picture 12. Top uses of the Internet, %

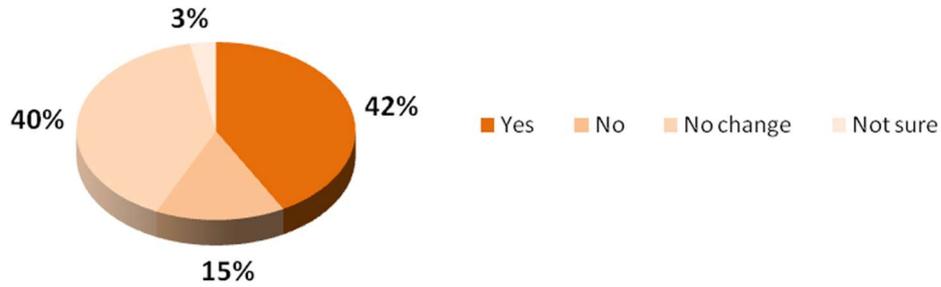
Source: developed by the authors.

The number of people who use the Internet for doing homework (searching for information for essays and theses) has increased and is 76% in 2021, in 2020 before the COVID-19 pandemic the number of such people was 54%.

42% of respondents told they started communication more with their friends using communication technology during the COVID-19 pandemic, 40% of respondents claimed their time spent on communication technology didn't change. 47% of respondents told they spent on communication technology 3 or more hours, that makes it two times longer than in 2020. 23% of respondents spent all their free time on communication technology, while in 2020 and 2015 the number of respondents responded the same way was 23% and 15% respectively. 17% of respondents said their social circles expanded during the COVID-19 pandemic. 19% of respondents, however, claimed that their social circles became smaller. 61% of respondents confirmed their social circles remained the same (Picture 13, 14, 15).

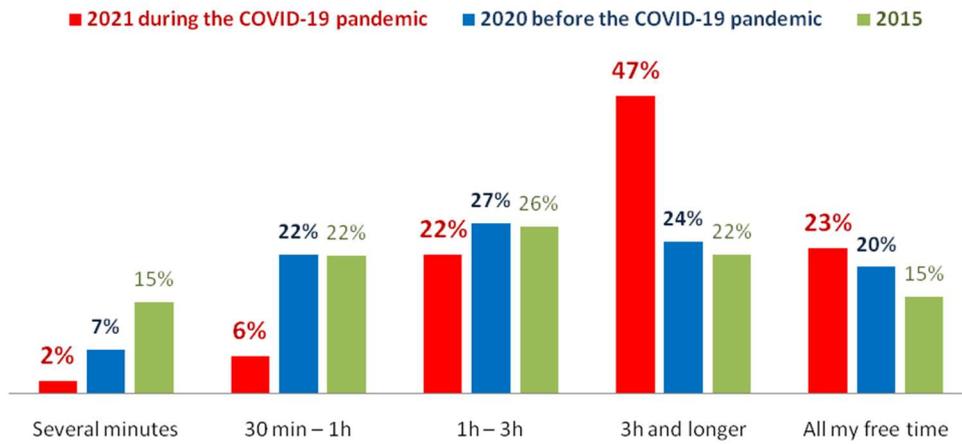
Answering the question "Would you prefer to communicate face-to-face or with the help of communication technology?" In 2021 13% of respondents replied that it's easier for them to communicate using communication technology (10% in 2020). The number of respondents who prefer face-to-face communication has decreased by 10% from 53% in 2015 and to 43% in 2021 (Picture 16).

90% of respondents use messengers for communication (73% in 2020). Less people call via mobile phones – 52% (80% in 2020). Emails are becoming increasingly rare; however, people communicate via video calls more often (39% in 2021) (Picture 17).



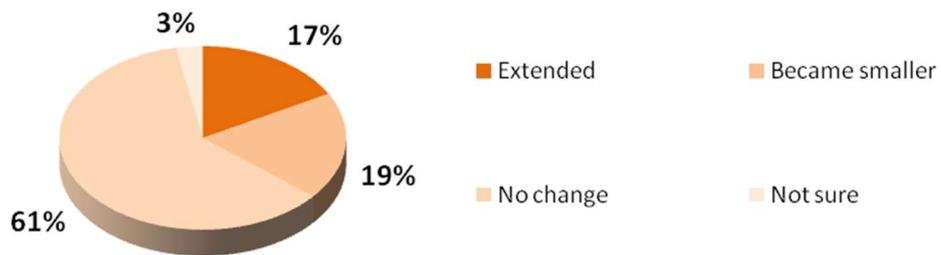
Picture 13. Answers to the survey question “Have you started communicating with your friends using communication technology more often during the COVID-19 pandemic (self-isolation)?”, %

Source: developed by the authors.



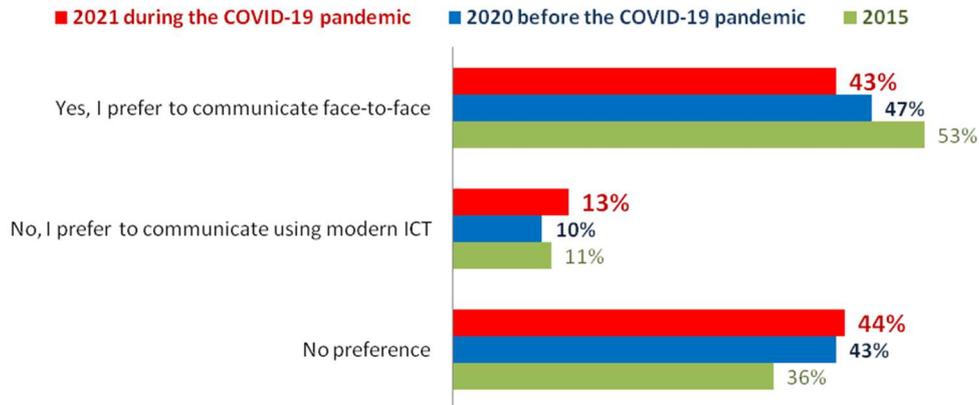
Picture 14. Answers to the survey question “How much time approximately did you spend on communication with your friends using communication technology (messengers, emails, video calls, etc.)?”

Source: developed by the authors.



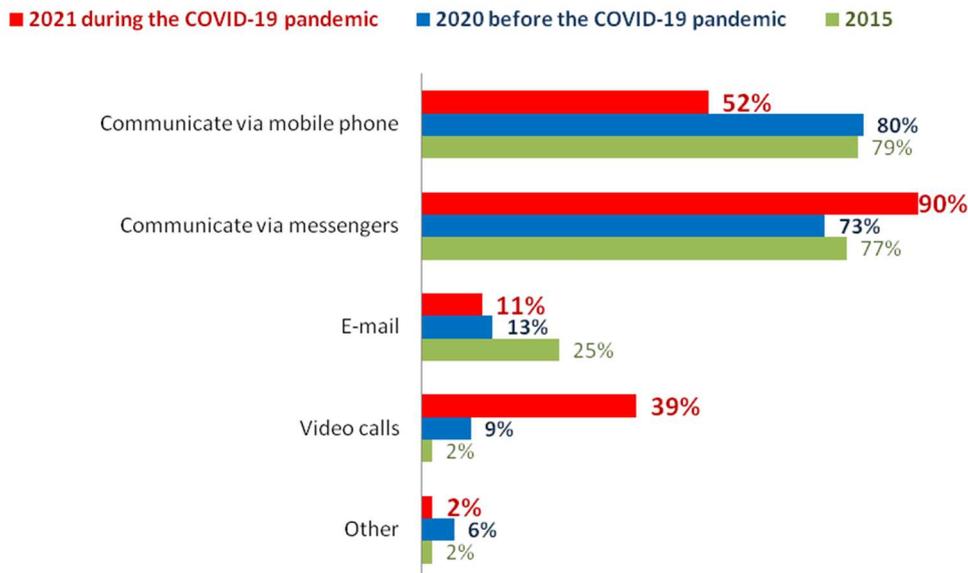
Picture 15. Answers to the survey question “Has your social circle changed due to the COVID-19 pandemic (self-isolation)?”, %

Source: developed by the authors.



Picture 16. Answers to the survey question “Would you prefer to communicate face-to-face or with the help of communication technology?”, %

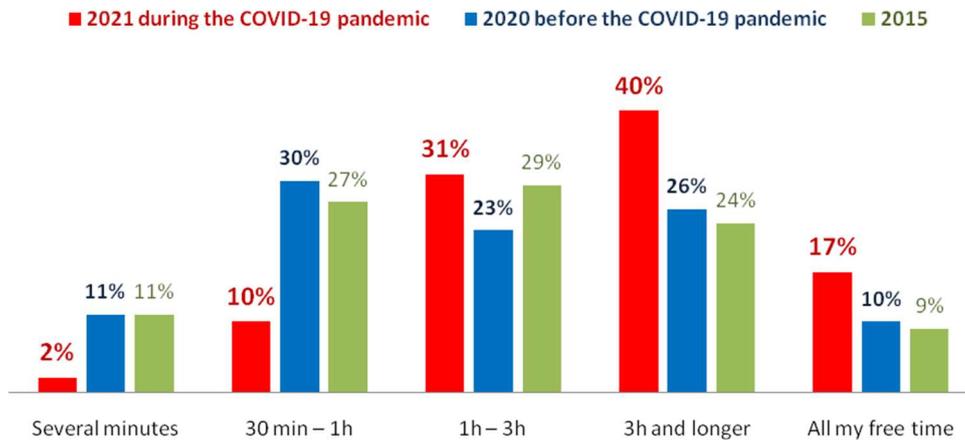
Source: developed by the authors.



Picture 17. Answers to the survey question “What modern communication technology do you use for communication with your friends?”, %

Source: developed by the authors.

According to the research, respondents started to spend more time on social networks. 40% of respondents spend 3 or more hours on social networks (26% in 2020). 17% of respondents spend all their free time on social networks, while in 2020 the number of such people was 10% only (Picture 18).



Picture 18. Answers to the survey question “How much time a day you spend on social networks?”, %

Source: developed by the authors.

The preferences of Russian young people regarding social networks haven't changed. 93% of respondents use Vkontakte, 60% use WhatsApp, 22% use recently popular TikTok, Twitter and Facebook are used by significantly less amount of people – 8% and 7% respectively.

## 5. DISCUSSION

It goes without saying, that there are several factors from geographical and demographic to social and economic that influence social capital nowadays. The COVID-19 pandemic has become a great challenge. Unprecedented measures taken to prevent the spread of COVID-19 have influenced the development and social and economic processes in our society greatly. The world has faced the need for distant learning for the first time. Education process itself has changed as well as communication processes in our society.

The following conclusions may be drawn based on the results of the research:

1. We can conclude with a high degree of probability that during the COVID-19 pandemic the possibilities of information and communication technology have become the main factor for satisfying the demands of the modern society from the organization of educational process to remote work. Modern technology provided more ways of communication even before the pandemic, but also became the main means of communication especially during the period of hard lockdowns, helping to preserve and develop social capital. All these new possibilities, i.e. getting information and knowledge, cannot be overstated. It could provide a strong push towards exploring the new ways of training and retraining for a quicker development of skills and professions.
2. The pandemic has showed a significant digital inequality in our society. Despite of its widespread and better availability, advanced information technology requires significant financial investments in the very beginning (hardware purchase, installation, training, etc.) as well as later (Internet packages, speed upgrade, etc.).

The possibility to use mobile phone to connect to the Internet was complicated by poor network coverage in some areas. It made it difficult to communicate, learn & work remotely.

3. The Internet is mostly used for communication nowadays (90% of respondents). The percentage of people using information and communication technology for studying has grown up to 76% during the pandemic. 42% of respondents told that communication technology was the only way to communicate with their friends during the COVID-19 pandemic (self-isolation). 47% of respondents told they spent on communication technology 3 or more hours, that makes it two times longer than in 2020. 17% of respondents said their social circles expanded during the COVID-19 pandemic. 13% of respondents replied that it's easier for them to communicate using communication technology. 90% of respondents use messengers for communication & 40% of respondents spend 3 or more hours on social networks (26% in 2020). 17% of respondents spend all their free time on social networks, while in 2020 the number of such people was 10% only.

It is therefore possible to speak about a new format of the development of social capital of young people influenced by external changes (the COVID-19 pandemic) and modern possibilities of information and communication technology.

## 6. CONCLUSION

According to the research results, we can conclude that our society is constantly changing. The pandemic has provided a strong push towards development and application of information and communication technology, that in its turn influenced the formation of social capital greatly. The digitalization processes that took place before COVID-19 have strengthened their influence on all information processes. The nature of the opportunities for the formation of social capital of young people has changed. The elements of distantness appeared in almost all areas of life due to the pandemic restrictions the society had to align to. The consequences of such changes require a special attention and further research. The research represents a kind of iteration regarding this topic, as the issue is complex, has many aspects, and should be analyzed further.

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## **POLISH NAVY IN SECURITY OF STRATEGIC FOSSIL FUELS SUPPLIES – ADEQUATE SHIPS**

This article defines the importance of naval forces in maintaining energy security related to supplies of strategic raw materials, examining the literature and normative and strategic documents in the area of state security. The paper presents estimates of capital expenditure and benefits drawn from the development of energy infrastructure. Particular attention is paid to the lack of general understanding around the need to take advantage of the Navy as an effective tool in implementing the state's policy, along with alliances, partnerships, and geopolitical structures that reinforce Poland's image of being a declared, active, and reliable partner catering to its own national interests.

**Keywords:** energetic security, Polish Navy, maritime security.

### **1. INTRODUCTION**

Poland is currently undergoing a profound transformation involving a change of sources of supplies of fossil fuels that are of strategic importance to the energy security of the state. This billion dollars' worth investment program aims at diversifying the supplies of natural gas and crude oil and allowing Poland to establish an autonomy from the Russian Federation in this respect. One of the key aspects in this area is access to the sea and the degree to which this supply chain route can be utilized (sea routes, sea ports). The operation and extension of the LNG terminal in Świnoujście, as well as progress reported for the "Baltic Pipe" project, opening access to sea gas fields situated in the Norwegian continental shelf, or, ultimately, the announced launch of a floating terminal, will have significant impact on improving the energy security of Poland and other countries, and will build a new quality in gas trading in the Baltic area. Another important aspect involves the mining of fossil fuels (Baltic deposits) which, although conducted at a small, but feasible scale, supplements the external supplies to cover the country's demand. The sea is a natural resource of wind power and has therefore become a desirable area for producing renewable, energy which is to flow in from offshore wind farms in the foreseeable future. Sea ports are indeed our true window to the world when it comes to transporting, distributing and storing raw materials. An analysis of state revenues generated by sea ports has indicated that they are responsible for approx. 10% of the inflows. In 2018, approximately PLN 40.6 bn were paid to the state

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budget in taxes, customs and excise tax on goods handled in sea ports (marking an 80.3% increase compared to the preceding year)<sup>2</sup> (*Ustawa*, 2019). Such extensive investments require gigantic expenditures. Subsequent projects aiming at implementing plans specified in the “Polish sea ports development program by 2030” will require expenditures of PLN 40 bn. Their purpose is to prepare Polish ports for competing against the leading players on the European transportation market and to strengthen the position of ports as leaders of the Baltic Sea area (*Program*, 2019).

These investments are the living proof of the maritime character of our country. However, it is the opinion of the author that the social awareness of the importance of the sea remains low. The fiscal share paid by taxpayers to cover the needs of the state’s maritime policies in the pursuit of their strategic objectives is not spent on the financing of main entities responsible for maintaining the country’s maritime security. When this security is guaranteed, which involves the minimization of challenges and threats associated with the sea, conditions for the utilization of water basins of essential importance to the state will be created according to the will and interest of the nation (Szubrycht, 2011). In reality, however, modernization of the Navy, one of the primary components of the Polish Armed Forces, is financed well below the required level, particularly in the light of the condition of its offshore potential. The average service period of naval ships is over 30 years (the designed service life being 30–35 years in service). Media commentaries have indicated that government programmes to launch nine new vessels in 2017–2021 (the author intentionally uses the term vessel instead of combat ship, as not all of ships can be qualified as such), built in Polish shipyards, are undoubtedly an achievement, although mainly a media one, i.e. easy to implement and relatively cheap (minehunters, tugboats). Which is also noteworthy, within the span of just six years, four different concepts for the development and upgrading of the Navy have been proposed (Dura, 2019a). Considering the policies implemented by the key players in the region, with particular emphasis on the Russian Federation, this state of things has visibly reduced our state’s resistance to possible blockages of sea deliveries and increased its vulnerability to a wide palette of threats attributable to the maritime domain. The Navy’s annual budget of several hundred million is sufficient for persevering, but the primary capacity is systematically, hopefully not irretrievably, lost<sup>3</sup>.

Naval experts have emphasized that, considering the issue of energy security (fossil fuel supplies by sea route), the country needs to be in possession of ships capable of assisting gas carriers and tankers carrying cargoes from distant parts of the world. What is notable today is the lack of understanding of the specific character of the functions which the Navy serves and which surpasses the scope of defence and stabilizing operations in the regions. Instead, it should be construed as the pursuit of objectives referred to as the national interest (Miętkiewicz, 2019). In order to guarantee the protection of national interest and the pursuit of Poland’s political and economic objectives, the Navy should have adequate potential and

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<sup>2</sup> In 2019, state budget revenues were PLN 387.7 bn, out of which PLN 179.6 bn was paid in VAT, PLN 34.8 bn in CIT and PLN 64.3 bn – in PIT. The state budget expenditure was planned at PLN 416.2 bn. The key expenditures include: PLN 97.6 bn for healthcare, PLN 84.5 bn for primary, secondary and higher education and science, PLN 79.6 bn for defense and homeland security, PLN 66.2 bn for social purposes.

<sup>3</sup> For instance, in 2019, the Navy’s budget was ca. PLN 668 mn (constituting 12.4% of the overall budget for the armed forces).

combat capacity. According to this concept, transport policies and the policy assuming the diversification of fossil fuel supplies of strategic importance to the energy security of the country have critical impact on the current and future role of the Navy. In this vision, the Navy should be equipped with corvettes or frigates (Mickiewicz, 2018).

The strategic concept of Poland's maritime security points to the need to develop the naval forces to the level of a category 3 fleet, i.e. a medium-size navy with adequate potential to project limited-range force on all waters of the world. Such naval forces can permanently and consistently demonstrate the state's determination in the pursuit of the objective in cooperation with other navies capable of conducting a full spectrum of naval operations (1<sup>st</sup> and 2<sup>nd</sup> category navies) (*Strategiczna*, 2017). At the same time, the general opinion was that corvettes and frigates were not necessary due to their low usability in combined defence operations, great costs of shipbuilding, or oceanic aspirations of a small group of seamen.

The purpose of this article is to display the significance of having a navy adequate for the policies implemented and the interest of the state, possessing sufficient naval potential in the form of corvettes and frigates to pursue strategic objectives, particularly in the aspect of the security of fossil fuel supplies with strategic significance to Poland's safety and in the aspect of producing power from renewable energy sources. Therefore, one purpose is to pursue political and economic objectives in distant areas of the world, and another purpose is to shape domestic security in the Baltic area and protect Polish sea territories. The author also points to the discord between investments made to diversify strategic fuel supplies delivered by sea as one of the key objectives to strengthen Poland's energy security, and investments made to adapt the Navy to contemporary challenges.

It was assumed that the measurable benefits drawn by Poland and resulting from having access to the sea, modern port infrastructure allowing for the supplies of strategic fuels to be diversified, as well as billion dollars' worth expenditure on the development of the extended sector require strong Naval presence to ensure the security and continuity of supplies.

This research objective was achieved by conducting an in-depth analysis of available literature covering the issue of maritime policy, Poland's energy security, and a preliminary survey of strategic documents, developmental programmes and studies devoted to the theory of use of naval forces in the implementation of state's policies, as presented by the most prominent domestic authorities in this field. The author's focus was first on elements of the maritime policies of the Republic of Poland. Subsequently, the author provided a brief description of the main investments carried out on Polish waters, related to the diversification of supplies of fossil fuels, with particular emphasis on expenditures incurred by the state and aiming to diversify the supplies of natural gas and crude oil, and to develop offshore wind farms (an attempt at estimating the costs and potential financial gains from the projects implemented). Ultimately, the article discusses the costs and purpose of purchasing corvettes and frigates in the light of critical voices opposing the need to defend "our Baltic Sea".

## **2. ROLE OF STRATEGIC RESOURCES SUPPLIES – MARITIME ASPECTS**

The assumptions of Poland's maritime policy are focused around the maximization of multi-dimensional benefits drawn from the sustainable use of the country's access to the sea, as well as from the global ocean resources, by the economy and the citizens. It was

indicated that the maritime sector offers significant potential when it comes to the production of energy in offshore wind farms. Measures aiming to increase the energy security of the country and implemented directly on Polish waters include such investments as the extension of the LNG terminal in Świnoujście (capable of receiving up to 7.5 bn m<sup>3</sup> a year and more) investments in the diversification of natural gas supplies and the crude oil terminal in Gdansk (an offshore hub). Crude oil deliveries carried out by sea to Naftoport are essential to the functioning of Polish refineries. Attention is also paid to the question of crude oil and gas extraction from underneath the Baltic seabed and their efficient transport and processing on shore. The construction and upgrading of offshore transfer and storage infrastructure dedicated to fossil fuels are the main objectives of the activities aiming to strengthen the energy security of Poland. Apart from the aforementioned investments intended to increase the energy security of the country and which are directly related to the sea domain, we can also list such projects as the “Baltic Pipe” (target imports of ca. 10 bn m<sup>3</sup>, exports of 3 bn m<sup>3</sup> of gas), announcements of the construction of an FSRU terminal<sup>4</sup>, another connection of the B8 oil field with the Power Plant in Władysławowo (of local significance, however showing possibilities), upgrading of major Polish ports to intermodal hubs of the Trans-European Transport Network TEN-T (*Polityka*, 2015).

Any discussion of the energy security maintained on the basis of sea access cannot take place without reference to Poland’s Energy Policy. The document states that diversification of directions and sources of gas supplies will be continued by extending the import capacities and developing connections with neighbouring countries. This will create conditions for the development of a hub for gas transfer and trading with other countries of Central and Eastern Europe, and the Baltic States (*Polityka*, 2019). This “vision” points to clear needs of Poland (guaranteeing the continuity of supplies), its high aspirations and the resultant extensive international interest.

Elements of the supply chain which could be used to diversify sources to guarantee the state’s energy security should be briefly characterized in a breakdown into individual strategic fossil fuels.

Natural gas supplies provided by sea are an important element of the process of diversifying the supplies of this fuel. This aspect encompasses such facilities as specialized terminals capable of regasifying and storing gas, kriogenic tankers transporting liquefied gas, as well as facilities designed to serve as floating regasification terminals. Thirdly, gas lines are laid at the bottom of the sea for the purpose of transporting the fuel directly from its production site. Ultimately, this notion also includes the exploration of undersea oil gas deposits or gas as a by-product of crude oil production. In Polish conditions, different gas import scenarios estimate from 7.75 bn m<sup>3</sup> to 30.95 bn m<sup>3</sup> of gas imported a year (LNG terminal in Świnoujście, the “Baltic Pipe” project, the FSRU terminal and a “small-scale” terminal in Gdynia, oil production in the Baltic Sea, and the B8 oil field – Władysławowo gas line) (Miętkiewicz, 2019a). New possibilities of obtaining the fuel are direct indicators of its diversified supplies, and thus of improved energy security of the state. Furthermore, they promote Poland to the role of a leader in the regional system of supplying neighbouring countries interested in obtaining autonomic supplies from outside the Russian Federation, and in strengthening market principles in natural gas trading.

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<sup>4</sup> FSRU – Floating Storage Regasification Unit.

An analysis of a contract entered into with the world's largest LNG<sup>5</sup> exporter, QatarGas, for a period from 2014 to 2023 and stipulating the import of 1.5 bn m<sup>3</sup> of gas a year to Poland, points to a very high price of the contract, i.e. USD 550 mn a year, which sums up to USD 11 bn (PLN 43,12 bn) in a 20-year period. Additionally, another long-term contract signed in 2018 increased the volume of gas imported to Poland to 2.7 bn m<sup>3</sup> a year. The costs of extending the LNG terminal in Świnoujście are estimated at ca. PLN 840 mn, however, Poland is entitled to apply to the European Regional Development Fund and the Cohesion Fund for PLN 553 mn to obtain maximum reimbursement of the costs incurred. The original cost of building the terminal was PLN 3 bn (Gaz System, 2017).

Apart from the possibility of importing an additional volume of LNG in the amount of 4.1 to even 8.2 bn m<sup>3</sup> (or 4.5 bn m<sup>3</sup>, as is also often quoted), the Polish gas supply system will also include a FSRU which will further develop its potential. The costs of this enterprise are difficult to estimate, but data obtained for the FSRU terminal in Lithuania may serve as guidance in this matter. Local authorities decided to buy out the "Independence", a floating terminal which had been leased. Lithuanian media have speculated about the price of purchase, proposing sums ranging from EUR 121 mn to 160 mn. The Lotos Group, operating in a consortium with Gas-System, has announced an investment project consisting in the construction of a "small-scale" LNG terminal in Gdansk. The final costs of this investment are not known, but the original design states EUR 1.74 mn (Sawicki, 2019). At the same time, the project assuming the extension of the Port of Gdynia includes the construction of a "small-scale" LNG terminal capable of receiving 2.5 billion m<sup>3</sup> of gas a year.

Analysing large-scale gas projects, the author is bound to quote the costs to be paid by the Polish party in the "Baltic Pipe" investment project. The Polish share of this international investment controlled by the operator of the transfer network will be approximately EUR 784 mn, which is more than PLN 3.6 bn<sup>6</sup> (the total cost will oscillate around EUR 1.604 bn) (Gaz-System, 2017). According to estimations, from the economic point of view, Poland is to be the largest economic beneficiary of the project. A 67% ENPV<sup>7</sup> (Economic Net Present Value) is EUR 682 mn (ca. PLN 3.1 bn).

Naftoport in Gdansk is the main facility which is responsible for the diversification of crude oil supplies in Poland. It is used to supply refineries with crude oil pursuant to long-term contracts with suppliers from Saudi Arabia and Russia, and spot deliveries from Angola, Nigeria or United Arab Emirates, among other countries. The terminal has 6 tanks, 375 thousand m<sup>3</sup> each. A project to increase the storage capacity in the form of 5 tanks, approx. 600 thousand m<sup>3</sup> in total capacity, has been launched with the cost of PLN 327 mn. The value of the growing capacity of the hub has been proven when all supplies via the "Friendship" pipeline were withheld in 2019. Within 46 days, a total of 51 tankers arrived at Naftoport, delivering 2.2 mn tons of crude oil in one month only (Kiewlicz, 2019).

Crude oil and natural gas fields in the Baltic Sea are a viable source of fossil fuels, mined for decades. However, offshore oil production requires significant financial expenditures, as exemplified by the management of the B8 oil field which cost PLN 5.5 bn until the first half of 2018. Furthermore, Lotos has been investing in the exploration of new deposits (e.g. Yme in the North Sea), for which the company spent more than PLN 500 mn in 2018-2019.

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<sup>5</sup> LNG – Liquefied Natural Gas.

<sup>6</sup> According to an average exchange rate of the NBP from 07.04.2020 = PLN 4.53.

<sup>7</sup> ENPV – Economic Net Present Value.

The company is planning to spend another PLN 500 mn for this purpose in 2020 (*Grupa Lotos*, 2020).

Export of cheap coal is important in guaranteeing the energy security of the country. In 2018 only, a record amount of 19.67 million tons of coal was imported to Poland (a 52% increase compared to 2017 – 12.9 mn tons). A great part of the imported coal (68%, i.e. 13.5 mn tons) was imported from the Russian Federation (also by sea). Export by sea assumed handling of coal imported from the United States (1.53 mn tons), Australia (1.47 mn tons) and 1.46 mn tons from Colombia, 0.55 mn tons from Mozambique and Kazakhstan (0.50 mn tons) and the Czech Republic (0.36 mn tons). Import from other countries is approx. 0.3 mn tons (*Rosyjski węgiel*, 2019).

What is noteworthy is the large number of tankers arriving at Naftoport, with successive vessels entering the port virtually every day. Sea ports are main coal import hubs, whereas the Port of Gdańsk plays a key role in terms of the amount of coal handled. Together with Gdynia, the Port of Gdańsk services 80% of all coal cargoes. The terminal in Świnoujście is currently the only point of import for liquefied gas, whereas the Szczecin-Świnoujście port complex serviced nearly 20% of the overall coal imports in 2018.

Analysing the geographic locations of sources of fossil fuel supplies, we can see that their routes match the busiest oceanic trade routes. They often cross areas with pirate activity, prone to terrorism at sea, drug smuggling or illegal migration. International shipping routes are often the arenas where the politics of international political and military blocks is often manifested. These include rising sea powers (Russia, China, India), for which physical presence in the form of naval ships, displaying their actual determination in the implementation of their strategic objectives, is more relevant than international laws and agreements. Firstly, large distances between base ports and areas of potential activity<sup>8</sup> (*Strategiczna*, 2017) force these countries to have larger vessels to guarantee their adequate autonomy and seaworthiness, and to develop an extensive logistics network based on a system of allies.

The geographic locations of the suppliers of main fossil fuels described in the article point to the need to protect the country's own strategic interests to guarantee the energy security of the state on distant waters. Due to economic and geopolitical conditions, countries alone are not able to implement a maritime policy to guarantee the full protection of fossil fuel transport. The solution is to intensify their presence in multinational teams operating with the NATO or the European Union, and guarantee their permanent involvement in issues of maritime security on key pan-oceanic transport routes (limited to waters of vital importance to the interest of Poland).

According to estimates of by 2040, more than 10 GW of power is to be generated offshore. Construction of offshore installations is however only a part of an extensive package of enterprises aiming to increase the volume of energy obtained from high-efficiency wind farms (Miętkiewicz, 2019b). Capital expenditure by 2034 is estimated at PLN 73 to 101 bn (Rączka, 2018). An attempt at estimating the total costs and the potential benefits drawn from the aforementioned projects is presented in table 1.

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<sup>8</sup> Areas of potential activity shall include sea basins, in which, due to: the interest of national security, obligations under alliances or coalitions and the state's aspirations, the likelihood of military operations at sea is the highest.

Table 1. An attempt at estimating the costs and potential financial benefits (revenues) of projects implemented on Polish waters

Item	Project name	Estimated cost [PLN]	Estimated revenues / other data [PLN]
1	Offshore Wind Farms	Expenditures by 2034 From <b>73 bn</b> To <b>101 bn</b>	inflows to the GNP by 2030 <b>60 bn</b> and an additional <b>15 bn</b> in CIT and VAT
2	Outer Port of Gdynia	ca. <b>3.34 bn</b> (EUR 787 mn)	State budget revenue in 2018 – PLN 40.6 bn
3	Central Port of Gdańsk	<b>11 bn</b>	
4	LNG Terminal in Świnoujście 2007–2023 extension	Construction <b>3 bn</b> Extension ca. <b>840 mn</b>	Value of contracts 43.12 bn (2014–2034) + unknown value of increasing deliveries by 2.7 billion m <sup>3</sup> /year from 2018
5	Baltic Pipe EU subsidy	<b>3.6 bn</b>	ca. PLN 3.1 bn (67% of ENPV)
6	FSRU Terminal	<b>3 bn</b> (estimates from 2017)	
7	Naftoport	<b>327 mn</b>	
7	Extraction	2018–2019 – 500 bn 2020 – 500 bn	Operating profit in the extraction segment was PLN 1046.2 mn

Source: Own study based on: (Rączka, 2018; McKinsey & Company, 2016; Dzwonnik, 2019) and previous sources.

### 3. THE ROLE OF THE NAVY – DISCUSSION

Doctrinal documents state that participating in the defence of Poland and in collective defence as part of joint NATO forces, as well as strengthening the deterrence system of the allied states, are the primary tasks of the Polish Navy. Naval forces participate in crisis response operations of the Organization (*DD-3.1(A)*, 2018). Due to its specific character, the naval part of the armed forces is particularly involved in the process of building the economic security and sovereignty by providing active defence measures (policing function) and protecting the freedom of maritime navigation.

The significance of sea transport routes, underwater transfer lines, and particularly the impact of their interruption, combined with the specific legal status of the sea, magnify the visibility of competition of the biggest sea powers on water, compared to their activities on land. The interactions occurring between antagonized parties (the US, NATO – Russia, China) on land involve more severe political and military outcomes. Russia further strengthened its position by taking advantage of the opportunities created by combining technology with strong political will, and with its skill in taking unexpected actions (including in geographic terms), and by staying ahead of other, western countries in conceptual terms. The Allied forces are therefore facing a challenge in the form of an adversary who approves the use its own armed forces in manner that is legally, morally and ethically unacceptable for the political and military leaders of NATO (Roberts, 2018).

According to A. Makowski, all discussions pertaining to the shape of the naval forces should be based on an assumption arising from an analysis of the current and continuously

intensified operations of the Russian Federation, which aim to destabilize the situation in the country, including possible use of the armed forces. The key element of this approach lies in its different objective, whereby the armed forces are used to repress the intentions of the opponent instead of stopping the opponent's oppressing capacities (Makowski, 2018).

The head of the Allied Maritime Command (MARCOM), recommended acquiring three to four frigates. This approach is indicative of a broader outlook on the problem of use of the Navy, one that does not limit its role to the mere defence of the country's territory. Seafaring countries have visibly adopted a different approach to the pursuit of their interests and, most importantly for the United Kingdom, to the method in which benefits from the country's access to the sea and from its maritime policies are derived. Poland can be visible as an active partner in the implementation of maritime policies under NATO or the European Union. In a practical dimension of shaping the country's safety at sea, dedicated vessel units participate in operations of the aforementioned, multinational task groups or multinational groups (European Union).

Many maritime safety authorities have emphasized the significance of the provisions of Article 3 of the North Atlantic Treaty, which obligates all parties to maintain and develop both their individual and the joint capacity to resist armed attack (North Atlantic Treaty). Our membership in the NATO is the key guarantee of our safety, however our national potential represented by the armed forces and our NATO membership remains the determinant of security. Political authorities are in fact responsible of making decisions as to the level of involvement of the Polish Navy in NATO's maritime endeavours. It is the role of specialists in maritime operations and the naval forces to develop and present variants of involvement at different involvement levels (Szubrycht, 2018a). Such recommendations in a wide range of operation to protect the interest of the state have basically been prepared. They are however crowded by a multitude of analyses, assessments and opinions of centres having little to no experience in the matter, but are opinion-forming and able to push their agenda in the general discussion. The opponents of equipping the Navy with "large" vessels often provide the following arguments:

- High costs of building and operating the vessels,
- The proposed action is not complementary with the territorial defence concept and, in the event of a mass enemy attack, the forces have little chance of surviving,
- Such units would primarily serve as a guard of honour (presenting the flag and sea diplomacy) and would be of little use on the Baltic Sea,
- Focus on building potential and developing the capacity to conduct effective fire targeting the opponent,
- Comparison to the September campaign from 1939.

Analysing the participation of vessels in standing NATO units, assuming the maximum variant, naval forces should have 6-8 ships capable of completing operations in minesweeping, as well as 3-4 ships deployed to participate in operations of striking forces (corvettes, frigates). **The optimum variant assumes owning 6-7 mine hunters and 2-3<sup>9</sup> frigates (large corvettes).** The minimal number of vessels which the Polish Navy should own are 4-5 mine hunters to be deployed in the Standing NATO Mine Countermeasures Group (SNMCMG) and 2 vessels capable of participating in operations of the SNMG. The operational cycle preferred in NATO is 8 quarters (24 months) and the Navy has three large

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<sup>9</sup> The 1:3 coefficient of operational use of ships adopted in Poland should be taken into account.

corvette – frigate vessels. The resultant cycle is 2-4-2<sup>10</sup> relative to two vessels and one ship in the 2-2-4 cycle. Which is noteworthy, as part of their international deployments, ships will be capable of operating for 6 quarters, i.e. 25% of the cycle. The next 10 quarters will be dedicated to domestic operations (ca. 42% of the time), and the remaining 8 quarters – to recovery (ca. 33%). In the minimum variant, when a smaller number of ships is available, the 2-4-2 or 3-2-2 domestic cycle could prove to be more effective if a larger presence in international operations is required. The calculations above indicate that the effective use of forces as part of an operational cycle leads to a concord in the role of the naval forces as a tool used for implementing the state's policy, pursuing its ambitions and completing tasks related to protecting the state's sovereignty and independence.

Sceptics opposing the expansion of naval forces by equipping the Polish Navy with corvettes and frigates point to the economic factor. The price depends on many considerations, like sensors and effectors and the command systems installed on board. Another important factor in this calculation is the cost of deploying ships of discussed classes to take part in operations in overseas standing units, compared to a similar land contingent, which is 1:25. It is even more beneficial when mine hunters or command vessels are deployed (Szubrycht, 2018b).

Depending on the displacement, its combat and operational potential may vary. Hence, the capabilities of individual vessels in a breakdown into the most important types of operations, such as combating airborne, surface and submarine targets, should be taken into account. It is difficult to specify the price of navy platforms, as the values of such units, including training and offset packages, are negotiated by governments in confidence. Frigates and corvettes are the most frequent objects of discussions devoted to recommended Navy purchases (Table 2). The requirements for new frigate types are not known, similarly to the budget which is planned for the "Miecznik" project, often compared to the Danish design, used as reference for analysing the costs of purchase of these ships. A single ship of this type is priced at 340 mn dollars (50 to 70% of the overall ship cost). With reference to the Iver Huitfeldt, this cost was 64% (the hull cost 133 million dollars, whereas individual systems, weaponry sensors and electric equipment are worth 207 million dollars). Considering further, domestic conditions (margins, markups, insurance), the price of the Polish frigate variety increases to 550 mn dollars (Dura, 2019b).

Analysing the data, our attention is drawn to differences in the price of ships of the same class. The cost of acquiring one Iver Huitfeldt frigate, expressed in PLN, is similar to the Chinese offer. The Finnish corvette has also been intentionally replaced, the cost of which is well above the cost stated for all types of frigates. Of course, the ultimate price is determined by the size of the ship, its equipment, the size of the order or the cost of labour, as well as logistics and training packages. The final price is always the result of long-term negotiations conducted at the highest levels of authority. It appears that purchases of new ships capable of impacting the maritime policy of Poland according to its actual needs (which go beyond the aspects of fuels and energy discussed in the article), can be performed only on the basis of a national programme, as in the case of the F-16 purchase. A programme like this would have to be based on a guarantee of stable and long-term financing of the construction or cooperative acquisition of vessels of desired classes, counted in billions of

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<sup>10</sup> 2-4-2 – a cycle of 2 quarters (6 months) as part of international operations, 4 quarters (12 months) as part of domestic operations and 2 quarters (6 months) as part of recovery, renovation and repairs, forming a complete cycle of 8 quarters (24 months).

PLN. This certainly requires consensus from all political forces which, considering the diverse concepts and negation of the concepts of past political leaders, is not easy. Therefore, specialists must face a difficult challenge in that they must convince top leaders about the significance of the state's maritime policy in guaranteeing its proper development and functioning.

Table 2. Comparison of the costs of acquiring ships of individual classes

Frigates						
Type	Meko 200 (Germany)	FFG(X) (USA)	054A (China)	Iver Huitfeldt (Denmark)	FREMM (EU)	F 125 (Germany)
Displacement [T]	3700	4000–6000	4053	6645	6700	7200
Unit price	USD 500 mn	USD 800–950 mn	USD 348 mn	USD 350 mn (British version)	USD 936 million to 1.2 bn French version, USD 676 bn for Morocco	USD 740 mn
Price [PLN bn <sup>11</sup> ]	<b>2.16</b>	<b>3.14–3.53</b>	<b>1.36</b>	<b>6.04</b>	<b>3.67–4.7</b>	<b>2.9</b>
Corvettes						
Type	Visby (Sweden)	066 (China)	K130 (Germany)	Sigma (Indonesia)	Milgem (Ada) (Turkey)	Pohjanmaa (Finland)
Displacement [T]	640	1500	1580	1700	2000	3800-4300
Unit price	USD 184 mn	USD 230 mn	USD 580 mn	USD 222 mn	USD 250 mn	EUR 325 mn
Price [PLN bn]	<b>0.72</b>	<b>0.9</b>	<b>2.48</b>	<b>0.86</b>	<b>0.98</b>	<b>5.56</b>
Notes	x	x	x	Manufactu- rer DAMEN	Pakistani version	x

Source: Own study based on data obtained from the manufacturers.

The “Technical Modernization Plan for 2021–2035” adopted in 2019 incorporates multiple programs, among which three include a direct reference to the Polish Navy (the “Miecznik” programme of two coastline defence ships, the “Orka” programme dedicated to the purchase of two submarines, the “Murena” programme of 6 lightweight missile ships). The whole plan, including the year 2020, stipulates the sum of PLN 524 bn (ca. USD 133 bn). The program was extended, compared to the preceding PMT, to 2026, which assumed the expenditure of PLN 185 bn for the modernization of the armed forces.

<sup>11</sup> The EUR exchange rate as of 02.03.2020 announced by The NBP was PLN 4.33, the USD exchange rate was PLN 3.92.

Modernization expenditure devoted to the implementation of a program of combating threats at sea can reach PLN 859 mn (*Plan*, 2019). Due to the specific nature of the ships which are to be acquired to replenish the naval forces, we must refer to the past results of technical dialog conducted in response to the “Miecznik” programme. The displacement of these ships was at least 1900 tons, their range was 6000 nautical miles and their length was up to 100 m.

#### 4. CONCLUSIONS

In the opinion of the author, the general awareness of the marine character of our country and its pursuit of overseas interests is insufficient with respect to the needs and Poland’s true aspirations. A notion which has already been brought up a decade ago, Poland’s marine interest have long been limited to the Baltic Sea. This translates into an incorrect and limited perception of the issues discussed in the article, and manifested by an ubiquitous reference to exaggerated “overseas” needs of the Polish Navy, fuelled by the desires of “naval seamen” in need of far-away voyages. We must also agree with the notion that the hopes to possess a fleet, even in the “blue water navy” edition, one that would be capable of representing the interest and creating the policy of the state overseas, which rose after Poland joined NATO, a maritime organization by assumption, manifested by the mere reference to the Atlantic in its name, were thwarted. It is the opinion of the author that, if radical measures are not taken, the current condition of the Polish Navy will suffer a technological collapse, whereby successive operational capacities, experienced personnel will be irretrievably lost, and the role of the Navy will be reduce to a policing formation capable of conducting fire targeting surface objects from land. The absence of stable financing of customized programmes responding to the actual needs of the Navy will lead to a situation where restoring its full capacity, even in conditions of a maritime boom, will be impossible due to the costs and time of building it anew. Operations conducted with the use of submarines are an excellent example here.

Another discernible aspect is the pursuit of diversification of supplies of fossil fuels of strategic importance to the state, and the need to become independent from partners taking advantage of the gas and oil market to exert pressure in bilateral relations, purposefully orchestrating international interests on global scale. Due to significant distances to sources of fossil fuel supplies, this diversification is carried out on seas and oceans. Considering the legal status of oceanic waters, they have become an ideal scene for creating threats and should be considered as a weak link in the supply chain. Active participation in the process of maintaining safety and order at sea as part of multinational naval groups can be a response to the need to protect offshore transport routes navigated by tankers. This cannot however be accomplished without a fleet equipped with corvettes and frigates, which serve to protect our territory from the sea and can be used as a tool for protecting the country’s overseas interests, including to implement its energy security strategy.

Nevertheless, recent reports of the impending economic crisis resulting from the COVID-19 pandemic may critically affect the implementation of armaments programs. Plans to acquire new ships, therefore, may become the first victims of cuts in the modernization budget of the armed forces.

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## **SCHOOL SAFETY AND THE PREVENTION OF DYSFUNCTIONAL BEHAVIORS OF YOUNG PEOPLE IN POLAND – THE CASE STUDY OF SCHOOL STUDENTS FROM THE CITY OF RZESZÓW**

School safety is the process of creating an appropriate “school climate”, which is physically, mentally, emotionally and socially related to a safe space for students and their parents, teachers and the entire school staff. It is connected with the educational and upbringing process, both in typical situations and in the event of potential threats. In order to enable the creation of an appropriate “school climate”, it is important to carry out preventive actions in the field of dysfunctional behavior of school youth. The aim of this paper was to present the results of the research conducted in 2020 in Rzeszów on a population of 1091 primary and secondary school students. The results showed that school students were aware that to reduce the scale of dysfunctional phenomena at school, preventive measures should be intensified. Moreover, the youth under the survey had a positive attitude to preventive actions implemented in schools, which translates into an increase in the sense of security at school, the sense of acceptance and appreciation of the student, as well as an increase in awareness of the existence of various social threats.

**Keywords:** safety, schoolchildren, prevention, sociological research.

### **1. INTRODUCTION**

All over the world, the issue of school safety has been constantly discussed for nearly 30 years since it is an extremely important topic, but in many countries, including Poland, insufficiently secured on a practical level. The safety of school children in Polish literature

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has been discussed in, among others, Przewłocka (2015), Deptuła (2006) and Łobocki (2004). In foreign literature one can also find many studies and inspirations, including: O'Moore et al. (2004), Austin, (2003), Bucher et al. (2003), Burns et al. (2001), Daniel et al. (2008). Batanova et al. (2016) or Mori et al. (2021).

Youth as a social category is the subject of analyzes of the sociological sub-discipline of youth sociology (Griese, 1996; Kłoskowska, 1987; Koseła, 1999; Kowalowa et al. 2003; Myszka 2013; Niezgoda, 2014; Pawliczuk, 2006). Therefore, youth is a social category that falls somewhere between childhood and adulthood, in other words, between the category of the “child” and the category of the “adult”. The terms “the youth” and “youth” are so capacious that they do not allow an unambiguous analysis of these issues, the more that the concept of youth is used in a somewhat intuitive sense, as opposed to adults (Sokołowska, 2013). It should also be pointed out that adolescents are not only a statistical set, a set of units with similar characteristics, or an age cohort, but also a category of people with similar social characteristics that are important only to them (Niezgoda, 2014).

This approach to the issue results from the fact that each developmental period of a person has its own specific features that are characteristic for a given period of life. When conducting a scientific analysis of the youth and youth, it should be treated in many dimensions, i.e. as a biological, psychological, pedagogical, socio-cultural, economic and legal phenomenon at the same time. In this case, when defining the concept of “the youth” and “youth”, science uses various criteria, including: a) biological – as the maturation of the organism, b) psychological – as achieving emotional, intellectual and personality maturity, as well as creating an image of oneself, c) pedagogical – as a course of the education and upbringing process, d) social and cultural – as an element of social maturity and taking on specific social roles, e) economic – as achieving independence in terms of satisfying various material needs, conditioning the start of adult life, f) legal – as achieving the ability to perform specific legal activities (Wysocka, 2010).

It is also important that the youth is a social category very susceptible to the influences of the surrounding reality. On the one hand, it changes the world and introduces its improvements in it, resisting the existing factors, but on the other hand, being very susceptible to the influence of the environment, it allows its free development, different from the development of the generation of their parents or grandparents (Myszka, 2013). ). As Janusz Mariański notes,

the new generation of the Poles, born after the political changes, stopped accepting traditional patterns of life, cared for by generations of their parents and grandparents. Shaping their values and norms, they choose from the “catalog of values” those that are convenient, the best, the least burdensome for them, not bearing any signs of burden, but bringing pleasure, satisfaction of various, sometimes immediate, needs (Mariański, 2009).

Among them there are dysfunctional behaviors, often not perceived by young people as negative, although it should be recognized that such behaviors are characterized by negative associations, being a synonym of something bad, wrongly received, badly associated, negative. As Jerzy Kwaśniewski notes, analyzing the concept of “social pathology”, that

the very term of “social pathology” is very unfortunate. The terms-assessments are difficult to avoid in the language of social sciences. However, I think that in order

to define such a property of human behavior, which consists in their negatively assessed non-compliance with some norms or social expectations, it is better to use, if possible, more emotionally neutral terms, such as, for example, “deviation”, “social problems” (Kwaśniewski, 1992).

Thus, it can be seen that the notions of assessment are often treated as topos<sup>5</sup>, largely of an emotional nature, including a negative emotional one. Another important assumption is that such terms as “social pathology”, “social deviation”, “dysfunctional behavior”, “demoralization of minors” and others, i.e. terms assessed as negative, are related to traditional society, where there are clearly defined social norms, as well as sanctions for breaking them. The axionormative level is especially important for young people (Stecko, 2019). However, postmodern society is shaping a completely new quality of phenomena described today as pathological or dysfunctional, but which “tomorrow” may either become “normal” or completely disappear, with the simultaneous formation of new phenomena that are currently still in the futuristic sphere.

However, this analysis does not cover the entire population of youth, whose indicator is age, but school-age adolescents, i.e. people studying in schools, in accordance with the Polish educational system (in this analysis, the research covered students of 7 grades of primary schools and 2 years of post-primary schools). Such an analytical interpretation results not only from the educational needs of young people, but also from the relevant legal provisions. Article 70 (1) 1 of the Polish Constitution states that everyone has the right to education (Behr, 2016). A positive right to education means the obligation to ensure universal and equal access to education, which includes a number of activities, including: a) appropriate shaping of the network of public schools, b) ensuring that parents have the possibility to choose schools other than public schools for their children, c) imposing on the relevant authorities control competences in the field of observing the implementation of the right to education, d) individualization of the teaching process, e) developing the personality and talents of the pupil in the course of education, f) shaping and developing respect for human rights, culture and national identity, g) preparing the child to live responsibly in society and respect human rights (Kozak, 2013).

Therefore, the concept of “school youth” is narrower than the concept of “youth” and a school youth (or in other words “a youth at school age”) is a person who has an appropriate level of mental, personality, social and cultural maturity, predisposing them to undertake learning in a specific type of schools suitable for people in a given age category. Thus, the analysis of school youth is based not only on age limits, but also on their physical development, mental level, personality, psychological and social development.

The subject of this study is an attempt to answer the question what the opinions of students of schools in Rzeszów on preventive activities carried out at school are, and the aim of the research is to analyze the effectiveness of preventive activities carried out in schools.

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<sup>5</sup> A topos is a recurring motive, thread, or mental stereotype about a specific social phenomenon. This concept is derived both from literary studies, as well as from mathematics and philosophy (Illusie, 2004).

## 2. SCHOOL SAFETY ISSUES AND DYSFUNCTIONAL BEHAVIOR PREVENTION

An important issue analyzed in this paper is the issue of school safety. School safety is the process of creating an appropriate “school climate”, which is physically, mentally, emotionally and socially related to a safe space for students and their parents, teachers and the entire school staff, connected with the educational process, both in typical and upbringing situations and in the event of potential threats (*School safety manual Tools for teachers*, 2017). The United Nations Sustainable Development Goals also state that schools should provide a safe, non-violent, inclusive and effective learning environment for all<sup>6</sup>.

A safe school is one that provides the individual with broadly understood health, an appropriate level of safety and protection against dangers. It is a school located in a safe local community, having an appropriate “social climate”, reacting immediately to any crisis situation (*School safety manual Tools for teachers*, 2017). According to Amrit Thapa, Jonathan Cohen, Shawn Guffey, Ann Higgins-D'Alessandro, the “social climate” of a school is a system of patterns of school and non-school norms, values and social goals of the school environment, it is interpersonal relation connected with the educational process, it is the school's organizational system, which is created to achieve the goal of a safe educational process. The positive “social climate” of the school contributes to undisturbed physical, emotional, cognitive and social development of students and school staff, as well as influences students' acceptance to undertake learning, better self-development, and improved interpersonal relationships, both inside and outside schools, and thus to create a school safety system free from various threats. Thanks to this, students, their parents, teachers and school staff can cooperate with each other, creating a vision of the school together, developing their relationships that emphasize the benefits of learning (Thapa et al., 2013). Therefore, safe schools have adequate plans to deal with security emergencies, are aware of the risks and monitor red flags, and have adequate reporting systems.

School safety is related to local safety, and local safety is to ensure, by legal means, the functioning of people, residents of a given local community, their protection against crime and other threats that may occur in a given local community (Moczuk, 2009). As can be seen, the local security analytical base is the local community, which is characterized by at least three factors necessary for its existence. They are social interactions, a common area and common ties connecting residents (Odoj, 2007).

Importantly, local communities, based on the actions of local governments (obliged by applicable law), should create a local security system, and thus school safety, implementing appropriate preventive programs aimed at reducing dysfunctional behavior among school children. Therefore, local government should not only realize that it should do “something” for the youngest members of the local community, but should take appropriate actions in this regard. The most important activities in this area include preventive measures in the field of: a) counteracting crimes and misdemeanors in schools and in the immediate vicinity of schools, as well as violence in schools, b) preventing easy access to alcohol and “drugs” in the school environment, c) reacting in situations of inappropriate social reaction to manifestations of dysfunctional and pathological phenomena in the school environment, d) preventing the situation that there is an unsatisfactory level of cooperation between people and institutions responsible for safety in the school environment (especially on the

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<sup>6</sup> The United Nations General Assembly. Transforming Our World: The 2030 Agenda for Sustainable Development, 2015 [Access: 25.05.2020]. Access on the internet: <https://sdgs.un.org/2030agenda>.

line: management – teachers – students – parents – the Police), as well as the possible improvement of interpersonal relations in the school environment, e) counteracting the low level of mutual trust between young people and adults, caused by the lack of identification of existing social problems, fear, reluctance to reliably deal with disturbing phenomena, f) not allowing tolerance of dysfunctional and pathological behaviors, g) conducting all prevention of dysfunctional behaviors with full responsibility (Moczuk et al., 2019).

Therefore, in order the local government could carry out appropriate preventive activities among school youth, it is necessary to: a) systematically monitor the phenomenon of violence at school, drinking alcohol and the use of other psychoactive substances among school youth, b) prepare teachers and other school staff for activities in the field of prevention social problems, c) be more “brave” in their activities to counteract social problems among young people, and prepare legal instruments in the form of resolutions to effectively solve these problems and generate financial resources to conduct preventive activities, d) persons deciding about the activities of the commune cannot be little convinced about the prevention of social problems, and people who directly implement activities in this area in schools should be motivated not only morally, but also organizationally and financially, to make their activities more effective, e) every person who has any contact with young people, in particular teachers, school educators, class educators, should be introduced to the subject of modern forms of interpersonal communication, using technical devices, should master cyberspace using such devices, and also be regular participants of online forums (Moczuk et al., 2019).

Local authorities should not only diagnose social problems of young people, but also take measures to prevent the emergence of social problems among young people, reduce the size of those that currently occur, and increase the resources necessary to deal with existing problems, as well as understand the needs of the local community, but also to conduct effective preventive measures in this regard. Therefore, one cannot disagree with the statement that the social security system enables the satisfaction of various needs of citizens with the help of an efficiently functioning public administration, and the more important the guardian function of the state (in this case also the administration of local self-governments), the higher the level of social security. citizens (Stecko et al., 2015). In the activities undertaken for the benefit of young people, such activities are the most important. Prevention should also be an important element of preventive actions in the local community.

So what is prevention, which should be the subject of activities of local communities? Prevention is a process that supports the development of full health by enabling people to get the help they need to withstand life's difficulties and to achieve a subjectively satisfying, socially constructive and rich life. Within its framework, two streams of activities should be distinguished: a) creating conditions where a person can realize themselves, develop their abilities, seek their own identity, and thus become a physically, mentally, socially and spiritually healthy person, b) eliminate harmful factors for health, such as: poor economic and social conditions, mental stress, the threat of the influence of negative behavior patterns, violence (Graś, 1993). Both these parts are complementary, it is impossible for an individual to be “healthy” when his environment is “sick”. Therefore, preventive actions should be part of a social system in which there is positive cooperation between people subjected to the preventive process and those who carry it out.

Conducting preventive actions requires a whole series of actions, ranging from ensuring the best possible conditions for educating young people, through effective therapeutic

interventions in the event of problems, and ending with controlling risk factors in the environment (Kuberska-Przekwas, 2014). Brunon Hołyst is of the opinion that

most American programs are implemented in schools, and educational projects are aimed at teachers, school educators and psychologists, administration employees, students, parents and volunteers from local communities. (...) It seems particularly important to direct preventive actions towards this community. Civilization, economic, political and social threats increase the number of factors hindering the development of children and adolescents and threatening their mental health (Hołyst, 2002).

Preventive actions should follow a specific scenario. One can then talk about several levels of prevention, among them: a) the first, the most general level covers educational impacts directed at the entire society, in the sphere of attitudes that accept and facilitate problem-solving, b) the second level is influencing a group potentially at risk of demoralization, i.e. diagnostic, c) the third level is institutional and non-institutional influences on demoralized people, d) the fourth level is helping people who want to stop functioning so far, e) the fifth level is providing help to people, shaping creative attitudes towards life, tendencies to self-realization, the ability to overcome difficulties and return to social activity of the individual (Baładynowicz, 2014). Each of these levels of prevention (ranging from the most general, to the most specific, individual) is not only important, but also creates a specific system of preventing dysfunctional phenomena, which allows taking action in each of these areas, adequate to a given problem.

Prevention should not only be aimed at putting an end to the further escalation of dysfunctional behaviors, but should aim at assimilating correct forms of behavior by an individual. The essence of the prevention system is to undertake various degrees of interventions preventing the emergence and development of dysfunctional behaviors. In addition, the aim of prevention is to stop the already existing unfavorable development and the initial therapy of disorders leading to unfavorable personality states, and the most important assumption in the implementation of the prevention program is to carry out an accurate diagnosis of the family environment. The school also plays an important role in prevention, and the need for a school to fulfill its preventive function results from the essence and main determinants of contemporary social problems. The school should effectively implement preventive actions among students through a variety of preventive measures, methods and strategies, as well as be a place where the student develops his morale and learns to solve problems. Any symptoms of maladjustment or insufficient adaptation to school conditions should be treated as an extremely important symptom of disturbances in the educational process (Kałdon, 2015).

### **3. PREVENTION OF DYSFUNCTIONAL BEHAVIOR AT SCHOOL IN THE OPINION OF STUDENTS OF SCHOOLS IN RZESZÓW**

Assuming that the purpose of this research is to analyze the effectiveness of preventive interventions implemented in schools, in the opinion of primary and secondary school students, the surveys were prepared by means of an electronic questionnaire, carried out using the Survio platform, thanks to which it was possible to reach respondents using electronic carriers, without the need for direct contact between the interviewer and the

respondents. The research was carried out in September and October 2020, which was related to the existing pandemic state. 1091 primary and secondary school students from Rzeszów participated in the research.

The research question was: does school youth think that conducting preventive activities can reduce the scale of dysfunctional behaviors occurring at school, and what is their assessment. The first hypothesis of the research was: in order to minimize the scale of unfavorable phenomena occurring at school, preventive measures should be intensified among students of all types of schools, and the second hypothesis: school students are positive about social prevention carried out in schools, and such activities must be in schools, intensified due to the increasing scale of dysfunctional behaviors in adolescents (Moczuk, 2020).

37.9% of primary school students, 29.8% of general secondary school students, 31.8% of technical secondary school students and 0.5% of basic vocational school students participated in the research. In turn, 36.0% of the respondents are people up to 14 years old, 7.2% – 15–16 years old, 55.9% – 17–18 years old, and 0.9% did not provide their age. 50.7% of girls and 49.3% of boys participated in the research. The data analysis shows that 8.9% of respondents declare that their parents have primary education, 14.1% – basic vocational education, 31.6% – secondary education, and 45.4% – higher education (Moczuk, 2020).

The issues related to the analysis of the opinions of primary and secondary school students towards the prevention of dysfunctional behavior are part of the process of creating safety in the school environment, and thus refer to the activities undertaken by local government and local authorities in the field of local security (Moczuk, 2020).

Due to the possibility of various dysfunctional behaviors of minors in the school environment, the school should implement activities in the field of broadly understood prevention. Therefore, the respondents were asked whether they had met with the implemented preventive measures at their school. The distribution of answers to this question is presented in table 1.

Table 1. Implementation of preventive activities by the school in the opinions of respondents

Specification	Number	%
Definitely yes	97	8.9
Rather yes	386	35.4
Rather no	196	18.0
Definitely no	122	11.2
Hard to say	290	26.6
<b>Total</b>	<b>1091</b>	<b>100.0</b>

Source: own calculations.

The data presented show that, according to 44.3% of the surveyed students, preventive measures are implemented (total answers definitely and rather yes), and 29.2% believe that no (total answers definitely and probably not). As many as 26.6% of respondents do not have an opinion in this respect. Therefore, it can be concluded that the respondents notice that preventive measures are implemented in their schools, although the fact that one third of the respondents believe that nothing of the sort has happened, and one fourth has no opinion on this, does not allow an unambiguous assessment of such measures. On the one

hand, it is good that schools implement various preventive programs, but on the other hand, the lack of knowledge results from the fact that such programs do not reach everyone<sup>7</sup>.

Preventive activities undertaken by the school should cover three levels of preventive impact, including universal prevention – addressed to all students, selective prevention – addressed to high-risk groups, and indicative prevention – carried out in relation to high-risk students. Each of the levels of action should be adjusted to the degree of risk of dysfunctional behaviors existing in a given school environment (Szymańska, 2012), it is also important that such actions are undertaken as part of a partnership between students, parents and teachers, creating an opportunity for the proper flow of information about problems existing among students (Dubis, 2010). Therefore, students were asked what the most important tasks of the school in the field of prevention should be. The distribution of answers to this question is presented in table 2.

Table 2. The most important tasks of the school in the field of prevention in the opinion of the respondents (N=1091)

Specification	Number	%
Ensuring safety at school and during extracurricular activities	540	49.5
Ensuring safety at school events	270	24.7
Ensuring safety during school trips	344	31.5
Development of mature and responsible student behavior	564	51.7
Teaching how to deal with difficult and crisis situations	619	56.7
Development of physical fitness and sports habits	330	30.2
Raising awareness of the dangers of addiction	417	38.2
Something else	110	10.1
No answer	51	4.7

Source: own calculations.

Due to the fact that the respondents could choose more answers, they do not add up to 100%. On the basis of the data presented, it can be seen that for the respondents prevention is an important element of the educational process, the more so as they indicate that the aim of prevention at school should be to ensure safety at school and during extracurricular

<sup>7</sup> To investigate the interdependence between the dependent and independent dependent subscription of measure  $\chi^2$ . For the variable "school type"  $\chi^2 = 39.735399$ , the number of degrees of freedom (df) = 12, significance level ( $\alpha$ ) = 0.05, citizenship rights (p) = 7.955E-05, Pearson contingency  $\alpha$  control (C) = 0, 2129678 (see: Babbie, 2007), social relations. The strength of the relationship is weak, but it can be indicated that the most often convinced that schools implement various preventive activities are primary and technical secondary school students. For the variable "sex"  $\chi^2 = 30.092125$ , df = 4.  $\alpha = 0.05$ , p = 4.688E-06, C = 0.2045972 the relationship is present. The strength of the relationship is weak, but it can be indicated that boys most often indicate that schools carry out various preventive activities. For the variable "age"  $\chi^2 = 32.317714$ , df = 8,  $\alpha = 0.05$ , p = 8.169E-05, C = 0.1991637 the relationship exists. The strength of this relationship is weak, but it can be indicated that most often older students indicate that schools implement various preventive measures. For the variable the education of the "head of the family",  $\chi^2 = 14.4477576$ , df = 12,  $\alpha = 0.05$ , p = 0.27303337, C = 0.12987835 the relationship does not exist. This means that regardless of the education of the "head of the family", students have a similar opinion that schools implement various preventive measures.

activities, as noted by 49.5% of the surveyed students. On the other hand, 24.6% of the students pay attention to ensuring safety at school events. 31.5% of the students talk about ensuring safety during school trips. 51.7% of the students talk about shaping mature and responsible student behavior. Learning how to cope with difficult and crisis situations is mentioned by 56.7% of the students. 30.2% of the students pay attention to the development of physical fitness and sports habits. 38.2% of the students say that they are aware of the dangers of addiction. And other activities are mentioned by 10.1% of the students<sup>8</sup>. As one can see, the respondents are of the opinion that the most important task of the school in the field of prevention should be teaching how to deal with difficult and crisis situations, shaping mature and responsible behavior of the individual, as well as ensuring safety at school and during extracurricular activities.

The next question was about the preventive activities organized by the school by the respondents. The distribution of answers to this question is presented in table 3.

Table 3. Preventive activities organized by the school in which the respondents participated (N=1091)

Specification	Number	%
Programs related to expanding knowledge about addiction to psychoactive substances	455	41.7
Programs related to the subject of behavioral addictions, including addiction to gambling, the Internet, computer games, shopping, etc.	276	25.3
Activities allowing to expand the knowledge of recognizing the manifestations of risky behaviors among young people	210	19.2
Programs that provide up-to-date knowledge of specialist help for people with alcohol, drug and activity addiction problems	257	23.6
Undertakings to educate people about the risks associated with adolescence and adolescence as well as risky behaviors	246	22.5
Activities increasing the level of knowledge about the legal consequences of violating the law in relation to violence at school, drinking alcohol, using drugs, as well as cyberbullying, including stalking, hacking, recording and processing of unauthorized content	348	31.9
Other activities	68	6.2
None	346	31.7
No answer	31	2.8

Source: own calculations.

Due to the fact that the respondents could choose more answers, they do not add up to 100%. On the basis of the presented data, it can be seen that the respondents participated in a large number of preventive activities carried out by the school. 41.7% of the respondents participated in the programs related to expanding knowledge about addiction to psychoactive substances. On the other hand, 25.3% of the respondents participated in programs related to the subject of behavioral addictions, including addiction to gambling,

<sup>8</sup> A detailed analysis of the correlation between the dependent and independent variables using the  $\chi^2$  measure was not performed, because these variables are conjunctive, therefore it is not possible to calculate them.

the Internet, computer games, shopping, etc. 19.2% of the respondents participated in activities aimed at broadening the knowledge of recognizing symptoms of risky behavior among young people. 23.6% of the respondents participated in programs providing up-to-date knowledge about specialist help for people with alcohol, drug and activity addiction problems. 22.5% of the respondents participated in projects aimed at raising awareness of the risks associated with adolescence and adolescence as well as risky behaviors. 31.9% of respondents participated in activities increasing the level of knowledge about the legal consequences of violating the law in relation to violence at school, drinking alcohol, using drugs, as well as cyberbullying, including stalking, hacking, recording and processing of unauthorized content. And 6.2% of the respondents participated in other activities. As many as 31.7% of the respondents did not participate in any of them<sup>9</sup>. The fact that as many as one third of the surveyed students did not have the opportunity to participate in any preventive programs is a very negative information, regardless of how students are recruited to such programs.

The respondents were also asked to what extent participation in preventive programs met the needs of respondents related to counteracting addictions and promoting a healthy lifestyle. The distribution of answers to this question is presented in table 4.

Table 4. Satisfying the needs of respondents related to counteracting addictions and promoting a healthy lifestyle through participation in preventive programs

Specification	Number	%
Definitely high	99	9.1
Rather to a good degree	337	30.9
Rather, it does not meet the needs	181	16.6
It doesn't meet my needs at all	143	13.1
Hard to say	331	30.3
<b>Total</b>	<b>1091</b>	<b>100.0</b>

Source: own calculations.

Data analysis shows that, according to 40.0% of respondents, the needs related to counteracting addictions and promoting a healthy lifestyle are met by participating in preventive programs (total answers to a decidedly and rather high degree), and 29.7% are of the opposite opinion (total answers definitely and rather not satisfying). As many as 30.3% of respondents do not have an opinion in this respect. Therefore, it can be concluded that practically a large proportion of the respondents are satisfied with such programs, although a significant number of respondents refraining from responding must have some thought<sup>10</sup>.

<sup>9</sup> A detailed analysis of the correlation between the dependent and independent variables using the  $\chi^2$  measure was not performed as these variables are conjunctive, therefore it is not possible to calculate them.

<sup>10</sup> For the variable "type of school"  $\chi^2 = 39.044472$ ,  $df = 12$ ,  $\alpha = 0.05$ ,  $p = 0.00010347$ ,  $C = 0.21117265$  there is a relationship. The strength of this relationship, calculated using Pearson's contingency coefficient  $C$ , indicates that it is weak, nevertheless, it can be indicated that they most often meet the needs related to counteracting addictions and promoting a healthy lifestyle through participation in preventive programs by students of technical secondary schools. For the variable

The issue of school safety related to the preventive activities carried out was the subject of another question, which was whether they feel safe in the school attended by the respondents. The distribution of answers to this question is presented in table 5.

Table 5. The sense of safety at school in the respondents' opinions

Specification	Number	%
Definitely yes	350	32.1
Rather yes	554	50.8
Rather no	69	6.3
Definitely no	41	3.8
Hard to say	77	7.1
<b>Total</b>	<b>1091</b>	<b>100.0</b>

Source: own calculations.

The analysis of the data shows that 82.9% of the students feel safe at school (in total, the answers definitely and rather yes), and 10.1% do not feel such safety (total answers definitely and probably not). 7.1% of respondents do not have an opinion in this respect. Therefore, it can be concluded that the vast majority of respondents feel safe at school, which is very positive information<sup>11</sup>.

The issue of school safety is also related to the issue of positive perception of a given student, acceptance by colleagues, and appreciation by teachers. Therefore, the respondents were asked whether they were accepted and appreciated in the class. The distribution of answers to this question is presented in table 6.

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“sex”  $\chi^2 = 26.253787$ ,  $df = 4$ ,  $\alpha = 0.05$ ,  $p = 2.813E-05$ ,  $C = 0.1914317$  the relationship exists. The strength of this relationship is weak, and therefore girls more often than others meet the needs related to counteracting addiction and promoting a healthy lifestyle through participation in preventive programs. For the variable “age”  $\chi^2 = 32.856292$ ,  $df = 8$ ,  $\alpha = 0.05$ ,  $p = 6.537E-05$ ,  $C = 0.200778$  the relationship exists. The strength of this relationship is weak, so older students more often than others meet the needs related to counteracting addiction and promoting a healthy lifestyle through participation in preventive programs. For the variable the education of the “head of the family”,  $\chi^2 = 36.8429173$ ,  $df = 12$ ,  $\alpha = 0.05$ ,  $p = 0.00023689$ ,  $C = 0.20533281$  there is a relationship. The strength of this relationship is weak, and therefore students whose parents have secondary and higher education more often than others meet the needs related to counteracting addictions and promoting a healthy lifestyle through participation in preventive programs.

<sup>11</sup> For the variable “type of school”  $\chi^2 = 38.03221$ ,  $df = 12$ ,  $\alpha = 0.05$ ,  $p = 0.00015171$ ,  $C = 0.20851066$  there is a relationship. The strength of this relationship is weak, and therefore students of general and technical secondary schools have a higher sense of security in school related to the preventive activities. For the variable “sex”  $\chi^2 = 25.426028$ ,  $df = 4$ ,  $\alpha = 0.05$ ,  $p = 4.13E-05$ ,  $C = 0.1884595$  there is a relationship. The strength of this relationship is weak, and therefore boys have a higher sense of security in school related to the preventive activities. For the variable “age”  $\chi^2 = 15.826392$ ,  $df = 8$ ,  $\alpha = 0.05$ ,  $p = 0.0449335$ ,  $C = 0.1404175$  the relationship exists. The strength of this relationship is weak, and therefore people aged 14-16 have a significant sense of security in school related to the preventive activities carried out. For the variable the education of the “head of the family”,  $\chi^2 = 6.75109024$ ,  $df = 12$ ,  $\alpha = 0.05$ ,  $p = 0.87361466$ ,  $C = 0.0890924$  the relationship does not exist. This means that regardless of the education of the “head of the family”, everyone has a similar sense of security at school related to the preventive activities carried out.

Table 6. Sense of acceptance and appreciation of the respondent in the class

Specification	Number	%
Definitely a high sense of acceptance	310	28.4
Rather high sense of acceptance	542	49.7
Rather low sense of acceptance	77	7.1
Definitely low sense of acceptance	38	3.5
Hard to say	124	11.4
<b>Total</b>	<b>1091</b>	<b>100.0</b>

Source: own calculations.

The presented data show that 78.1% of the students have a high sense of acceptance and appreciation of the respondent in the class (total answers definitely and rather yes), and 10.6% are of the opposite opinion (total answers definitely and probably not). 11.4% of respondents do not have an opinion in this respect. Therefore, it can be concluded that over three-fourths of the respondents feel accepted and appreciated in their class<sup>12</sup>.

At the end of the research, the respondents were asked whether they are aware of the dangers of risky behaviors of young people. The distribution of answers is presented in table 7.

Table 7. The respondents' awareness of the dangers resulting from risky behaviors of young people

Specification	Number	%
Definitely yes	473	43.4
Rather yes	456	41.8
Rather no	69	6.3
Definitely no	40	3.7
Hard to say	53	4.9
<b>Total</b>	<b>1091</b>	<b>100.0</b>

Source: own calculations.

<sup>12</sup> For the variable "type of school"  $\chi^2 = 22.501068$ ,  $df = 12$ ,  $\alpha = 0.05$ ,  $p = 0.03227303$ ,  $C = 0.16149605$  there is a relationship. The strength of this relationship is weak, and therefore most often a high sense of acceptance and appreciation in the classroom is experienced by technical students. For the variable "sex"  $\chi^2 = 24.518817$ ,  $df = 4$ ,  $\alpha = 0.05$ ,  $p = 6.285E-05$ ,  $C = 0.1851421$  the relationship exists. The strength of this relationship is weak, so boys more often than girls have a high sense of acceptance and self-esteem in the classroom. For the variable "age"  $\chi^2 = 21.672427$ ,  $df = 8$ ,  $\alpha = 0.05$ ,  $p = 0.0055602$ ,  $C = 0.1638815$  the relationship exists. The strength of this relationship is weak, and therefore most often people aged 17-18 have a high sense of acceptance and self-esteem in the class. For the variable the education of the "head of the family",  $\chi^2 = 34.3747857$ ,  $df = 12$ ,  $\alpha = 0.05$ ,  $p = 0.00058857$ ,  $C = 0.19955328$  there is a relationship. The strength of this relationship is weak, and therefore students whose parents have higher and secondary education more often than others have a high sense of acceptance and self-esteem in the classroom.

The presented data show that 85.2% of the students are aware of the threats resulting from risky behaviors of young people (total answers: definitely and rather yes), and 10.0% do not have such awareness (total answers: definitely and probably not). 4.9% of respondents do not have an opinion in this respect. Therefore, it can be concluded that the vast majority of respondents are aware of the threats that “lurk” for young people<sup>13</sup>.

In order to summarize these considerations, it should be noted that school students are aware of the fact that minimizing the scale of unfavorable phenomena occurring at school, including dysfunctional behavior, is related to the intensification of preventive activities carried out among students of all types of schools, regardless of age, and such preventive measures increase the sense of security at school, the sense of acceptance and self-esteem of the student, as well as the increased awareness of various social risks in the internal and external environment of the school. The research also shows that schoolchildren have a positive attitude to preventive actions implemented in schools, although not all preventive measures are actively involved. However, they express their readiness to conduct prevention in schools due to the increasing scale of dysfunctional behaviors of young people.

#### 4. CONCLUSIONS

It should be noted that the aim of the research, which was to analyze the effectiveness of preventive measures implemented in schools, was achieved and the hypotheses were verified.

The first hypothesis, which was: in order to minimize the scale of unfavorable phenomena occurring at school, preventive measures should be intensified among students of all types of schools, was verified positively as the examined school youth is aware of the fact that minimizing the scale of adverse phenomena occurring at school, including dysfunctional behaviors, is associated with the intensification of preventive activities carried out among students of all types of schools, regardless of age, because such preventive activities increase the sense of security at school, the sense of acceptance and self-appreciation of the student, as well as an increase in awareness of the existence of various social risks in the internal and external environment of the school. On the other hand, the second hypothesis, which was: school youth has a positive attitude to social prevention implemented in schools, and such activities must be intensified in schools due to the increasing scale of dysfunctional behaviors of young people, was partially confirmed as research shows that the respondents have a positive attitude to preventive actions implemented in schools, but not all preventive measures take an active part. However, they

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<sup>13</sup> For the variable “type of school”  $\chi^2 = 20.822918$ ,  $df = 12$ ,  $\alpha = 0.05$ ,  $p = 0.05303445$ ,  $C = 0.15547431$  the relationship does not exist. Regardless of the type of school, all students are equally aware of the dangers of risky behaviors of young people. For the variable “sex”  $\chi^2 = 34.283606$ ,  $df = 4$ ,  $\alpha = 0.05$ ,  $p = 6.518E-07$ ,  $C = 0.2179747$  there is a relationship. The strength of this relationship is weak, and therefore girls are more often than boys aware of the dangers of risky behaviors in adolescents. For the variable “age”  $\chi^2 = 15.368305$ ,  $df = 8$ ,  $\alpha = 0.05$ ,  $p = 0.0523674$ ,  $C = 0.1383994$  the relationship does not exist. Regardless of age, all students are equally aware of the dangers of risky behaviors of young people. For the variable the education of the “head of the family”,  $\chi^2 = 20.8227341$ ,  $df = 12$ ,  $\alpha = 0.05$ ,  $p = 0.05303727$ ,  $C = 0.15547364$  the relationship does not exist. Regardless of the education of the “head of the family”, all students are equally aware of the dangers of risky behaviors of young people.

express their readiness to conduct prevention in schools due to the increasing scale of dysfunctional behaviors of young people.

Therefore, the following measures should be proposed in the field of preventive measures in schools:

1. Prepare teachers and school staff for activities in the field of prevention of dysfunctional behaviors. It should be related to the social integration of people and institutions dealing with social problems, which should lead to increasing knowledge about these problems and understanding the essence of the problems.
2. The local government should be more 'brave' in its actions to counteract dysfunctional behaviors among young people, and prepare legal instruments in the form of resolutions to effectively solve such problems and generate financial resources to conduct preventive actions.
3. Decision-makers must be convinced that the prevention of dysfunctional behavior is the most effective way to achieve the goal of a safe school.
4. A kind of prevention of dysfunctional behaviors should be public debates on social problems of school youth, with the participation of representatives of local authorities, the Police, school principals and teachers, school youth and their parents.

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## AIRCRAFT IN FIGHT WITH IRREGULAR FORCES IN THE FIRST DECADE OF THE 21ST CENTURY

It cannot be denied that the difference in the fight against irregular forces, which results from the non-standard operation of these forces, as well as the role played by the civilian population in this fight, have a significant impact on the state's definition of the conventions of its conduct. Many years of experience prove that the state's struggle with irregular forces is not only a very complex issue, but also a particularly difficult one to implement. Against this background, this study focused on empirically examining the use of aircraft (and the goal of its use) in combat with irregular forces. It also assessed problems that arise in aviation combat with irregular forces, while offering insights on the use of aviation in the fight against irregular forces. The research used document research as well as quantitative and qualitative analysis as its methods, and a systematic review of scientific literature on the use of aviation in the fight against irregular forces was conducted. The results of the research show that the fight in question requires the armed forces' use of aircraft/aviation in organized combat and non-combat operations. However, one should be aware that aviation has its specific attributes, and it should not be prioritized over other means of combat, as it is insufficient to defeat irregular forces in a short time, alone, or even jointly with other military components.

**Keywords:** armed forces, aviation, irregular warfare, irregular forces.

### 1. INTRODUCTION

Air safety covers various issues, depending on the category of entities, located at different levels of the analysis. The Russian annexation of the Ukrainian Crimea (March 18, 2014), followed by the outbreak of the Kremlin-inspired rebellion in the south-east of Ukraine, actively supported by raids of regular and irregular Russian troops, necessitates a broader look at air security (Fryc, 2015). At the same time, the experts' attention was drawn to a new form of security threat, which is irregular armed aggression below the threshold of open war (Fryc, 2015). This form, hailed as *a hybrid war*, turned out to be a serious challenge for state authorities, the reactivity of defense systems and the decision-making power of international security institutions.

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## 2. AVIATION AGAINST IRREGULAR FORCES – AFGHAN EXPERIENCES

The disintegration of the political and military blocs and the socio-political changes gave hope for international security. However, it soon turned out to be a deceptive feeling. The first decade of the 21st century revealed many contradictions and tensions that led to the escalation of threats to security in the local, regional and even global dimensions. The breakthrough year was 2001, when irregular forces launched an attack on the World Trade Center and the Pentagon. The international community decided to send military forces to fight irregular forces.

The end of the Russian intervention did not mean peace for Afghanistan at all. Post-war Afghanistan was actually only formally a state. In practice, it consisted of a dozen completely independently functioning entities, gathered around tribal leaders with considerable military power. The economy of these entities was based on incomes usually derived from illegal sources – primarily drug trafficking. Afghanistan's deteriorating internal situation was used by a fundamentalist Islamic group (the Taliban), which quickly gained considerable public support. The Taliban owed their successes to an innovative strategy of combining propaganda and force, ensuring the efficient restoration of peace in the occupied territories. By the end of the 1990s, the Taliban controlled nearly 90% of Afghanistan's territory (Maley, 2002). The Taliban's march for absolute power in Afghanistan was interrupted by the tragic events that took place in 2001. "One day after the tragedy, President G.W. Bush has received reports that quite clearly indicate al-Qaeda and the Afghan Taliban as the perpetrators and protectors of the attacks" (Reginia-Zacharski, Łoś, 2010). Based on the evidence at hand, the US decided to send an ultimatum demanding, inter alia, "handing over to the US authorities all al-Qaeda leaders and those involved in terrorist activities and supporting them, who were in Afghanistan, and the immediate and final closure of all terrorist training camps in Afghanistan" (Reginia-Zacharski, Łoś, 2010).

The ultimatum by the then Afghan authorities was rejected. In view of the above, the US and other NATO countries have become convinced that it is impossible to solve the Afghan issue through diplomatic channels and that it is necessary to use military forces. The use of armed forces by the international community has been confirmed by the relevant UNSC resolutions.

The first to enter the fight were special forces, which for some time had been penetrating the territory of Afghanistan in search of objects of attack. After the decision to use aviation, their task was also to guide air bombs and missiles at detected Taliban positions and the objects they occupied. The aviation precision weapons used amazed not only the Taliban and their allies. There was even a belief among Afghan allies of the USA that "the lasers used by the special forces to point at the targets of the air raids were some kind of death beams, as any outpost on which they fell would soon disappear" (Baylis, 2009). The air force carried out many attacks on its own, without the help of special forces. However, before it was decided to launch an independent attack from the air, the suspicious objects were first verified using reconnaissance means located in space. Positive verification triggered the take-off of planes – due to the lack of land bases at that time, all planes, apart from bomber planes, took off from aircraft carriers sailing off the Pakistani coast – and from maneuvering missiles with the task of making a precise attack.

The significant weakening of the Taliban by air attacks made it possible to begin *cleaning* the territory of Afghanistan of those forces that still remained. This task was entrusted to the troops of the Northern Alliance, i.e. loosely organized armies of tribal

leaders supported by the air force of the multinational task force. Air force officers cooperating with commanders of the Alliance's forces were responsible for detailed planning and coordination of aviation activities. The scope of air support concerned reconnaissance, direct fire impact and transport. Precision weapons were used wherever it was justified. Even supplies were thrown using Precision Airdrop Systems (PADS). In this way, food and medicine were also provided to the needy civilians (Leśnikowski, 2007).

After two months of intense *frontline* fighting, the Taliban was deemed to have suffered heavy casualties, and the rest had either dispersed or taken refuge in Pakistan. The authorities in Afghanistan were taken over by the interim government of H. Karzai. The multinational task force could therefore move on to stabilization activities related to the maintenance of order in this unstable country and the support of a democratically elected government.

“From 2003, the Taliban began to take root again in Afghanistan, and over the years their insurgency spread step by step across the country” (Giustozzi, 2009). The actions of small, a dozen or so combat units of irregular forces freely moving around Afghanistan, destabilizing the situation in the country, have become a practice. The growing activity of these formations showed that *the trumpeted victory* in the fight against the Taliban and their allies was illusory. This time, the opponent of the multinational task force, in addition to the Afghan Taliban – poorly trained and primitive in the tactics used, were mercenaries from other Muslim countries – better trained and more determined in combat and best prepared to fight – terrorists who passed through al-Qaeda training camps. In mid-2010, over 100,000 people faced each other in the Afghan theater of operations. soldiers of NATO countries with the most modern aviation ever used in a war, supported by tens of thousands of soldiers of the local army and 25 thousand irregular forces without aviation and only to a limited extent anti-aircraft weapons (Creveld, 2013).

The air force delegated to fight irregular forces was tasked with ensuring the continuity of deep-sea operations, direct support of land forces and the mobility of multinational task forces (Bartnik, 2009). By carrying out deep operations in areas controlled by irregular forces, the irregular aviation obtained information about their activity and had a fire effect, whenever there was an opportunity. For the search and tracking of irregular forces, unmanned aerial vehicles were primarily separated (LeHew, Collins, 2010). The optoelectronic and infrared devices with which the unmanned aerial vehicles were equipped gave reliable identification even if the irregular forces were well masked. The position of the located enemy in near real time was transferred to the zone's on-duty duty planes, also at night, of attack planes or armed transport planes. Having taken a convenient position, the crews of these planes immediately launched an attack. The cooperation between the aircraft operators of the ground observation system from the air and the crews of attack aircraft was similar. The crews of the latter, after reaching the short-term waiting zone, established radio communication with the aircraft of the ground observation system from the air circulating in a safe orbit. The aircraft operators of the ground observation system from the air indicated a specific object to be destroyed by transmitting its coordinates. When, within several dozen minutes, the attack aircraft crews did not receive an attack object, they were directed to a pre-designated zone (along the strategic communication route), where they searched and fought the enemy on their own (Gotowała, 2003). In order to ensure the continuity of the use of aviation, in this way, airplanes were used for refueling in the air.

Despite the significant involvement of the unmanned and manned aviation, the irregular forces operating in the depths of operation managed to avoid destruction. As soon as the

noise of the incoming air force formation was heard, the irregular force immediately divided into small groups that hid in the field. Hiding in the neighborhood was not always easy, especially for those groups who came from other territories. The ability to convert the time needed, for example, by helicopters to fly from an air base over irregular forces positions, was useful. In many cases, the arriving helicopters became useless as the target of the attack was no longer there (Giustozzi, 2009). The improvement took place after the introduction of unmanned aerial vehicles in the armed version, which, imperceptibly for irregular forces, detected them and began to destroy them immediately.

Due to the possibility of losses among own troops during the execution of direct support, efforts were made to provide the crews of attack aircraft with full situational awareness. The desired state was achieved through continuous duty in the designated zone of unmanned aerial vehicles and visualizing the position of own troops on the aircraft. Marker radios and electronic identifiers were helpful in the visualization. Moreover, each attack on the enemy object located in close proximity to own troops was carried out with the use of a precise means of destruction and was carried out under the supervision of a guidance navigator. However, when there was a fear of undesirable losses among the civilian population, attacking the enemy's object, it was decided to use precise measures with reduced firepower. Whenever it was tactically justified, the planes flew over irregular force positions while firing thermal traps (force show) (Cordesman, 2008). At that time, they counted on the awareness of the attacked irregular forces so that they would stop fighting, under the threat of returning and dropping their weapons.

A common practice for direct support was an air escort of a moving combat patrol or military convoy. The escort was carried out by forces of a specially created unit of ground forces, the so-called task forces (TFODIN – *Task Force Observe, Detect, Identify and Neutralize*). The task force included, inter alia, unmanned aerial vehicles and light turboprop airplanes equipped with video cameras and electronic reconnaissance sensors. These aircraft operated in a uniform system with brigade commanders and crews of combat helicopters, which neutralized the threat relatively quickly. The activity of irregular forces suspected of placing improvised explosive devices (IEDs) was monitored by analysts working on board the aircraft and unmanned aerial vehicle operators in the headquarters of the task force (Glass, 2009).

Although the introduction of task forces to combat irregular forces shortened the time from the detection of the threat to its elimination, it did not ensure complete safety for combat patrols or military convoys. Irregular forces conducting the actions took care to have direct communication with informants around the air base who sent them a signal about the departure of the combat helicopter. After receiving the signal, the irregular forces immediately dispersed and hid in previously prepared hiding places, making them difficult to find without the participation of additional ground forces.

The mobility of the multinational task force operating in the Afghan theater of operations (Afghanistan has no access to the sea and a poorly developed road system) required significant aviation involvement (Cordesman, 2008). Transport in the strategic dimension – between the place of permanent deployment of the military contingent and the theater of operations – was carried out by long-range transport aircraft, many of which were borrowed or leased from civilian carriers. However, due to the fact that civil aircraft were too demanding in terms of airport infrastructure and costly to endanger them, they transported soldiers and equipment only to a neighboring country that agreed to cooperate. From there, the transfer to Afghanistan was done in smaller military transport planes.

Removal of the wounded and soldiers whose shift has ended was performed in the reverse order. On the other hand, transport in the tactical dimension – in the theater of operations – was provided by helicopters, which efficiently and quickly transported units of the ground forces to the most distant places, where the fight against irregular forces was carried out.

After the end of *the frontline combat*, aviation was also active – albeit to a lesser extent – in conducting electronic warfare. Subsequent US military contingents to Afghanistan always carried a key electronic warfare aircraft that carried out at least one mission a day, seven days a week. In addition to the typical missions to disrupt communication systems used by irregular forces, airplanes conducted radio reconnaissance. The crew included not only electronic system operators, but also listening system operators – linguists who analyzed the intercepted radio correspondence on an ongoing basis (Knowles, Goodman, 2007). Noteworthy was the collaboration of aircraft conducting electronic interference with the aircraft intended for psychological activities focused on broadcasting radio broadcasts.

Since the beginning of the war in Afghanistan (as was the case in Iraq), US troops lacked flexible real-time communication. Ground force units had a problem communicating with combat aircraft, flying command centers or reconnaissance aircraft. This was due to the use of various tactical data links, communication protocols, and radio wavebands. Of course, satellite communication was a remedy, but it works with a certain delay, which in many cases determined the life of soldiers on the ground. The solution to the problems came with the development of the Battlefield Airborne Communications Node (BACN), which automatically translated various communication protocols. By the end of 2012, aircraft equipped with the BACN system departed nearly 50,000 hours in Afghanistan (Modrzejewska, 2013).

Although there were no airplanes and medium-range anti-aircraft systems on the side of the irregular forces, the aviation of the multinational task forces did not have complete freedom in the airspace. The real threat was posed by portable anti-aircraft systems, the irregular forces of which were in large numbers. Therefore, manned aviation only performed flights at safe altitudes and, in addition, the aircraft were equipped with flare launchers and on-board laser active defense systems. In the event of an immediate threat, the crews of the aircraft reduced the flight altitude below the missile range and increased speed, and if it was not possible to lower the flight, they made a flight with a snake at maximum speed and periodic course changes (Zieliński, 2012).

The problem that was faced, among others, by The US Army in Afghanistan has had significant operating costs for modern jet aircraft. Commanders began to consider introducing to the fight against irregular forces, cheaper to manufacture and operate lightweight turboprop multi-role aircraft and transport aircraft, without limiting the tasks assigned to aviation. These intentions were confirmed by the statement by A. Brookes

that you cannot win in Afghanistan, even by putting at stake all your potential built on the basis of the rules applicable in regular warfare, which is why we are actively opting for the creation of at least two rapid response air units equipped with airplanes with economical engines (AKLOT, 2010).

### 3. AVIATION AGAINST IRREGULAR FORCES – ISRAEL EXPERIENCE

From the point of view of the issue under investigation, i.e. the use of aviation to fight irregular forces, it is interesting to present another characteristic conflict between Israel and Hezbollah. In the last two decades of the 20th century, Israel went out of its way to combat Hezbollah, an Islamic Shi'ite political party supported and financed by Iran and Syria. He used all available tools, including the use of the armed forces. After each raid on a Hezbollah facility deployed in Lebanon, the spokesman for the Israeli Defense Forces made it public *that all of our planes had returned to base, and pilots reported certain hits* (Creveld, 2013). Despite the imbalance in combat measures in favor of Israel, Hizbullah's actions, instead of diminishing, intensified to such an extent that in 2000 Israel withdrew its troops from Lebanon. Social dissatisfaction was aroused by the fact that about 1.5 thousand Israeli soldiers died during the fights of that time (Gordon, 1998).

Six years later, after many minor skirmishes, war between Israel and Lebanon seemed inevitable. This time, the Israeli concept of fighting irregular forces assumed the maximum use of air dominance to create an asymmetrical advantage over the enemy, and thus avoiding own losses on land. According to this idea, aviation was to play a major role. Unmanned aviation was tasked with locating irregular forces, and manned aviation was tasked with destroying them after detection.

The Lebanese theater of action is mountainous and covered with vegetation, most of which are forests. A significant part of the human-friendly terrain is occupied by villages located on the slopes of hills, which in many cases serve as training bases for irregular forces. The Palestinian refugee camps played a similar role.

The fight against irregular forces in Lebanon is another experience resulting from the activities carried out in the urbanized area. The irregular forces surprised Israel not only with their excellent preparation, but also with the way they fight. A network of specialized shelters was built for command posts, ammunition stores and hiding places that were almost impossible to detect from the air. The quarters of religious and military leaders were located adjacent to civilian buildings, in densely built-up neighborhoods in Beirut. Some bunkers connected by tunnels reaching several dozen meters into the ground made it possible for many people to stay in them for several weeks without the need to replenish supplies. In the fight, the irregular forces used mainly missile means with which they terrorized the Israeli civilian population (Cieślak, Mróz, 2010).

For the Israeli aviation, this fight was the first in history in which air operations were carried out on a full scale, for 24 hours. per day, seven days a week, with an average of 350 combat flights a day. The air force, having 100 planes and 50 helicopters, performed nearly 15.5 thousand flights, half of which were made at night. Unmanned aerial vehicles were also used intensively (White, 2006). Although thousands of flights were made and enormous amounts of means of destruction were used, in addition to ruining Beirut and the surrounding area and destroying most of Lebanon's transport infrastructure, the degree of defeat of the irregular forces was far from what was expected. If justification can be found for destroying all bridges and many roads, the moot point is the destruction of fuel depots and gas stations. Taking into account the stocks and the lack of the need for maneuvers, it did not matter much for the irregular forces. On the other hand, the lack of fuel combined with interruptions in electricity supply made life difficult for the civilian population, causing a fuel crisis. On the one hand, civilians were forced to flee, and on the other hand, they were

given the possibility of movement (White, 2006). Among other things, it was for this reason that it was impossible to win the sympathy of the Lebanese community for the actions of Israel.

It was the same with the fight against missiles. The Israeli air force proved ineffective in countering rocket attacks from Lebanon, although a significant portion of long-range missile systems were destroyed. Short-range missile systems proved to be a problem. They were usually hidden inside concrete bunkers, dug into the ground or buried under vegetation. When the firing orders came in, they were raised to the firing position by means of hydraulic jacks. The constant search of potential sites convenient for the dislocation of these launchers did not help. They were almost impossible to locate from the air, and it was even more difficult to destroy them by the crews of high-altitude airplanes (Rubin, 2007). Therefore, contrary to earlier plans, it was decided to introduce land forces into Lebanon. The purpose of the ground forces was not so much to search for and destroy rocket launchers, but to reassure Israelis in a sense of victory, and irregular forces in a sense of defeat (Matthews, 2008).

Days after the UN Security Council approved the terms of the ceasefire, the fighting ended. Unfortunately, the conflict situation has not been resolved. Israel's lack of success in defeating irregular forces should be attributed primarily to a bad doctrine, which did not provide for the involvement of ground forces in direct combat. Irregular forces operating in urban areas were not an easy enemy to defeat only from the air, if only due to the limitations of aviation *per se*. The above leads to the conclusion that there was a victory for a small paramilitary organization over a regular, strong and modern army, at the same time questioning the views expressed in Israeli politicians as to the high effectiveness of aviation during combat operations.

#### 4. CONCLUSION

When talking about new challenges for the air force, it is worth emphasizing the opinions of experts who believe that wars will be fought not only between states, but above all within nations. This is explained by a clear crisis of sovereign states losing their monopoly on violence to various types of non-state entities (irregular forces). It should be noted that in the case of an irregular war, we are dealing with an adversary, usually focused on many smaller non-state entities, which are referred to as irregular forces. Time, space and the support received play a key role in the operation of irregular forces. Moreover, the above factors are determined by the specificity of evaporating conditions in a given area of operation and its surroundings. Thus, space is the key to success in the fight against irregular forces.

The arguments cited allow to state that the specificity and conditions of the fight against irregular forces require deliberate actions in order to eliminate the threat as soon as possible and restore normality in the functioning of the state. The above conditions also determine the component of the armed forces, which may be involved in the fight against irregular forces. At the same time, the international experience to date shows that it is the air force, and especially aviation, that seems to be the key element of this component, which, apart from the forces operating on land, is of the greatest importance for the effective fight against irregular forces.

Based on the conclusions from the research, it should be concluded that the idea of using aviation to fight irregular forces is not new and was born in the twenties of the last century. Nowadays, in the fight against irregular forces, both manned and unmanned aerial vehicles can be used, which can carry precision weapons. In addition, aviation, thanks to its attributes, can provide continuous performance of tasks throughout the theater of operations and the desired support depending on the stage and place of the confrontation. What's more, aviation is able to simultaneously carry out tasks related to reconnaissance, transport (evacuation) and fire support. It can also carry out information and airspace surveillance activities. With these actions, aviation can not only compensate for the combat deficiencies of other components participating in the confrontation, but also provide them with the advantage necessary to defeat irregular forces. An important issue from the point of view of the discussed issue is to signal the fact that aviation as part of the fire support of the land-based component can carry out activities related to the isolation of the battlefield, which are a derivative of this type of confrontation.

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## **THE POWER METRICS OF THE RUSSIAN FEDERATION TOWARDS THE G7 OVER THE PERIOD 1992–2020**

This paper deals with the subject of the strength of the key world powers in the years 1992–2020. These include the G7 group and the Russian Federation, which was suspended from the group, and so far has not been authorized to resume meetings with the G7 group. In this period, after Russia's exclusion, both regional and global rivalry grew in the world. This translated into the global imbalance of power and an overall geopolitical situation. In this paper, the author proposes a quantification of the power to measure power metrics. Based on the data from the World Bank and Military Balance, the general (economic), military and geopolitical potential of the Russian Federation, Canada, France, Germany, Italy, Japan, Great Britain and the United States was developed. The model of Mirosław Sulek was applied to calculate the power, which reflects the objective reasons for changes in shaping the potential of the aforementioned countries. The purpose of this article was to determine the changes in the power of the G7 countries and the Russian Federation in the years 1992–2020. This translated into the international balance of power and the struggle for influence in the world.

**Keywords:** Russian Federation, G7, powermetrics, security.

### **1. INTRODUCTION**

In the period of the development of the world economy, consumer societies, militarization and threats to the world, and globalization, alliances and unions of states, including informal ones, have played a great role in the 21st century. With the disappearance of the 19th-century concert of powers and the block system, international organizations began to gain importance in the coming decades. Already the League of Nations, and then the United Nations set new trends in world management and preventing any crisis. From the second half of the 20th century, the potential of countries concentrated in the European Communities, NATO, the European Union, NAFTA and now in the BRICS has been growing. Formal organizations further facilitated the development of their members in terms of trade or the power to influence other state or transnational entities. Also today, the greatest powers seek to gain influence on the politics of other countries through informal alliances and unions. The strength of an organization is measured by the strength of its

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members and how quickly they are able to reach a common position on important issues, especially when they are taken at the highest levels of government. One such an important informal organization that is an intergovernmental political forum is the G-7 Group, consisting of Canada, France, Germany, Italy, Japan, Great Britain and the United States. In addition to the above-mentioned powers of the world economy and military, representatives of the European Communities, and currently the European Union, also participate in the deliberations. Due to the fact that the European Union (Sulek, 2014) is a unique supranational organization – not a sovereign member state – the name "G-7 Group" was adopted. The EU is, therefore, not a named member and is not taking over the rotating presidency of the G7. Its presence at the G-7 summits began as early as 1977, two years after the first summit, held in France in Rambouillet, near Paris. Since the Ottawa Summit in 1981, representatives of the European Community participated in all working sessions. The G7 countries are officially organized around common values, pluralism and democracy in social and political life. The G-7 group, together with the complementary role of the G-20 group, influences the most important political decisions of global importance, although they do not have legal force and are primarily opinion-forming (Matera, 2006). However, they influence states through formal<sup>2</sup> institutions that are competent to introduce permanent changes in global politics<sup>3</sup>.

Representatives of other nations and international organizations are often invited as guests, with Russia being a formal member (within the Group of Eight, G-8) from 1997 to 2014. The beginning of cooperation with Russia was the summit in Naples in 1994 and Denver in 1997, while next year the new G-8 group was officially named. The co-opting of Russia was to improve world security in terms of disarmament, nuclear weapons control and counter-terrorism. The ongoing political and system transformation in Russia itself and in other countries of the former Soviet bloc was also of great importance. Western countries also wanted to have an impact on this, especially in terms of the possibility of granting loans in exchange for opening their markets and economies to investments by the West, especially in Russia. However, this cooperation ended in 2014, when the Russian Federation was suspended from membership rights<sup>4</sup> on 24 March. This was related to the illegal annexation of Crimea belonging to Ukraine, which was condemned by the other members (Scazzieri, 2017). As a result, the summit in Sochi, which was planned for June 2014, was cancelled. Again, the G7 countries with the European Union met at the Brussels summit, and since then Russia has not been invited to the G7 summits. On January 13, 2017, Russia announced that it would permanently leave the G8 (Batchelor, 2017).

The purpose of the paper was to identify the power of the key actors/superpowers of the modern world – the Russian Federation and the states gathered in the G-7 Group in 1992–2020. In this period, after Russia's exclusion, both regional and global rivalry grew

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<sup>2</sup> These include, inter alia, organizations cooperating with the United Nations, coordinated by the Economic and Social Council (ECOSOC).

<sup>3</sup> In particular, it is about: the UN Security Council (UNSC), the International Monetary Fund (IMF), the World Bank (WB), the World Trade Organization (WTO), the Organization for Economic Cooperation and Development (OECD) and many others responsible for political security, economic, military, humanitarian and ecological.

<sup>4</sup> On March 20, 2014 in the Bundestag, Chancellor Merkel stated: "As long as there is no political climate for such an important format as the G8, there is no G8, neither as a summit meeting nor as the G8 itself" (PAP).

in the world. This translated into the global balance of power and the overall geopolitical situation. The COVID-19 pandemic in recent years has also been of great importance.

## **2. THE POWER OF THE G7 GROUP AND THE RUSSIAN FEDERATION ACCORDING TO THE SULEK'S MODEL**

The power of states has been the subject of interest of rulers and politicians since time immemorial. The question of why some countries surpass others and win international rivalry also bothers today's researchers. Determining the parameters of the power of states nowadays is a challenge for many governments as part of the strategic studies being developed in order to achieve an increase in the geopolitical position in the future (Larsdotter, 2019). The measurement of power is dealt with in a science called powermetrics. It is the science that deals with the measurement of power, especially of states, it applies qualitative and quantitative methods to the study of international relations (Sulek, 2013). The intensification of research on these issues took place especially after the collapse of the USSR in 1991 and with the end of the bipolar system in the modern world. A special feature of the current international system is its instability. This, in turn, generates attempts to determine the position of a given country in the balance of power and development trends for the future in this regard. Thanks to this research, the role of geopolitics as a science was restored, especially badly treated in Europe subordinated to the Soviet Union after 1945.

The balance of power is the most important feature in international relations. The term was also used by Raymond Aron, according to whom: "The most important feature of any international system is the balance of power" (Aron, 1995). Adam Daniel Rotfeld pointed out that: "the international system is a specific dynamic system of inter-state relations, which protects – in the form of treaties or political agreements – a set of values and interests recognized by its creators, and defines the rules of conduct in their mutual relations and self-regulation mechanisms enabling the maintenance and development of and adapting the system to changing conditions" (Rotfeld, 1990). On the other hand, according to Bertrand Russell, "The basic concept of social sciences is power in the same sense in which energy is the basic concept of physics" (Russell, 2001). The balance of power between the Russian Federation and the G7 is also the subject of this paper. Polarization (polarity) is one of the main features of the international system. One can distinguish a unipolar system (based on the overwhelming dominance of one state), bipolar (consisting of two equal states with a significant advantage over the others) and multipolar (in which several dominant states have comparable power). Getting to know the estimates of economic, military and geopolitical power should lead to the improvement of countries' security strategies and affect sectors in which a given country shows downward trends or is not developing. When comparing the power of states, it should be considered on the level of generality, using fixed and measurable parameters in a given time unit, a specific space and the people who compose them. A synthetic assessment of the balance of power in quantitative terms shows two categories of power: general and military, and the economic (general) power consists of economic results (gross domestic product), demographic factors (population) and spatial factors (territory area). Military power consists of military-economic factors (military expenditure, which is part of GDP), demographic and military factors (number of active service soldiers) and spatial factors (territory area). Geopolitical power is calculated as the arithmetic mean of the economic (general) power and the double military power (the

appreciated role of the military factor in shaping the current balance of power). Relations between political units are these between the people who compose them, and take the form of cooperation, struggle and competition.

The obtained data on the above-mentioned factors are divided by the appropriate world values, and enter the obtained fractional values into the formula. After the operation is performed, we will get the power of states as a fraction of the world power.

- $P_e = PKB^{0,652} \times L^{0,217} \times a^{0,109}$ ,
- $P_w = W^{0,652} \times S^{0,217} \times a^{0,109}$ ,
- $P_g = \frac{P_e + (2 \cdot P_w)}{3}$ ,
- Markings:  $P_e$  – economic power (general),  $P_w$  – military power,  $P_g$  – geopolitical power,  $GDP$  – gross domestic product,  $L$  – population,  $a$  – territory,  $W$  – military expenditure,  $S$  – number of soldiers in active service.

It should be emphasized that the world is a competitive environment where there is a constant struggle for limited resources. The activity of states in this regard is based on human action and its systems (praxeology) (Sulek, 2012). It is also determined that competition for power is a zero-sum game. According to Hans Morgenthau, “the signpost that helps political realism find its way in the maze of international politics is the concept of interest defined in terms of power” (Morgenthau, 2010, p. 21).

The indicated model is a priori-deductive. The power exponents used by professor Sulek are related to the golden section of the line<sup>5</sup>. Power in these three dimensions is a stream of energy and means the amount of work done per unit of time (Sulek, 2004; Kiczma, Sulek, 2020). The concept of power is closely related to the concept of international position or status. Each measurement requires the use of specific units of measurement, the paper adopts 1 mir as an expression of the world's power. It follows that the power of individual states is a fraction of this amount. The obtained fractions can be multiplied by any numbers, if we multiply them by 100, we get the results as a percentage of the power of the world (then the power of the world = 100). In our case, it will be more convenient to multiply them by 1000 (then the world power = 1000), which means that we will express it in milimirs (abbreviation mM), i.e. thousandths of the world power. The statistical fundamental of the paper is based on data from the World Bank, the International Monetary Fund (IMF). The data on active duty and military spending in US dollars is derived in part from The Military Balance annuals published by the International Institute for Strategic Studies (IISS) in London and World Bank data. Table 1 shows the GDP of the G7 Group and the Russian Federation.

<sup>5</sup> “Golden division (Latin *sectio aurea*), harmonic division, golden proportion, divine proportion (Latin *divina proportio*) – dividing a segment into two parts so that the ratio of the length of the longer one to the shorter one is the same as that of the entire segment to the longer one. In other words: the length of the longer part is to be the geometric mean of the length of the shorter part and the whole segment”. For more see: [https://pl.wikipedia.org/wiki/Z%C5%82oty\\_podzia%C5%82\\_%cite\\_note-1](https://pl.wikipedia.org/wiki/Z%C5%82oty_podzia%C5%82_%cite_note-1) (access: 12.11.21); <https://encyklopedia.pwn.pl/haslo/4001815> (access: 12.11.21).

Table 1. GDP of the Russian Federation and the G7 Group at current prices in US dollars (billion)

Country	1992	2000	2010	2020
<b>The USA</b>	<b>6.520.000</b>	<b>10.252.000</b>	<b>14.992.000</b>	<b>20.937.000</b>
in % of avg the world	25.65	30.42	22.66	24.75
<b>Great Britain</b>	<b>1.180.000</b>	<b>1.658.000</b>	<b>2.482.000</b>	<b>2.708.000</b>
in % of avg the world	4.64	4.92	3.75	3.20
<b>Canada</b>	<b>0.572.000</b>	<b>0.744.000</b>	<b>1.617.000</b>	<b>1.644.000</b>
in % of avg the world	2.25	2.21	2.44	1.94
<b>France</b>	<b>1.401.000</b>	<b>1.493.000</b>	<b>2.643.000</b>	<b>2.630.000</b>
in % of avg the world	5.51	4.43	3.99	3.11
<b>Germany</b>	<b>2.132.000</b>	<b>1.943.000</b>	<b>3.396.000</b>	<b>3.846.000</b>
in % of avg the world	8.39	5.76	5.13	4.55
<b>Italy</b>	<b>1.320.000</b>	<b>1.144.000</b>	<b>2.134.000</b>	<b>1.886.000</b>
in % of avg the world	5.19	3.39	3.23	2.23
<b>Japan</b>	<b>3.909.000</b>	<b>4.968.000</b>	<b>5.75.000</b>	<b>4.975.000</b>
in % of avg the world	15.38	14.74	8.70	5.88
<b>Russia</b>	<b>0.460.000</b>	<b>0.259.000</b>	<b>1.525.000</b>	<b>1.483.000</b>
in % of avg the world	1.81	0.77	2.30	1.75
<b>world</b>	<b>25.416.000</b>	<b>33.704.000</b>	<b>66.165.000</b>	<b>84.578.000</b>

Source: own study based on data from the World Bank and the IMF.

The countries that make up the G7 Group are among the economic powers that developed before the Second World War, and especially after it. Some of them created the European Communities (France, Germany, Italy, Great Britain). Great Britain (due to the industrial revolution and colonial empire) and the USA (industrial revolution, the center of world finance, two world wars won) additionally had great importance in the 19th century, and in the 20th century, the United States gained dominance along with the USSR after 1945 military, especially economic. Japan entered high economic development after 1953, and Canada, despite a small population, has been one of the most developed countries in the world for several decades. All political units from the G7 Group were defined from the second half of the 20th century, as well as in the 21st century as the West, where societies adhere to a common civilization and a similar culture created thanks to globalization. On the other hand, as a result of the Bolshevik revolution and the defeat of the Third Reich in 1945, Russia built an empire based mainly on a strong army. The collapse of the USSR in 1991 also led to economic changes, crises and the construction of new opportunities in the field of trade in energy resources, the funds of which are allocated mainly to the development of military potential. The USA dominates the modern world in terms of GDP, its share in the world average ranged from 22% in 2010 after the perturbations caused by the crisis of 2007–2008 to 30% in 2000, before the attacks on the World Trade Center and before the wars in Afghanistan and Iraq. In absolute terms, US GDP growth is very visible from 1992 to 2020 and has more than tripled. Other G7 countries also achieved significant GDP gains: Great Britain more than doubled; Canada almost tripled; Germany and France almost doubled. Japan, on the other hand, from a strong global position – 15.38%, fell with

its GDP to less than 6% globally in 2020. The downturn in the economy started as early as 2010 in Japan, when its GDP peaked. Russia's GDP, on the other hand, decreased almost twice as compared to 1992. The following years, however, saw an economic boom, thanks to which the GDP increased 6 times. Currently, the COVID-19 epidemic has reduced GDP in most countries in recent years, but in 2021 there has been an economic rebound in many of them.

Table 2 presents the population relations of the countries under study.

Table 2. Population of the G7 Group and the Russian Federation in millions

<b>Państwo</b>	<b>1992</b>	<b>2000</b>	<b>2010</b>	<b>2020</b>
<b>The USA</b>	<b>256.514</b>	<b>282.162</b>	<b>309.327</b>	<b>329.484</b>
in % of avg the world	4.70	4.62	4.47	4.25
<b>Great Britain</b>	<b>57.580</b>	<b>58.893</b>	<b>62.776</b>	<b>67.215</b>
in % of avg the world	1.06	0.96	0.91	0.87
<b>Canada</b>	<b>28.371</b>	<b>30.685</b>	<b>34.004</b>	<b>38.005</b>
in % of avg the world	0.52	0.50	0.49	0.49
<b>France</b>	<b>58.851</b>	<b>60.913</b>	<b>65.028</b>	<b>67.392</b>
in % of avg the world	1.08	1.0	0.94	0.87
<b>Germany</b>	<b>80.625</b>	<b>82.212</b>	<b>81.777</b>	<b>83.241</b>
in % of avg the world	1.48	1.34	1.18	1.07
<b>Italy</b>	<b>56.797</b>	<b>56.942</b>	<b>59.277</b>	<b>59.554</b>
in % of avg the world	1.04	0.93	0.86	0.77
<b>Japan</b>	<b>124.425</b>	<b>126.843</b>	<b>128.070</b>	<b>125.836</b>
in % of avg the world	2.28	2.07	1.85	1.62
<b>Russia</b>	<b>148.380</b>	<b>146.597</b>	<b>142.849</b>	<b>144.104</b>
in % of avg the world	2.72	2.40	2.06	1.86
<b>world</b>	<b>5.453.000</b>	<b>6.114.000</b>	<b>6.922.000</b>	<b>7.753.000</b>

Source: own study based on data from the World Bank.

All G7 countries and Russia recorded a decline in the demographic position in percent worldwide. This is due to the aging of these societies and the large population growth in Asia, Africa and South America. These declines have been in effect since 1992 and are still ongoing. During this time, over two billion people came to the world in 30 years. In the analyzed years, only the USA increased its demographic position in absolute numbers – from 256 million to 329 million. During these thirty years the societies of Great Britain, Canada, France, Germany and Italy grew by several million. These increases were mainly due to the arrival of emigrants. The number of Japanese people fluctuates around 124–125 million with a marked downward trend. Russia, on the other hand, is depopulating the most in relation to other countries, it has lost over 4 million in the years indicated in Table 2.

Table 3 shows the area of countries, which also influenced the power of countries for centuries.

Table 3. Area of countries in thous. km<sup>2</sup>

<b>Country</b>	<b>area</b>
<b>The USA</b>	<b>9 833 517</b>
in % of avg the world	7.22
<b>Great Britain</b>	<b>242 495</b>
in % of avg the world	0.18
<b>Canada</b>	<b>9 984 670</b>
in % of avg the world	7.33
<b>France</b>	<b>551 500</b>
in % of avg the world	0.41
<b>Germany</b>	<b>357 376</b>
in % of avg the world	0.26
<b>Italy</b>	<b>302 073</b>
in % of avg the world	0.22
<b>Japan</b>	<b>377 930</b>
in % of avg the world	0.28
<b>Russia</b>	<b>17 098 246</b>
in % of avg the world	12.56
<b>world</b>	<b>136 162 000</b>

Source: own study based on UN data

Among the countries presented, the largest areas are Russia, Canada and the USA. The remaining countries have a much smaller area. The territory, however, no longer plays a similar geopolitical role in the modern world as it did in the nineteenth century or in the period until the end of World War II.

Table 4 contains data on military spending in billion US dollars.

World military spending increased 2.5 times from 1992 to 2020. The main world powers, wishing to maintain their position in the international balance of power, spent ever greater sums for this purpose. Between 1992 and 2020, the US more than doubled its defense spending from \$ 325 billion to \$ 778 billion. Also among the other G7 countries, increases in this expenditure in the years indicated in the table or small decreases are visible mainly due to the COVID-19 pandemic in recent years (Great Britain, Italy, Japan). Other countries such as Canada, France and Germany spent a little more on military in 2020 than in 2010 (SIPRI Military Expenditure Database, 2021). Russia (USSR) recorded a decline in defense spending until the end of the 20th century, which was mainly due to the collapse of the USSR. After 2000, however, there was a visible increase in these investments to the level of USD 61 billion in 2021. In relation to the USA, Russia's defense budget was 8 times smaller in 1992, 35 times smaller in 2000, and 12 times smaller in 2010 and 2020. In the percentage of the world average, the G7 countries have fallen in the last 30 years, at the expense of China and India in particular, but it must be remembered that the US spent over 40% of global defense spending in those years. Russia, despite having a large military arsenal on a global scale, spent more than 5% on the military in 1992, and 3% in 2020.

Table 4. Military expenditure of the G7 Group and the Russian Federation in US billion dollars

<b>Państwo</b>	<b>1992</b>	<b>2000</b>	<b>2010</b>	<b>2020</b>
<b>The USA</b>	<b>325.034</b>	<b>320.086</b>	<b>738.005</b>	<b>778.232</b>
in % of avg the world	44.51	43.12	44.78	40.34
<b>Great Britain</b>	<b>45.593</b>	<b>39.344</b>	<b>63.979</b>	<b>59.238</b>
in % of avg the world	6.24	5.30	3.88	3.07
<b>Canada</b>	<b>10.789</b>	<b>8.299</b>	<b>19.316</b>	<b>22.755</b>
in % of avg the world	1.48	1.12	1.17	1.18
<b>France</b>	<b>37.902</b>	<b>28.403</b>	<b>52.044</b>	<b>52.747</b>
in % of avg the world	5.19	3.83	3.16	2.73
<b>Germany</b>	<b>39.502</b>	<b>26.498</b>	<b>43.026</b>	<b>52.765</b>
in % of avg the world	5.41	3.57	2.61	2.74
<b>Italy</b>	<b>22.177</b>	<b>19.879</b>	<b>32.021</b>	<b>28.921</b>
in % of avg the world	3.04	2.68	1.94	1.50
<b>Japan</b>	<b>35.999</b>	<b>45.510</b>	<b>54.655</b>	<b>49.149</b>
in % of avg the world	4.93	6.13	3.32	2.55
<b>Russia</b>	<b>39.680</b>	<b>9.228</b>	<b>58.720</b>	<b>61.713</b>
in % of avg the world	5.43	1.24	3.56	3.20
<b>world</b>	<b>730.299</b>	<b>742.333</b>	<b>1.648.000</b>	<b>1.929.000</b>

Source: own study based on data from the World Bank and Military Balance.

The size of the armed forces also plays an important role in strengthening the military potential of states. Table 5 contains information on the number of active soldiers in active service without paramilitary forces of the G7 Group and the Russian Federation.

The US military potential is manifested not only by the number of military expenditure, but also by the number of active soldiers. Although the percentage of US troops is declining worldwide: from 7.83% in 1992 to 5% in 2020, in absolute numbers it is still very large and exceeds or oscillates around 1.5 million soldiers. Other G7 countries have also declined in percentages of the world average over the past 30 years. All of them also cut military positions and focused on building a smaller but fully professional army. Also subsequent crises: started in 2007 and the last one associated with the pandemic, led to a reduction in the number of jobs in the army, and therefore also budget expenditure on them. The remaining G7 countries, for instance in 2020, had a total of 1,013,000 soldiers, which constituted 73% of the number of soldiers in the American army. In addition to Japan, other countries are US allies in NATO, and the government in Tokyo supports many US interventions in the world outside of this organization. On the other hand, the Russian Federation inherited a large number of soldiers from the USSR, in 1992 there were almost 2 million, not including paramilitary forces, which could be quickly used to support or replace the regular armed forces. In the following years, however, the size of the army in terms of soldiers was reduced, but in 2020 the state still had 900,000 of them. However, as a percentage of the world scale, it is only 3.23% (Military Balance, 2020).

Table 5. The number of soldiers in active service of the G7 Group and the Russian Federation in thousands

Country	1992	2000	2010	2020
<b>The USA</b>	<b>1.920</b>	<b>1.455</b>	<b>1.569</b>	<b>1.380</b>
in % of avg the world	7.83	4.96	5.58	4.99
<b>Great Britain</b>	<b>293</b>	<b>213</b>	<b>174</b>	<b>148</b>
in % of avg the world	1.19	0.73	0.62	0.54
<b>Canada</b>	<b>82</b>	<b>68</b>	<b>65</b>	<b>67</b>
in % of avg the world	0.33	0.23	0.23	0.24
<b>France</b>	<b>522</b>	<b>389</b>	<b>342</b>	<b>204</b>
in % of avg the world	2.13	1.33	1.22	0.74
<b>Germany</b>	<b>442</b>	<b>221</b>	<b>251</b>	<b>181</b>
in % of avg the world	1.80	0.75	0.89	0.65
<b>Italy</b>	<b>471</b>	<b>503</b>	<b>359</b>	<b>166</b>
in % of avg the world	1.92	1.71	1.28	0.60
<b>Japan</b>	<b>242</b>	<b>249</b>	<b>260</b>	<b>247</b>
in % of avg the world	0.99	0.85	0.92	0.89
<b>Russia</b>	<b>1.900</b>	<b>1.427</b>	<b>1.430</b>	<b>900</b>
in % of avg the world	7.74	4.86	5.08	3.23
<b>world</b>	<b>24.533</b>	<b>29.353</b>	<b>28.133</b>	<b>27.642</b>

Source: own study based on data from the World Bank and Military Balance.

Table 6 presents the general (economic) power of the analyzed countries in the years 1992–2020.

Table 6. The economic (general) power of the G7 Group and the Russian Federation in mM, i.e. the world = 1000

Country	1992	2000	2010	2020
<b>The USA</b>	159.32	177.30	145.31	152.26
<b>Great Britain</b>	25.25	25.70	21.26	18.98
<b>Canada</b>	20.25	19.84	21.10	18.17
<b>France</b>	31.03	26.44	24.41	20.38
<b>Germany</b>	41.67	31.96	28.81	26.08
<b>Italy</b>	27.74	20.51	19.48	14.96
<b>Japan</b>	68.39	65.16	45.08	33.94
<b>Russia</b>	26.68	14.85	29.41	24.06
<b>world</b>	1000	1000	1000	1000

Source: own study.

General power is a product of the balance of forces that arose over a long period of historical development. The calculations of the general power based on Sułek's model presented in Table 6 indicate the sustained advantage of the USA over the other countries included in the power study between 1992 and 2020. After 2000, as a result of foreign interventions and the economic crisis (Drezner, 2019), the USA began to lose its position

mainly to China (Todd, 2003). As geopoliticians indicate, after 2010, the bipolar system began to emerge again, but in a new configuration: the USA – China, and not the USA – USSR (Russia), as in the past. Between 2000 and 2020, the US general power decreased by 25 mM, which is 7.06 mM lower than in 1992. The percentage of the US power also decreased by 14% between 2000 and 2020. Between 2000 and 2010, this change was even higher, amounting to 18%. Among the other G7 countries, there were declines in general power indicators between 1992 and 2020. The downward trend is visible when it comes to the power of Great Britain, Canada, France, Germany, Italy and Japan. The biggest decrease was recorded by Japan (by 34 mM and as much as 50%) and Italy (by 13 mM and 46%) between the power in 1992 and 2020. These declines, especially in Japan's position, can be described as spectacular. The general power of Russia fluctuated in the analyzed years between 1.5% in 2000 and 2.9% in 2010 in the world scale. In relation to the USA, the general power of Russia in 2020 was 6 times smaller, and in 2000 even 12 times smaller.

Table 7 shows the military power of the G7 and the Russian Federation between 1992 and 2020.

Table 7. Military power of the G7 Group and the Russian Federation in mM, i.e. the world = 1000

Country	1992	2000	2010	2020
<b>The USA</b>	254.84	226.08	237.73	216.81
<b>Great Britain</b>	31.45	25.37	20.00	16.64
<b>Canada</b>	13.98	10.77	11.10	11.26
<b>France</b>	34.57	25.57	22.14	18.09
<b>Germany</b>	32.67	20.62	17.44	16.82
<b>Italy</b>	22.32	20.06	15.27	10.95
<b>Japan</b>	27.15	30.29	20.67	17.28
<b>Russia</b>	68.54	23.68	47.51	40.21
<b>world</b>	1000	1000	1000	1000

Source: own study.

Table 7 shows that the largest and so far indisputable military power among the above-mentioned countries is the USA – between 216 and 254 mM per 1000 mM (the whole world). The percentage share of the US in the world's military power ranged from 21.6% to 25.5% between 1992 and 2020. The downward trend of this country is also visible in the table (loss of 38 mM and 15% of its power). The other G7 countries remain in a downward trend in terms of military power. Russia inherited a fairly significant position in this hierarchy from the USSR in 1992, i.e. 6.8% of the world's power. However, in the following years there were declines in this respect. In 2020, Russia's share amounted to 4% of the world's military power and was more than 5 times smaller than the US share. It follows that we are dealing with a unipolar system in which, according to geopoliticians, the USA still has a significant advantage over China in this respect, as well as over Russia, and even more so over other members of the G7 Group.

Table 8 contains references to the geopolitical power of the surveyed countries, its results are based on Tables 6 and 7.

Table 8. The geopolitical power of the G7 Group and the Russian Federation in mM, i.e. the world = 1000

Country	1992	2000	2010	2020
<b>The USA</b>	223.00	209.82	206.92	195.30
<b>Great Britain</b>	29.38	25.48	20.42	17.42
<b>Canada</b>	16.07	13.79	14.43	13.56
<b>France</b>	33.39	25.86	22.90	18.85
<b>Germany</b>	35.67	24.40	21.23	19.90
<b>Italy</b>	24.13	20.21	16.67	12.26
<b>Japan</b>	40.89	41.91	28.81	22.83
<b>Russia</b>	54.59	20.74	41.48	34.82
<b>world</b>	1000	1000	1000	1000

Source: own study.

The geopolitical power created on the basis of the resultant of general and military power is the third expression of state power. It includes economic and military aspects. Therefore, the military factor has a special share in its construction twice. According to researchers, recent years have led to the formation of a bipolar system with the US advantage over China (Zeng, Breslin, 2016). Among all the countries surveyed, a downward trend in geopolitical power between 1992 and 2020 is dominant. The US lost 28 mM of its power during this time, down 13%. Italy –50%, Germany – 45%, Japan – 44% and France – 42% of the geopolitical power in 30 years – experienced the biggest drops in percentages. Russia also recorded declines in this power over the period indicated, while also undergoing fluctuations. It reached the greatest geopolitical power in 1992 – 55 mM, the lowest in 2000 – 21 mM, and in 2020 its index was 35 mM (1000 all over the world), which was 5.5 times lower than the USA.

### 3. CONCLUSIONS

The G7 countries and Russia are still among the most important and strongest countries of our globe, along with China, India and Brazil. They actively pursue their foreign policies, striving to gain even greater potential in a resource-limited world. It is connected with the achievement of greater importance in the international arena. The presented dimensions of the general, military and geopolitical power of the G7 Group and Russia allow drawing the following conclusions:

1. The main goal of the G7 Group is to maintain its position in the world and participate in influencing the most important decisions taken in contemporary international relations.
2. These countries must compete more effectively for power with Russia, China, India and Brazil, which want to violate the international status quo and have a greater influence, for example, on the international financial system.
3. The position of the United States appears to be unwavering in the three types of powers studied, but despite its significant advantage over other countries, the country's power values are in a downward trend.
4. It will become increasingly difficult for the G7 to play a leading role in the world.

5. With the exception of the USA, the remaining G7 countries decreased their position in terms of power in 1992–2020 by as much as 40-50%. In the period after World War II, these countries dominated the world economically, and thanks to the alliance with the USA also militarily and politically.
6. In the modern world, the G7 countries are struggling with increasing economic (inflation, economic crises, lowering GDP, high taxes, expensive life) and demographic problems (aging populations).
7. The G7 countries (especially the USA) had (Japan, Italy, Germany, France) in 1992 and now (Japan, Germany) have an overall (economic) power advantage over Russia.
8. In the field of military power, there is a huge advantage of the USA in the world over the countries surveyed in the paper. All other countries, as well as Russia, are in a downward trend in this respect. The level of their military power since 1992 has declined quite significantly over the 30 years to 2020 on a global scale.
9. In terms of geopolitical power, the USA has an unquestionable position among the analyzed countries, but since 1992 they have also been in a downward trend (as well as all other G7 countries, including Russia) in favor of developing Asian and African countries, which as part of a zero-sum game of struggle for power, while developing, take over power from other countries.
10. Russia reached the lowest values of general, military and geopolitical power at the turn of the millennium in 2000. On the other hand, the highest US figures for general power were achieved in 2000, military and geopolitical in 1992.
11. Russia has dropped out of the bipolar system, and China will take its place next to the US, which will have a significant advantage in this configuration, especially when it comes to military power.

The increasing success of underdeveloped countries in the world in recent decades has resulted in a growth in their position on the international arena. Due to the fact that the struggle for power is a zero-sum game, it weakens the position of Western countries, i.e. the G7 Group in particular. Analysts predict that the decline in US power will be halted. On the other hand, Fareed Zakaria stated that US domination under the new international order after the epidemic was no longer possible (Zakaria, 2020). China, on the other hand, may fall into a development trap similar to that which Japan is currently in. In relation to Russia, analysts believe that its power will decline. However, it should be remembered that Russia is strengthening its global position through participation in the UN Security Council, military power (including the possession of nuclear weapons) and a raw material and energy power.

The indicated synthetic measures of power may be helpful in developing an international/national security assessment. It also influences the design of state security strategies (Strachan, 2019).

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## **QUALITY OF LIFE IN SELECTED PSYCHOLOGICAL CONCEPTS**

This article presents a short history of the term, “quality of life”, its origins and related terms/concepts as well as its use in disciplines other than psychology. The article presents several general models and concepts of the quality of life in psychology, and among many different theories and specific concepts of the quality of life, it describes in detail the less known Straś- Romanowska's psychological personalistic and existential concept of the quality of life, which concentrates on four dimensions: psychophysical (biological), psychosocial, subjective, and metaphysical (spiritual). This concept of the quality of life derives from person-oriented psychology and philosophical anthropology. It presents a holistic and subjective view of the quality of life of a human, and it concentrates on the experiences, relationships, actions and development of a person.

**Keywords:** quality of life, psychological concepts, well-being.

### **1. INTRODUCTION**

The concept of quality of life appeared in social sciences after World War II. In the 1950s, quality of life concepts were increasingly used in economics, social policy, medicine, sociology and psychology (Trzebiatowski, 2011). In the second half of the twentieth century it was noted that not only life expectancy was important, but above all its quality (Roop et al., 2011). In psychology, one of the first studies on the quality of life was the work of Campbell, Convers and Rogers (1976). They evaluated changes taking place in the psychological dimension of human life. The basic indicator of the quality of life in these studies was perceived satisfaction in such areas as family, marriage, residence, apartment, neighborhood, friends and acquaintances, health, housework, work, education level, usefulness of education, leisure time, standard of living and possessed savings. According to Campbell, quality of life is a result of personal properties as well as objective and subjective indicators of well-being. The factors highlighted by Campbell that determine a high or low quality of life can be considered in the category of needs (Campbell, 1981).

Nowadays, however, there is no uniform definition of the quality of life, and various authors distinguish other aspects and areas of this variable and use various tools to measure this phenomenon (Roop et al., 2011). There are also various concepts related and close in meaning, sometimes used interchangeably with the concept of quality of life, such as happiness, well-being, life satisfaction (Armstrong and Caldwell, 2004).

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Quality of life is often equated with well-being, defined as cognitive and emotional assessment of one's own life, including experiencing pleasant emotions, low levels of negative emotions, and high levels of life satisfaction (Diener, Lucas, Oishi, 2002). The most commonly used theories come from the philosophical approach to good life: hedonism and eudaimonism. Subjective well-being consists of high positive affect, low negative affect and high life satisfaction, which is a conceptualisation of emotional functioning (Joseph and Wood, 2010). In this approach, well-being means a satisfying and emotionally pleasant life, in simple terms – a happy life. Eudaimonistic well-being, also called psychological well-being, refers to a full and valuable life, accompanied by the use of its potential and personal growth (Ryan and Deci, 2001). Subjective well-being and psychological well-being are two separate constructs derived from different theoretical concepts. They are also two separate factors (Linley, Maltby, Wood, Osborne and Hurling, 2009).

## 2. QUALITY OF LIFE – TERMINOLOGICAL ISSUES

The concept of quality of life is currently used in many contexts, including politics, education, advertising, social sciences and healthcare (Roop, Payne and Vallerand, 2011). In the economic dimension, quality of life is identified with consumption and material status (Bańka, 1994). Studies on the relationship between material level and happiness and well-being have shown that the relationship between wealth and happiness is weak ( $r = 0.20$ ; Diener, Sandvik, Seidlitz, Diener, 1993). It has been proved (Diener, Horwitz and Emmons, 1985) that wealthy people are not much happier than others. Studies on the relationship between the wealth of citizens of different countries and their level of well-being have shown that people in rich countries are happier only until they achieve a certain level of wealth, and after exceeding it, the relationship between wealth and happiness weakens. However, in poor countries this relationship is stronger. Citizens living in the richest countries were not happier than those in countries with average per capita incomes (Myers, 2000). In examining the relationship between the wealth of a given country and the well-being of citizens over the years, it turned out that the increase in wealth of a given population does not have to be accompanied by greater declared happiness, and often it is the opposite. In the United States, coexistence of increasing material well-being with decreasing social well-being has been observed (Myers, 2000). The importance of the material aspect of quality of life, intuitively recognized as crucial by many people, has been diminished due to research on correlates of human happiness and well-being.

In the 1960s, quality of life assessment was mainly based on objective indicators such as income, place of residence, employment and education (Morrison and Morrison, 2006). The importance of subjective perception of quality of life has been highlighted in the concept of the World Health Organization (WHOQOL Group, 1994). At present, subjective quality of life is assessed more often and self-description methods are used. As de Walden-Gałaszko (1997) notes, the quality of life, initially expressed in the state of ownership (the “have” area) has been extended to “be” areas, such as freedom, health and happiness. This led to the definition of a general assessment of the quality of life as a picture of one's life position, carried out in a selected period of time, i.e. the assessment of a fragment of life in the relationship between man and his external and internal environment. Life position is an objective situation, independent of human views and emotions, e.g. the degree of reduced mobility. Assessment of the situation is conditioned by the experiences of the assessor and therefore is largely subjective, especially when it is a direct assessment of one's own

situation. Although the assessment of life position can be made more objectively by outsiders, such as a psychologist or doctor, this is rather additional information, and the assessment of one's own quality of life is considered the most important and correctly obtained source of information (de Walden-Gałaszko, 1997). To emphasize the subjectivity of the quality of life and its distinction from economic and medical objective indicators, the concept of subjective quality of life, perceived quality of life, subjective well-being and psychological well-being is used (Oleś, 2010).

There are many definitions of quality of life, however, as King (2011) notes, most researchers agree that this is a multidimensional, subjective and dynamic construct consisting of both positive and negative aspects of life (e.g. Grant, Padilla, Ferrel and Rhiner, 1990; Mellon, 2002). The multidimensionality of quality of life is expressed in areas such as physical, psychological, social, somatic and spiritual (Schipper, 1991). The physical dimension usually includes strength, energy, the ability to cope with daily activities and self-service. The psychological dimension often includes symptoms such as anxiety, depression and fear. The social area refers to relationships with family, friends, work colleagues and the community. The somatic aspect of quality of life means symptoms of the disease and side effects of treatment, e.g. pain. The spiritual dimension refers to the perception of purpose in life and meaning (King, 2011). The measurement of quality of life is most often done using self-description tools. Quality of life is usually measured on a continuum, as an individual perception that can change over time.

### 3. GENERAL MODELS OF QUALITY OF LIFE

Several general quality of life models have been described in the literature. Bortwick-Duffy (1992; after: Oleś, 2010) distinguishes three types of quality of life models: 1) quality of life as the quality of life of an individual, 2) as satisfaction with living conditions, and 3) as the sum of living conditions and satisfaction unit. Quality of life understood as the quality of living conditions is the sum of assessments of objective living conditions, such as physical health, resources, wealth, housing, occupation, social relations as well as social and economic determinants of socioeconomic status. The quality of life in this approach is determined by assessing the living conditions compared to the general population, and subjective assessments of life satisfaction are not taken into account. In the second approach, quality of life is synonymous with contentment in life in its various areas, such as material status, health, work, education, development, social relations, marriage and others. So understood life satisfaction is influenced by both objective living conditions and subjective factors, e.g. health assessment. In the quality of life understood as the sum of living conditions and individual satisfaction, an objective assessment of various areas of life is taken into account, expressed by biological, material, social and psychological indicators as well as a subjective assessment of each of these areas. This subjective feeling towards particular areas of life takes the form of satisfaction or well-being.

Definitions of quality of life include definitions emphasizing achievement of personal goals, sense of contentment / happiness, social utility (Burckhardt, 2000), as well as definitions expressing quality of life in a holistic way (Felce and Perry, 1995). Felce and Perry in their holistic quality of life model include: physical well-being, material well-being, social well-being, emotional well-being and well-being in the sphere of productivity. The authors of this approach therefore define the quality of life as general well-being, listing sixteen specific areas: mental health, physical health, sexual sphere, social skills, exercising, employment, education, leisure, recreation, sport, friendship,

nutrition, home life, initiative and social life, marriage and participation, family. Quality of life can be assessed at several levels: personal values, life satisfaction and objective living conditions (Perry and Felce, 2002). This concept therefore combines objective and subjective indicators of quality of life.

A similar approach to the quality of life, which takes into account objective and subjective aspects, is presented by Sęk (1993). The quality of life in this approach is defined as the result of valuing various spheres of life and life understood as a whole. The subjective quality of life is a subjective and cognitive-emotional category, which is expressed by means of life satisfaction and can take the form of a temporary sense or a generalized attitude towards life (Adamczyk and Sęk, 1997). Typology of quality of life includes both objective living conditions (favorable or unfavorable) and subjective assessment of the quality of one's own life, positive or negative. These two dimensions divide the perceived quality of life into four categories. Objectively favorable living conditions co-occurring with a positive assessment constitute "justified satisfaction". The occurring negative assessment of life under objectively favorable conditions sets the "dilemma of dissatisfaction". A positive assessment of life in objectively unfavorable conditions gives a "satisfaction paradox". Negative assessment of life coexisting with adverse conditions means "justified dissatisfaction". One can also distinguish three common health concepts formulated by patients (Sęk, 1993).

The first is the biomedical definition, according to which health is only the absence of symptoms of the disease. The second of the colloquial definitions includes health as a set of objective features constituting human resources, such as resilience or constitutionally conditioned potentials. The third definition equates health with a sense of biological, psychological and social well-being.

#### **4. THE WORLD HEALTH ORGANIZATION (WHO) QUALITY OF LIFE MODEL**

The WHO constitution defines health as "a state of complete physical, mental and social well-being, not just a lack of illness ...". From this definition, it follows that measuring health and health effects must include not only an indication of changes in the frequency and severity of the disease, but also an assessment of well-being. This can be done by assessing the improvement of quality of life related to healthcare.

The concept and model of quality of life developed by the WHOQOL Group (1994) refer to this definition of health. The concept of quality of life is defined by WHO as "the individual's perception of his position in life in the context of the culture and value systems in which he lives, and in relation to his goals, expectations, standards and fears", emphasizing the subjectivity of this phenomenon (WHOQOL Group, 1995). The WHO quality of life covers six general areas and 24 specific aspects of quality of life. The overall dimensions of the quality of life in this model include physical health, mental state, level of independence, social relationships, environmental features and spiritual area. Therefore, the quality of life is considered a broad concept, which is influenced in a complex way by a person's physical health, mental state, level of independence, area of social relations, personal beliefs and their relationship with the environment.

The physical sphere in this model includes such components as sensory sensations, energy and fatigue, pain and discomfort as well as sleep and rest. The psychological domain

contains subcategories such as body image and appearance, negative feelings, positive feelings, self-esteem and mental processes (thinking, learning, memory and concentration). The dimension of independence includes motor independence, daily activities, ability to communicate, dependence on medical substances and medical assistance and the ability to work. The area of social relations is personal relationships, experienced social support and supporting other people. The environmental dimension includes elements such as financial resources, freedom and physical security, job satisfaction, health and social care, home environment, access to new information, leisure and leisure time, physical environment (pollution, noise, traffic, climate) and transport. The spirituality / religion / personal beliefs dimension includes religious beliefs and practices (WHOQOL Group, 1998). The quality of life in this concept is a multidimensional construct referring to the physical and mental health of a person and his relationship with the physical and social environment, including his level of independence as well as views and beliefs. The quality of life in this approach is subject to subjective assessment, embedded in a broad cultural, environmental and social context, including many factors. Therefore, the concept of quality of life is not synonymous with terms such as health, lifestyle, mental state, life satisfaction or well-being, although these may be elements of quality of life (Oleś, 2010). According to WHO (1997), measuring quality of life can improve patient-physician interactions by better understanding how disease affects the patient's quality of life. WHO, in cooperation with fifteen centers around the world, has developed two tools for measuring the quality of life (WHOQOL-100 and WHOQOL – BREF), which can be used to study people living in different cultures, while allowing comparison of the results of people from different societies and countries.

According to WHO, these tools have many uses, including in medical practice and scientific research. Important aspects of the quality of life are highlighted on the basis of statements made by people suffering from various diseases and health professionals living in different cultures. The WHOQOL quality of life measurement tool is currently available in more than twenty languages (WHO, 1997). The concept and definition of the WHO quality of life is most often used in psychological research of this variable.

##### **5. PERSONALISTIC AND EXISTENTIAL CONCEPT OF M. STRAŚ-ROMANOWSKA'S QUALITY OF LIFE**

In psychology, in addition to external categories of quality of life, subjective factors such as the value system, individual life goals, aspirations and life history have also been taken into account. This resulted in the concept of “sense of quality of life”, which includes the experience and experience component of human regulatory processes (Derbis, 2000). The sense of quality of life has an individual, individual dimension and involves more mental processes compared to the quality of life (Derbis, 2000; Kowalik, 1993; Straś-Romanowska, 2005 [see: Mróz, 2011]).

The personalistic existential model of quality of life comes from the current of person-oriented psychology and philosophical anthropology (Straś-Romanowska, 2005). In person-oriented psychology, the subject of research is man as an individual, complex and irreducible whole, and elements of mental life are recognized against the background of this whole. In addition, the basic human attributes are included in this trend: reflective awareness, intentionality and moral sensitivity. From the methodological point of view, person-oriented psychology includes, in addition to nomotetic research, also idiographic research and respects views and research results from various fields of knowledge about

man, favoring eclecticism and holistic views regarding complex phenomena. Philosophical anthropology, mainly personalism, existentialism and the philosophy of dialogue provide assumptions about human life. It allows to define human life as existence and being -in-the-world, that is, conscious and reflective existence (Baran, 1991). His main forms are experiencing the world and yourself in the world, being in dialogue with others, intentional action and creative personal development (becoming). These are specific forms of the sense of quality of life.

Experiencing the world and yourself in the world is a complex, holistic and irreducible cognitive process that involves all mental (emotional, intellectual, image and symbolic) functions, not just emotional and sensual experience (Straś-Romanowska, 1992). An important element of experience that plays a significant role in making subjective assessments (including assessing one's own life) is reflective thinking, which is based on postformal mental structures and becomes active with age. The effect of these experiences are meanings that set subjective criteria for evaluating events and making important choices, as well as shaping the concept of the world and oneself in the world (Straś-Romanowska, 2005). The most important experiences related to oneself and to higher values (like truth, goodness and beauty) create an individual psychic atmosphere that accompanies and dynamizes human activity.

Being in dialogue with others is related to the dialogical nature of human nature. Dialogue is a direct relationship with other people, the world of nature and culture, transcendental beings and also with ourselves. It is a direct bond based on full and authentic openness to another, characterized by unconditional acceptance, and its opposite is existential loneliness. Staying in a dialogue with others is a primary human experience and a way of existence. Above all, however, it is a condition of harmony and harmony with the world and a sense of community, as well as realistic self-knowledge and full self-acceptance.

Intentional actions are conscious and goal-oriented behaviors that adapt to changing environmental conditions and provide a source of satisfaction, a sense of control and self-esteem. In addition to the goal of activity, intention is also important, meaning sense of behavior and justifying value, which means that the subject is aware not only of what he is pursuing, but also why he is pursuing a given goal. It provides sense in its own actions.

Becoming, or creative personal development, runs differently at different stages of life. In childhood and youth, development is geared towards social adaptation and takes place through the processes of maturation and learning. In adulthood, however, the role of interpretation and reinterpretation of accumulated experiences dominates in development. The goal of development is internal and subjective adaptation, which involves the integration of mental life structures, and spiritual and existential adaptation, which consists in identifying and verifying the compliance of one's actions with the message received through absolute values and transcendental phenomena. The most important manifestations of subjective and existential adaptation include the harmony of thoughts, feelings and actions, commitment to actions that give a sense of fulfillment as well as joy of life and a sense of meaning even despite difficulties encountered (Straś-Romanowska, 2005).

Subjective existence, called existence, is the distinguishing feature of a person. Existence (or being-in-the-world) means experiencing and experiencing one's own existence in relation to other beings and intentionally referring to reality, to other people, to oneself and to values (Luijpen 1972; Krasnodębski, 1986; after: Straś-Romanowska, 1995). A special form of intentional, conscious way of existence is self-awareness, i.e.

experiencing the events of one's own life, a way of responding to them, reflection on oneself and the sense and purpose of one's existence (Straś-Romanowska, 1995).

The quality of life in this concept means a way of life and accompanying feelings. It includes the type of individual experience, relationships with people, the surrounding world and with oneself as well as the type and effects of implemented activities, personal development and emotional mood occurring in the implementation of a given way of life (Straś-Romanowska, 2005). The quality of life is assessed by the assessor, and therefore it is a subjectively assessed quality of life. The quality of life assessment is the answer to the question "how a person lives" and "to what extent he is happy with his way of life" (Straś-Romanowska, 2005). In this concept, conscious, reflective experiencing, being in a dialogue with others, intentional actions and creative development take place on various dimensions (such as experiences, relationships, actions and development). Four such dimensions have been distinguished: biological (psychophysical), social (psychosocial), subjective and spiritual (The psychophysical area includes human biology, drives, physical appearance, temperament and vitality. The biological dimension in the form of experiencing the world and oneself in the world includes physical well-being. The dialogue of this dimension is manifested in the understanding and acceptance of one's body. Intentionality includes health-promoting behaviors, and creative development takes the form of optimal aging. The quality of life in this dimension of mental life means biological adaptation. It is governed by the principle of homeostasis, which covers the biological needs of the body. The affective components of this mental life are physical pleasure and pain.

The psychosocial sphere is social relations, expectations of the environment, level of adaptation, establishing and maintaining emotional bonds, acceptance and self-esteem. Experiencing the world and yourself in the world in dimension psychosocial takes the form of a sense of security and social power. Dialogue in this dimension includes understanding with others and a sense of community. Intentionality manifests itself in social behavior, such as performing roles and completing tasks. Becoming in this dimension means transgression through the increase of competence and social power. The quality of life in this dimension of mental life takes the form of social adaptation. It depends on meeting the principle of heteronomy, i.e. living in harmony with the environment and meeting social requirements. Satisfaction (pride, pragmatic sense) and dissatisfaction (annoyance, disappointment, failure) are the affective components of this dimension's mental life.

The subjective aspect of quality of life means emphasizing your individuality, independence, isolation from the social background, taking responsibility for your own choices and decisions, the possibility of self-realization, being authentic and developing your own interests. The subjective dimension in the form of experiencing includes a sense of freedom and authenticity, i.e. being yourself. Dialogue in this dimension is manifested in self-understanding and self-acceptance as well as harmony with oneself. Intentionality includes behaviors that respect self-interest. Becoming happens through self-updating. The quality of life in this dimension of mental life means subjective adaptation. It is governed by the principle of autonomy, and the affective components of mental life in this dimension are the joy of existence (e.g. flow experience) and the burden of existence.

The metaphysical sphere includes spirituality, the realization of universal and timeless values, such as good, truth, beauty and religious experiences, also giving meaning to life, also in the context of transience. The development of this sphere is conducive to shaping moral responsibility and declarations of conduct in accordance with one's conscience. The experience of the world and oneself in the world in the metaphysical dimension occurs in

the form of metaphysical experiences (e.g. truth, good, beauty) and border experiences (suffering, death). The dialogue of this dimension includes metaphysical identity, i.e., consent to fate and “agreement” with transcendent beings. Action manifests itself in behaviors that realize absolute values. Becoming in this dimension means self-transcendence. The quality of life in this dimension of mental life takes the form of spiritual / existential adaptation, depending on the principle of homonomy, i.e. living in harmony with moral principles and spiritual development, leading to a sense of meaning in life, an affective component of the mental life of this dimension. His opposite is spiritual suffering, i.e. existential emptiness and despair (Straś-Romanowska, 2005).

In the above concept, quality of life is a complex and multidimensional phenomenon. The spheres of existence (psychophysical, psychosocial, subjective and metaphysical) exert an influence on the internal integrity of man in the development process, they are also relatively independent from each other (Straś-Romanowska and Frąckowiak, 2007). The model of personal spheres is a harmonious arrangement. The metaphysical sphere is a factor that organizes a personal whole.

In the Straś-Romanowska concept (2005), the psychophysical and psychosocial sphere belong to the naturalistic dimension, i.e. the social world. The subjective and metaphysical sphere belong to the spiritual dimension, which is defined by searching for the meaning of existence. Psychosocial, subjective and metaphysical spheres belong to the area of culture in which behavior patterns, values, and ways of feeling and reacting in typical situations are located. This concept can be incorporated into eudaimonistic concepts by referring to one's own experiences and attributing great importance to realizing values.

## 6. CONCLUSIONS

The concept of 'quality of life' can be analyzed from different angles. There are a number of definitions, models and concepts for quality of life. It is also possible to indicate synonyms of this term, such as well-being or happiness. Quality of life can also be considered in terms of individual aspects, such as physical or social. Often, researchers also introduce modifications to known quality of life models and adapt them to the needs of their own research, or construct models for specific groups, e.g. due to age and specific quality of life criteria.

One of the taxonomies of the definition of quality of life (Farquhar, 1995) divides them into two groups: professional (developed by quality of life researchers) and colloquial. Among the professional definitions there are global, complex, specific and mixed definitions. Global definitions include an assessment of the whole of life and an assessment of overall life satisfaction and well-being in various spheres of life as well as a sense of happiness. In addition to global assessment, complex definitions also include various partial areas of life, and their assessment has an impact on global quality of life. Specific definitions focus on specific areas of life. Mixed definitions, also called superior ones, include elements of global and complex definitions and additionally include dimensions such as the external environment, individual expectations or economic conditions in their scope.

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## CHINESE CONCEPT OF UNRESTRICTED WARFARE – CHARACTERISTICS AND CONTEMPORARY USE

The political, economic and military rivalry between the United States and the People's Republic of China is one of the most important aspects of the changing global distribution of powers. It prompts investigations into the Chinese war-making practice and the Chinese line of thought about warfare, thus facilitating the understanding of decisions made by Beijing authorities. The objective of this article is to outline the Chinese concept of unrestricted warfare – its origins, characteristics and contemporary use. The principal research issue resulting from the assumed objective was to respond to the following question: What is unrestricted warfare, and how it is currently used by the Chinese People's Liberation Army? The following research methods were employed to solve the research queries: a monographic method, a document examination method, literature analysis and criticism, and methods of analysis and synthesis. Considering their preliminary investigations, the authors formulated the following research hypothesis: the concept of unrestricted warfare is one of the most important Chinese concepts describing its war-making practice and rivalry with the United States. Although it was developed over 20 years ago, it still forms a valid selection of war-making methods and forms. Non-military forms of warfare, including financial warfare, trade warfare, resources warfare, economic warfare or regulation warfare are particularly important and frequently used by the People's Republic of China.

**Keywords:** The People's Republic of China, unrestricted warfare, financial warfare, trade warfare, terrorism, the United States.

### 1. INTRODUCTION

The concept of unrestricted warfare developed in 1999 was one of the most common Chinese concepts of war-making. 20 years later, its content still appears valid, when we consider its use in the official governmental military documents and measures taken by China in relation to the United States and Taiwan. It is said that Jiang Zemin, President of the People's Republic of China, and Chi Haotiana, Minister of Defence, were among the readers of *Unrestricted Warfare*. In 2003, the Central Military Commission used that basis

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to publish the *Three Warfares* doctrine which focused in particular on psychological operations, media manipulation, and the use of national and international law for political purposes. Together with *Unrestricted Warfare* which is the underlying source of knowledge on the Chinese concept, the authors also referred to other concise publications, articles and reports devoted to China's international activities and its rivalry with the United States. These included studies by Air War College, official doctrines of the U.S. Armed Forces and articles published in "Journal of Economic and Behavioral Studies", "Forbes", "The Diplomat" and Polish papers: "Kultura i Polityka" [*Culture and Politics*] and "Przegląd Nauk o Obronności" [*A review of defence sciences*]. The article contains introductory and concluding sections, as well as two substantive sections. The first of these provides characteristics of the concept of unrestricted warfare. It presents the profiles of Chinese officers – founders of the theory, the evolution of the international security environment at the turn of the 20th and 21st centuries, the forms of unrestricted warfare, its rules and principles. The second part focuses on the contemporary use of unrestricted warfare by the People's Republic of China.

## 2. CHARACTERISTICS OF THE CONCEPT OF UNRESTRICTED WARFARE

The concept of unrestricted warfare was presented in 1999 in *Unrestricted Warfare*, a book written by two military officers of the Chinese People's Liberation Army, Qiao Liang and Wang Xiangsui. Today it is still one of the most frequently cited publications dealing with the Chinese line of thought about warfare and war-making practices. The first author, Qiao Liang, was born in 1955 in the Shanxi Province, to a military family. He served in the Air Forces of the Chinese People's Liberation Army, where he attained the rank of major general (corresponding to the rank of brigade general in the Polish army) before retiring. Along with completing military service, he was also Head of the Council for National Security Policy Studies and a member of the Chinese Writers' Association. He has authored and co-authored a number of publications devoted to Chinese air forces, reforms in the Chinese army and international military relations. The second author, Wang Xiangsui, was born in 1954 in Guangzhou, also to a military family. He joined the Chinese People's Liberation Army in 1970 as a political officer, subsequently assuming the positions of political instructor, group political commissar and division deputy political commissar. He then served in the Air Forces, eventually attaining the rank of colonel. Having been sent to the reserve, he became Professor at the Beihang University (Liang, Xiangsui, 1999).

The publication by Qiao Liang and Wang Xiangsui does not merely contain a description of the concept of unrestricted warfare but it also highlights the significance of new technologies in facilitating revolutions in military affairs as well as describes the Chinese and American war-making practices. It further outlines the American weaknesses and causes of failure in previous unsuccessful U.S. military operations, as well as presents the changing environment of international security. In doing so, the authors identified several threats expected to dominate the line of thought about national security in a few years' perspective – the so-called postmodern terrorism (the 11/09 attacks) and financial crises resulting from speculations. The authors proved to have a comprehensive knowledge of the American military literature, including field manuals and strategic documents outlining the transformation directions of the U.S. armed forces. Special attention was paid to analysing the Gulf War which, according to the authors, was a landmark political event and a major military conflict. Iraq's operations connected with the military invasion of

Kuwait were unequivocally assessed in a negative way. Contrary to Iran where hostages were taken and an unsuccessful intervention of the U.S. special forces was carried out, Baghdad's actions led to establishing a great international coalition composed of 30 countries, and 2 million soldiers, led by the United States (Liang, Xiangsui, 1999). In the warfare 500 new military technologies, which were developed in the 1980s, were used. Fights took place in all possible domains at that time, including land, sea, air, space and information domains, also affecting non-military spheres – diplomacy, international law and economy (with sanctions imposed on Iraq). The publication in question also described the changing environment of national security. The Chinese officers drew attention to the gradual loss of the monopoly on aggression which nation states had acquired after the end of the Thirty Years' War in 1648. At the same time, international organisations, huge corporations and non-state entities, such as terrorist organisations, started to grow in importance. The latter, by employing asymmetrical warfare methods, attempted irrational competition against such powers as the United States, Japan and Russia, eventually achieving some successes reported by media. Among these were successful terrorist attacks, i.e. the Tokyo subway attack of 12 March 1995 and the U.S. embassy bombings in Kenya and Tanzania on 7 August 1998. The boundary between soldiers and non-combatants became blurred, with hackers, terrorists and financial speculators becoming symbols of modern warriors. George Soros is a person whose name appears several times in the publication. His activities are said to have contributed to the emergence of financial crises – first in Southeast Asia where an attack was launched on the Hong Kong dollar and Hong Kong stocks, especially the “red-chip stocks” controlled by the People's Republic of China, and then in Russia where his statements regarding financial collapse of that country led to investors' massively selling off Russian securities (Liang, Xiangsui, 1999).

Taking into consideration the historical significance of an information-based revolution in military affairs and the changing environment of national security, Qiao Liang and Wang Xiangsui formulated theses highlighting the changing image of contemporary warfare. In the authors' opinion, warfare has become unrestricted. It is a conflict in which military force no longer constitutes the only means to compel the enemy to submit to one's will, but it rather involves using all means, including military and non-military, and lethal and non-lethal means (Liang, Xiangsui, 1999). It is worth noting that the notion of unrestricted warfare has not been expressly defined in the western line of military thought. In American governmental documents and scientific studies, such terms as *irregular warfare* and *hybrid warfare* are used, which exhibit some similarities (Luke, 2012). In Joint Publication 1, Doctrine for the Armed Forces of the United States, irregular warfare was defined as a violent struggle among state and non-state actors, and a conflict in which the weaker party tries to question the dominance of its stronger opponent (Join Publication, 2010). In turn, Frank Hoffman, a former American military officer and academic teacher dealing with the issues of contemporary warfare, presented hybrid warfare as a form of conflict involving a mix of conventional weapons, irregular tactics, terrorism, and even criminal behaviour to obtain certain political objectives. Despite some similarities in these definitions, the American war-making practice is far different from the Chinese one. It concentrates on using the armed force to defeat the opponent in a symmetrical conflict while avoiding the mobilisation of the entire society or the engagement of all resources and state administration (Luke, 2012).

The authors of the concept of unrestricted warfare also listed numerous types of such warfare: atomic warfare, conventional warfare, bio-chemical warfare, space warfare,

electronic warfare, guerrilla warfare, terrorist warfare, diplomatic warfare, network warfare, intelligence warfare, psychological warfare, smuggling warfare, drug warfare, tactical warfare, technological warfare, fabrication warfare, financial warfare, trade warfare, resources warfare, economic warfare, sanction warfare, regulation warfare, ecological warfare, ideological warfare, media warfare, cultural warfare, and lawfare. The above-mentioned types of warfare were grouped into the following three categories (forms): military, trans-military and non-military, as shown in the table below (Luke, 2012).

Table 1. Forms of unrestricted warfare

Military	Trans-military	Non-military
Atomic warfare	Diplomatic warfare	Financial warfare
Conventional warfare	Network warfare	Trade warfare
Bio-chemical warfare	Intelligence warfare	Resources warfare
Space warfare	Psychological warfare	Economic warfare
Electronic warfare	Smuggling warfare	Sanction warfare
Guerrilla warfare	Drug warfare	Regulation warfare
Terrorist warfare	Tactical warfare	Ecological warfare
	Technological warfare	Ideological warfare
	Fabrication warfare	Media warfare
		Cultural warfare

Source: author's own compilation based on (Luke, 2012)

Most of these types of warfare have been described in much detail in western literature and western war-making concepts. However, it is worth paying attention to some of the forms whose significance tends to be neglected, or which do not constitute major research areas for western intellectuals and military strategists. These are: resources warfare, regulation warfare, fabrication warfare, technological warfare, and tactical warfare. Resources warfare is defined as gaining control over rare and natural resources with the aim of taking control of access to said resources and interfering with markets. The concentration process involving numerous industrial plants in China, also pharmaceutical plants, is given as an example of resources warfare. This issue is presented in *China Rx: Exposing the Risk of America's Dependence on China for Medicine Hardcover*. According to the authors, most drugs of everyday use are no longer produced in the United States but in China, this fact being concealed by pharmaceutical companies. In the event of an open military conflict in the Western Pacific, it may happen that Americans will no longer have access to the most common painkillers which they normally use. In addition, China produces worse-quality drugs which may cause poisonings (Gibson, 2018). Regulation warfare was presented as joining an international or supranational organisation with the purpose of challenging its policies or influencing the law-making process so as to meet national interests. It also implies exploiting international law to exert influence on other states. Fabrication warfare means developing a counterfeit appearance of the reality or presenting the opponent on the international arena in a manner that contradicts the truth. Technological warfare was described as attempting to gain competitive edge in access to major technologies which could be used both in peace and war times. Finally, tactical warfare implies using conventional and non-conventional resources to win battles (Luke, 2012).

The concept of unrestricted warfare includes not only a list of possible forms of war-making and competition, but also some principles according to which operations against opponents should be planned. The following terms are used among others: the golden point, the side-principal rule or deviation toward the side element, and the ideology of going beyond limits. The “golden point” principle implies that any warfare has its key moment (turning point), following which the scales of victory tip to either side. For instance, during the Napoleonic wars the golden point was Napoleon’s entering Moscow (1812); during World War II this was the Battle of Stalingrad (1942), and during the Gulf War – the point at which the losses of military equipment sustained by the Iraqi Republican Guards exceeded 30 percent. As regards deviation toward the side element, the idea is to properly select targets and to identify the opponent’s weak points or areas where it does not expect an attack to be launched. The sneak attack on Pearl Harbour was an example of this principle being put into operation (Luke, 2012). Finally, the ideology of going beyond limits refers to Niccolo Machiavelli who admitted the use of unethical means to achieve an objective, which clearly represented a breakthrough against the romantic chivalry prevailing in the medieval period. When transposed to contemporary warfare, this ideology implies conducting activities outside the narrowly understood military area, also spanning across diplomacy, economy and finance. This principle was deliberately or non-deliberately used by the United States during the Gulf War, whereby the potential of conventional armed forces was combined with both wide diplomatic offensive and imposition of sanctions on Iraq. In contrast, Saddam Hussein displayed huge ignorance in reaching exclusively for such tools that were based on armed force when seeking to put the territory of a foreign country under Iraqi control (Luke, 2012).

One of the key elements of the concept of unrestricted warfare is the section outlining eight principles enabling the conduction of “beyond-limits combined war”. These are: omnidirectionality, synchrony, limited objectives, unlimited measures, asymmetry, minimal consumption, multidimensional coordination, and control of the entire process. Omnidirectionality refers to conducting operations in many domains – in land, maritime, air, space and information, as well as economic, political and cultural domains. As stressed by the authors, a modern battlefield can still be a densely forested land in which guerrilla fights take place, but the virtual world of media and the active role of journalists can as well serve this function (Chew, 2018). While discussing synchrony, which concerns the ability to conduct actions in different spaces within the same period of time, Qiao Liang and Wang Xiangsui appreciatively mentioned the “Desert Storm” operation and the American capacities of synchronising the military campaign. The Americans, by employing the newest situational awareness and C4 (Command, Control, Communication & Computers) systems, were capable of exchanging information on 4,000 targets and passing it to 1,200 aircraft within a minute. This also reflected the ideology of going beyond limits which consisted in the implementation of total depth while performing airborne and missile attacks (Luke, 2012). The principle of limited objectives emphasises the need to determine objectives both cautiously and reasonably, by giving full consideration to the feasibility of accomplishing them. As claimed by the authors,

When setting objectives, one must overcome the mentality of craving great successes, and instead consciously pursue limited objectives and eliminate objectives which are beyond one's abilities, even though they may be proper. (...).

Setting objectives which exceed allowable limits of the measures available will only lead to disastrous consequences (Luke, 2012).

The principle of unlimited measures is closely connected with limited objectives, as it implies the use of any available measures, both military and non-military. Sherman's advance in the American war between the north and south, by the end of 1864, was an example of how effective this principle could be. While destroying the resources and logistic infrastructure of the Confederation army engaged in the northern state, Virginia, it also contributed to breaking the morale of the civilian population as a result of severe losses sustained during that "advance" (Chew, 2018). The asymmetry of power is another principle, describing how the weaker party (in this case China) should approach the stronger opponent (the United States) in the warfare context. The suggested approach is different from the one that was utilised in the conflict between the USSR and the USA in the Cold War period, and in particular in the 1980s when the Kremlin decided to join the arms race in order to attain the level of technological advancement matching that of the American army and naval forces. China's approach should now be completely different. First, it should be based on developing an innovative economy attracting talented scientists and engineers. Second, it should involve the transformation of armed forces to make them capable of fighting against the USA by exploiting its weak points (Chew, 2018).

There have been many examples of confrontation in the world's history in which the weaker parties, by employing asymmetrical warfare methods, were able to win battles and force their enemies to withdraw or change their plans. These include the First Chechen War, the activity of the Irish Republican Army in the United Kingdom, the American Battle of Mogadishu in 1993, or the terrorist attacks launched in western countries by Islamic groups. The key to success in asymmetrical warfare lies in the weaker party's avoiding any direct confrontation with its enemy using conventional armed forces. The forms of unrestricted warfare to be used in such circumstances include guerrilla warfare, terrorist warfare and virtual warfare (Luke, 2012). The principle of minimal consumption stresses the need to use the least amount of resources to accomplish a set objective. The Battle of Verdun in 1916, which is called by war historians a meat grinder, was an example of an ill-matched approach to the use of resources by Germany and France. Between 21 February and 18 December 1916, both parties lost as many as 686,000 soldiers. This was in contrast to the German Blitzkrieg during World War II which allowed great successes to be accomplished with losses cut to the minimum - crossing the Maginot Line in France (Chew, 2018). The principle of multidimensional coordination highlights the need for coordination and cooperation during operations conducted in all domains and competition spheres, whether military or non-military. In contemporary conflicts, this depends on the level of warfare. According to the authors, there are four such levels, i.e. the grand war fought at the highest political command level (war policy), the war at the strategic level, the war at the campaign level (operational art), and the war at the battle level (military tactics). The control of the entire process is based on adjusting the strategy to the changing situation, with the China-Vietnam War of 1979 constituting an example. Due to growing losses sustained by the PLA, Beijing decided to withdraw its troops from Vietnam, announcing that all of its assumed objectives had been accomplished. The Chinese intervention which consisted in quickly attacking several cities located in the northern regions of the country lasted 27 days. The American intervention which, similar to the Chinese one, also ended in failure, lasted 19 years (Chew, 2018).

### 3. CHINA'S CONTEMPORARY USE OF THE CONCEPT OF UNRESTRICTED WARFARE

As early as in mid-1990s, strategists of the Chinese People's Liberation Army coined the term "information warfare" which emphasised the significance of attaining a dominant position in the information area, both as regards the command systems and battlefield control, and asymmetrical psychological operations aimed to undermine the morale of the enemy's soldiers and to overcome resistance in certain societies.

As part of the planned operations, China adopted a range of methods including standard striking mechanisms aimed to destroy main bases, field commands, and information control and command centres, and conducting far-reaching electronic fights, including the use of electronic means of jamming and electromagnetic weapons to attack the enemy's information and intelligence collection systems (such as radar and communication systems).

Far-reaching disinformation measures, including the use of operations such as tactical feints (simulated attacks) to shield or deceive the enemy's intelligence collection systems, were also envisaged together with the use of all means to maintain secrecy and keep the enemy from collecting intelligence on Chinese operations, and the use of TV, radio, and leaflets to undermine the enemy's military morale (Baocun, Fei, 1995).

At present, the unrestricted warfare doctrine is reflected in an array of concepts implemented by the Chinese People's Liberation Army. An example of these is the *Three Warfares* concept developed in 2003, aimed at undermining the opponent's resistance and accomplishing certain national objectives – at the same making a minimum input in the potential real fight. The said concept is, to a large extent, based on the following three fundamental types of operations related to information warfare, among which the following are mentioned:

1. Strategic psychological operations – which involve simulating the use of armed forces in the form of para-military organisations, the application of other capabilities (diplomatic or economic), or reference to cultural aspects, with the intention of intimidating the adversary and encouraging acquiescence to the outcomes desired by the People's Republic of China;
2. Media manipulations – based on delivering tailored materials to public audiences through established news services, informal internet sites, and other social media, with the intention to create an unreal image of the situation, distinctively favourable for the People's Republic of China, and thus to justify China's actions pursued on the international arena.
3. Exploitation of national and international legal systems – which involves leveraging the existing legal regimes in some countries or coalitions to block or constrain the adversary's behaviour, and thus to maximize advantage in situations related to China's interests (Livermore, 2018).

The status attained by the Chinese People's Liberation Army, which can be seen as extension of power exercised by the Chinese Communist Party, acquires a special meaning in this context. It facilitates cutting the potential external interference into the Middle Kingdom's internal affairs and foreign policy to the minimum. In the Chinese system, it is the army that integrates all areas of the meticulously expanded nation's power. The contemporary Chinese military strategy strongly highlights the essence of information dominance within modern non-kinetic conflicts. So, the *Three Warfares* concept makes it

possible to effectively secure Chinese national interests while avoiding the need to engage armed forces in any potential conflicts of a conventional character.

Given the above, China has portrayed its participation in the rivalry in the South China Sea basin as a national interest, intrinsically connected with both its territorial integrity and security. The so-called Nine Dash Line, covering a vast part of the islands situated in the said region (mainly the Paracel Islands and the Spratly Islands) is the leading motive of the dispute. Apparently insignificant (given especially their rather small area), these islands practically allow for the South China Sea to be considered territorial waters of the People's Republic of China, excluded from the jurisdiction of international maritime law. Notably, the disputed region constitutes one of the busiest trade routes as well as features numerous gas and oil deposits which materially increase its overall attractiveness.

In 2013, the People's Republic of China commenced selective ground reclamation and construction of new (artificial) islands in order for these to be adapted to serve as coastal fortifications. Measures taken to this end caused protests of other countries situated in the vicinity of the islands, including Vietnam, Philippines, Brunei, Malaysia and Taiwan, all definitely rejecting the Chinese claims. In this context, China opted for a "showcase" use of the *Three Warfares* doctrine to justify its interest without causing a conventional armed conflict (Livermore, 2018).

The construction of coastal fortifications in the disputed region is intended to exert a psychological effect on the remaining parties to the dispute. Among the coastal installations constructed by the Chinese People's Liberation Army, the following are worth mentioning: advanced air defence systems, launchers for anti-ship ballistic missiles (including *HQ-9* anti-aircraft batteries – equivalents of the Russian *S-300* systems with operational range of up to 200 km (Mencel, 2017), as well as *DF-21D* and *DF-26* (Stashwick, 2010) anti-ship ballistic missiles), observation drones, and air force bases equipped with modern combat aircraft (Minh Tri, 2017; DoD, 2017).

With a view to strengthening China's own capabilities of exercising supervision over the disputed area, without the need to resort to warships, elements of Chinese coast guards were deployed in the said region and adapted to conduct operations, thus forcing the opponents to leave the waters claimed by the Middle Kingdom. New structures such as huge coast guard's patrol ships *Haixun 09*, suited to conducting operations aimed at protecting the country's territorial waters, e.g. by harassing and ramming other countries' vessels, can serve this purpose well (Axe, 2021).

Attention should be paid to the significant development of the Chinese naval forces, including the supply of numerous ships of new types, among which the successively introduced vessels classified as missile destroyers of type *052C*, type *052D* (around 28 ships with displacement of 7000 and 7200 tonnes, respectively) and type *055* (8 ships planned with displacement of around 13000 tonnes, based on which they can be practically classified as rocket cruisers, outperformed only by the American *Zumwalt* class destroyers with displacement of around 16000 tonnes) are worth mentioning (Office of Naval Intelligence, 2020). The warships are equipped, *inter alia*, with *YJ-18* anti-ship ballistic missiles with estimated range of 220 – 540 km, *HHQ-9* long-range interceptors placed in 64 (type *052D*) or 112 (type *055*) vertical launch systems (DoD, 2017; Military-Today, 2021).

As part of expanding its naval forces, the People's Republic of China has launched an aircraft carrier development programme – so far the following two ships have been assigned such a status: *Liaoning* (classified as type *001*, a *Kuzniecowa* type aircraft cruiser purchased from the Russian Federation with displacement of 67 000 tonnes, which can carry *J-15*

*Shenyang* type combat aircraft – licensed copies of the Russian *Su-33*) and *Shandong* (classified as type *002*, constituting an enlarged version of *Liaoning* with displacement of around 70 000 tonnes, also intended to carry *J-15* type aircraft) (ChinaPower, 2021). Based on intelligence reports and satellite observations, more ships are currently under construction. These will, however, represent a new type of warships (preliminarily classified as type *003*) with estimated displacement of around 85 000 tonnes and a modified flight deck structure. It is reported that two type *003* ships have already entered the construction stage (Stashwick, 2021). All the above structures are powered by steam turbines with diesel generators, while the planned (type *004*) warship will use nuclear power (Mizokami, 2018) – this fact testifying to a significant acceleration of the development rate of the Chinese navy, and its power projection capacities.

In order to strengthen the psychological impact of diplomatic activities implemented in the South China Sea basin, media services were extensively used, which involved in particular disseminating facts about the historic affiliation of the reference area. This included media contents spread via news services and other media agencies. At the same time, the People's Republic of China effectively prevented other regional players from reacting to its provocations related to military capabilities, the use of propaganda and various legal ambiguities. All those activities have bought Beijing some time to further strengthen its standing in the region and to continue the militarisation of local islands. This is likely to eventually act as a deterrent for other countries competing for that region, at the same time sending a message that their capabilities to oppose China's territorial claims are gradually diminishing (Livermore, 2018).

The People's Republic of China has been effectively building its image in media as a country threatened by external forces, while pretending to avoid direct military confrontation (using the offensive approach to accomplish its objectives only to a minimum extent). This acts as a proof that all measures taken by the Chinese authorities are intended to ensure the country's security.

Psychologically, the “*Three Warfare*” concept which entails media content manipulations with exploiting legal complexities, provides adequate means for implementing the strategic objectives assumed by the Middle Kingdom with an opportunity to control conflict escalations in disputed regions. Excluding the South China Sea from the jurisdiction of international maritime law can ultimately result in weakening the international standing of the United States and their allies, mainly by losing control over major trade routes in that region. The intensifying tension is reflected in the growing number of incidents involving Chinese coast guard's patrol ships and vessels belonging to the United States Navy (Livermore, 2018).

Beijing's diplomatic protests of 2016 (widely publicised in media) can be seen as an example – the American *USS William P. Lawrence* (type *Alreight Burke*) missile destroyer, while conducting a freedom of navigation operation, entered the Spratly Islands region, which triggered a rather abrupt reaction. China immediately deployed its fighter jets and sent three ships to that region, forcing the American vessel to instantly leave the archipelago. The People's Republic of China also took care of the proper media message to make it clear that the construction of defence installations in the region was necessary and well-grounded (LaGrone, 2016).

In September 2018, another incident took place involving the American warship approaching the Spratly Islands – the *USS Decatur* (type *Alreight Burke*) missile destroyer was almost rammed by the Chinese *Lanzhou* (type *052C*) missile destroyer causing the

American vessel to immediately withdraw. As in the previous case, the Chinese party considered its conduct fully justified, claiming that its destroyer merely acted in response to the American ship violating Chinese territorial waters (Werner, 2018).

In July 2020, the Chinese embassy strongly disapproved of the U.S. rejection of its territorial claims regarding the South China Sea, sending a message that the United States sought to disturb the Chinese cooperation with other countries situated in the disputed region. The Chinese authorities further emphasised that the United States, as a country not directly affected by the conflict, should abstain from interfering in the disputes to which they are not a party. In response, U.S. Defence Secretary Mike Pompeo clearly stated that the United States intended to maintain stability in the region and uphold the freedom of navigation, with an ultimate attempt to secure uninterrupted flow of goods (Pamuk, 2020).

The above examples prove that the conflict in the region concerned has been escalating. Beijing – pursuing its policy involving militarisation of the South China Sea – wants to put pressure on the international community demanding that the sea be considered exclusively Chinese. By building artificial islands, constructing military bases equipped with shelters, anti-missile and anti-ship systems, as well as airfields, it creates a kind of an “anti-access bubble” in the region to exert pressure on the countries situated within the South China Sea basin. This also poses a real problem for the United States which cannot venture to lose an area so crucial for global trade.

Economic warfare, trade warfare and resources warfare are other examples of the contemporary use of the unrestricted warfare concept. China is gradually advancing its political impacts in Latin America, Africa and the Middle East by investing in such sectors as construction, logistics, manufacture, communications and retail trade. China’s foreign assistance and loans granted by its financial institutions appear more attractive to many countries as they do not combine public aid with issues of human rights or democratic power. The Beijing Consensus does not raise a range of expectations for poor countries regarding economic freedom, the need to privatise state-owned industrial plants or openness to direct foreign investments. It has thus become an alternative for the Washington Consensus, enabling developing countries to decide about their own political system and development directions (Strojek, 2011). In 2000-2014, major recipients of Chinese loans in Africa included Angola, Ethiopia, Kenya, the Democratic Republic of Congo, the Republic of Congo, Niger, Ghana and Cameroon (Mlambo, Mlambo, Mubecua, 2018). In addition, the United States accuse China of currency manipulation, as well as of inadmissible trade subsidies and intellectual property theft. In 2009, during a hearing before the United States congressional committee, Secretary of the U.S. Department of the Treasury Timothy Geithner testified that China had been deliberately manipulating its own currency in order to keep it at a low level in relation to dollar and other currencies. This was meant to foster high exports and keep the prices of goods produced in the Middle Kingdom as low as possible in relation to the prices dictated by the market. Beijing was also said to subsidise some other exported products such as stationery products, textiles, steel and plastic products, which resulted in eliminating a significant number of jobs in the United States. The above-described practices have directly contributed to the dynamic growth of the Chinese economy in the past 10 years, at a rate of 10% of GDP, and significantly reduced the development gap between China and the United States (Luke, 2012).

#### 4. CONCLUDING REMARKS

The concept of unrestricted warfare should be treated as a selection of views consistent with the historic Chinese war-making practice – one that emphasises the element of surprise, misleading, intermediate actions and forcing the enemy to surrender without recourse to military power. The examples presented in the second part of the article prove how intensively the trans-military and non-military warfare methods are currently used by the People’s Republic of China. Along with financial warfare, trade warfare, resources warfare, economic warfare and regulation warfare, Beijing also resorts to psychological, diplomatic and network warfare. Assuming that a potential conflict with the United States and their allies in West Pacific would progress according to the “escalation ladder”, a conclusion can be drawn that the methods applied by the People’s Republic of China at the rivalry stage are indeed effective. They enable reducing the American impact without the need to declare war, along with building China’s economic and political power. However, it is very hard to say whether the asymmetrical warfare methods would be the paragon of success if an open American–Chinese war began. The U.S. military forces are prepared for conventional fights with any type of enemy, retaining their dominance both at sea and in air. They still have the most advanced military technologies and a wider range of atomic weapons. This work does not exhaust the topic related to the concept of unrestricted warfare. Along with characterising it, it provides a selection of examples of how that concept is currently used by China. It may thus serve as the starting point to other research and attempts at both investigating how Beijing authorities, by using diplomatic means, weaken the U.S. alliances with countries situated in South-Eastern Asia, and responding to the following questions: How are media and social networking sites used to disseminate the “Chinese point of view”? Does China conduct activities aimed at political destabilisation of the countries they consider as their opponents? The authors of this article believe that the concept of unrestricted warfare should be analysed with extreme diligence in Poland as it provides an array of suggestions on how to compete against and make war with a country with more powerful military and technological potential.

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12. Detailed information on reviewing articles and works proceedings of the papers and the Publishing House are described in the guidelines for authors of scientific papers.
13. Each reviewer and reviewer submits the reviewer's declaration of no conflict of interest. The reviewer is obliged to inform the editorial office of the journal about the occurrence of a conflict of interest.



## **Ethical standards in the Journal of Humanities and Social Sciences**

To prevent misconduct in science (**ghostwriting, guest authorship**), the editorial staff of Journals of the Rzeszow University of Technology has introduced appropriate procedures specific to the disciplines represented and has taken the following measures:

1. The editors will require the contributions from the authors in the creation of the article (with their affiliation and the following information: who the author of the concept is, objectives, research, etc.); the primary responsibility will be borne by the person submitting the article.
2. The editors will explain the concept of **ghostwriting** and **guest authorship** to the authors, which are a manifestation of scientific misconduct, and any detected cases of this type of action on the part of the authors will be revealed, including the notification of the appropriate bodies.
3. The editors will obtain information about the sources of publications funding, contribution to research institutions and other bodies (**financial disclosure**).
4. The editors will document all forms of scientific misconduct, especially breaking the rules of conduct obligatory in science.

### **Conflict of interest**

There must be no conflict of interest between reviewers and article authors. Conflict of interest is considered to be the direct personal relationship between the reviewer and the author (in particular, relationship to the second degree and marriage), professional dependency relations or direct scientific cooperation during the last two years preceding the year of the review preparation. Each reviewer and reviewer submits the reviewer's declaration of no conflict of interest. The reviewer is obliged to inform the editorial office of the journal about the occurrence of a conflict of interest.



**Review Sheet**  
**Journal of Humanities and Social Sciences**

**Title:**

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**A Please respond to the following questions**

1. Does the title of the paper reflect the content sufficiently?  Yes  No
2. Are the discussed issues up-to-date?  Yes  No
3. Paper originality ..... Max. 20 points
4. Goals realization formulated in the paper objective ..... Max. 20 points
5. Language and style correctness ..... Max. 20 points
6. Proper selection of literature and sources ..... Max. 20 points
7. Correctness on drawing conclusions and its relevance resulted  
from the paper content ..... Max. 20 points
- Total no. of points: .....

**8. Is the paper suitable for publication?**

- Yes
- Yes, but after the remarks specified in point 9 are corrected
- No, because

---

✂

**B Confidential**  
**Name and Surname**  
**Address**

.....  
Signature of the Reviewer



## Guidelines for Authors of scientific papers published in the Publishing House of the Rzeszow University of Technology

Jan KOWALSKI<sup>1</sup> (font size 10, bold, left aligned)

### TITLE OF THE ARTICLE (FONT SIZE 14, CAPITAL LETTERS, JUSTIFIED, BOLD, SPACE BEFORE PARAGRAPH SIZE 42, SPACE AFTER PARAGRAPH SIZE 18)

Abstract – 1 paragraph with **100–150 words**. Font size 9, mirror indents size 0.5, indent of the first line size 0.5, justified.

**1. INTRODUCTION** (font size 10, capital letters, bold, hanging indent 0.5 cm, numbered, space before paragraph size 12, space after paragraph size 3)

**2. CHAPTER TITLE** (font size 10, capital letters, bold, hanging indent 0.5 cm, numbered, space before paragraph size 12, space after paragraph size 3)

**Main body – only texts written in English will be accepted: font size 10, indent of the first line 0.5 cm, justified, single line spacing, space before and after paragraph size 0. Please do not insert additional lines between the paragraphs.**

**1.1. Section title** (font size 10, bold, hanging indent 0.75 cm, space before paragraph size 6, space after paragraph size 3)



Drawing 1. Sample drawing and caption (caption located under the drawing, font size 9, justified, mirror indent size 0.5 cm, hanging indent size 1 cm, space before paragraph size 6, space after paragraph size 3)

Table 1. Sample table and caption (font size 9, hanging indent 0.5 cm, space before paragraph size 6, space after paragraph size 3)

		A size 6 space should be left after each table.
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<sup>1</sup> Information about the author: title (degree), name and surname, organisational unit, university, city, university address, e-mail address. Information in the footnote should be provided both in Polish and English. If there are several authors, please indicate the corresponding author. Each author is obliged to enclose their ORCID number. Instructions for authors without an ORCID number: [https://www.ifj.edu.pl/library/open-access/materials/Instrukcja\\_ORCID.pdf](https://www.ifj.edu.pl/library/open-access/materials/Instrukcja_ORCID.pdf)

Template for equations:

$$A_2^1 = \sum_{i=1}^n \frac{b_i \cdot \cos^2 \alpha}{2 \cdot a \cdot c} \quad (1)$$

Each equation has to be centred, space before and after paragraph size 3, numbering aligned to the right side of the margin.

Template for citations – **APA style:**

- The author's surname is put in round brackets with the year of publishing the work, page numbers are provided in case of a direct quote. According to the APA standard, surnames, years and page numbers are separated with a comma: **(Kowalski, 1999)**.
- If a publication has two authors, their surnames are separated with a comma: **(Nowak, Kowalski, 2018)**.
- If a publication has three, four, or five authors, they are all listed with the first quote: **(Nowak, Kowalski, Wiśniewska, Wójcik, Kowalczyk 2018)** while only the first surname is given with further quotes and other academics are replaced by "et al.": **(Nowak et al., 2018)**.
- Quoting two or more publications of various authors at the same time: Authors are listed alphabetically, with the references to their publications separated with a semicolon **(Buczak, 1999; Kowalski, 2018; Wiśniewski, 2013)**.
- Quoting more than one publication by the same author: After the surname, the dates of publication are provided chronologically **(Nowak, 2013; Nowak, 2018)**.
- If both texts were published in the same year, a letter of the alphabet is added after the date. Socjolog jest to osoba, która potrafi wyzwolić się ze swoich bezpośrednich uwarunkowań i zobaczyć rzeczy w szerszym kontekście **(Nowak, 2013a; Nowak, 2013b)**.
- If different authors have the same surname: The first letter of the author's name is added to differentiate the publication **(J. Nowak, 2018; Z. Nowak, 2016)**.
- If the reference to a publication is indirect, the original source needs to be provided, then the word "after" is added, followed by the information on the secondary source in which the original text was referenced **(Nowak, 2013, after Kowalski 2015)**.
- While referring to a collection of articles, the surname of the editor with a proper mention (ed., sci. ed.) should be provided in square brackets: **(Nowak, Kowalski [sci. ed.] 2013)**.
- Legal acts: the beginning of the title of the act, decree, etc., is provided (the list of sources includes its full title), the author may point to a specific paragraph or article understood as the page **(Act, 2005, art. 35 par. 1)**. If the author uses two or more legal acts issued in the same year, the first words of the title of the act need to be provided **(Act on the Border Guard..., 2001. art. 1. par. 4)**.
- For internet sources, the author or the website name and the date of publication are to be provided **(MNiSW, 2018)**.

- Direct quote: If the cited fragment encompasses more than 40 words, it should be a separate paragraph with an indent (5 spaces), without inverted commas, it should also be preceded and followed with an empty line. If the cited fragment is shorter than 40 words, it should be included in the main text and marked with inverted commas.

**All publications that the author quotes or refers to in the text should be included in the list of sources at the end of the text which follows the APA standard.**

**LIST OF SOURCES in alphabetical order** (font size 10, capital letters, bold, space before paragraph size 12, space after paragraph size 3)

Examples:

- Author's surname, first initial. (year of publication). *Title of the book*. City: Publishing house.

Nowak, J. (2016). *Współczesne problemy aksjologiczne*. Warsaw: PWN.

- If the author's surname is tied with several items on the list, they should be ordered in accordance with the year of publication, while the surname is replaced with six hyphens (—), e.g.:

Kowalski, A. (2016). *Etyka życia codziennego*. Warsaw: Wydawnictwo Naukowe PWN.

— (2018). *Wartości codzienne*. Warsaw: Wydawnictwo Naukowe PWN.

- If a collective work is quoted, the editor's name is the first one provided:

Nowak, A., Kowalski M., ed. (2012). *Współczesne problemy etyczne*. Warsaw: PWN.

- The bibliographic description of a chapter in a collective work should be structured as follows:

Nowak, H. (2018). *Etyka życia społecznego* [in:] Kowalski E., ed., *Etyka*. Warsaw: Państwowy Instytut Wydawniczy, p. 13–25.

- The bibliographic description of an article in a journal should be structured as follows:

Nowak, S. (2015). *Płaszczyzna aksjonormatywna*. "Studia etyczne" No. 4.

- Legal acts:

Act of 2.10.2005 on the income tax. Journal of Laws 2005, nr 20, item 456, as amended.

- The description of an electronic document needs to include the date of access, source of the document, type of carrier, version, e.g.:

Dykas S., Szewczyk M. (2015). Zróżnicowanie rozwoju ekonomicznego powiatów Polski Wschodniej, *Miscellanea Oeconomicae*, vol. 1, no. 4, p. 34–87.

Porter M., Kramer M. (2011), *Creating shared value*, "Harvard Business Review", vol., no. 1–2, pp. 62–77.

Staśkiewicz T. (2016). *Co by się stało gdybyśmy wszyscy zostali wegetarianami? Naukowiec z Oxfordu szokuje prognozami* [access: 18.02.2018]. Accessed online: <https://innpoland.pl/125943,co-by-sie-stalo-gdybysmy-wszyscy-zostali-wegetarianami-naukowiec-z-oxfordu-szokuje-prognozami>

- If the article has its DOI (Digital Object Identifier) number, it should be provided at the end of the description.

## **RULES ON PREPARING THE ARTICLE**

- The article should be written in the Word text editor, Times New Roman font, with single line spacing.
- Preferred volume: 20,000–30,000 characters (with spaces).
- The structure of the article should follow the template and instructions.
- The articles should be written on A4 paper format with the following margins: **upper and lower – 5.3 cm, left and right – 4.1 cm**. Do not use page numbering.
- All drawings, graphs and tables should be implemented directly within the body of the text or take up entire pages (**they cannot cross over the margins**). Drawings should be grouped.
- Numbers and captions for tables should be placed below them, with the references provided underneath.
- Numbers and captions for drawings, graphs should be placed under them, with the references provided underneath.
- For the entire text, **APA style footnotes** are to be applied.

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*Ekonomia i Nauki Humanistyczne*  
(p-ISSN 1234-3684)

zmiana nazwy (od 2013 r.) na:  
*Humanities and Social Sciences, HSS*  
(p-ISSN 2300-5327), (e-ISSN 2300-9918)

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