



CRACOW  
UNIVERSITY  
OF ECONOMICS



# RESTRUCTURING MANAGEMENT

THREATS, ADAPTATIONS AND DEVELOPMENT  
IN THE FACE OF CHANGES

EDITED BY

ANDRZEJ JAKI, MAŁGORZATA KOWALIK



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THREATS, ADAPTATIONS AND DEVELOPMENT  
IN THE FACE OF CHANGES

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# RESTRUCTURING MANAGEMENT

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Edited by  
Andrzej Jaki, Małgorzata Kowalik



*wydawca*

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## INTRODUCTION

The reality in which contemporary business entities, all organisations and societies have to function today is definitely dominated by the crisis related to the COVID-19 pandemic, which is a great shock to the global economy. It has brought about a number of threats which have become major challenges for the whole world economy and the European one, as well as for individual states worldwide. Therefore, the threats triggered by the coronavirus-related crisis have a social and economic dimension. They also affect the life of every citizen. The consequences of the COVID-19 pandemic manifest themselves, among others, in the worldwide economic stagnation and the growth of the risk for functioning, decreases in GDP or in intensifying inflation processes. It should be emphasised that an effect of the pandemic is undoubtedly the unstable economic, social, as well as political situation the occurrence of which numerous economies have had to face.

Functioning in such an economic and social situation being a challenge to contemporary enterprises made their situation both demanding and complex since it is determined by numerous macroeconomic, industry or sector-related factors. The pandemic has verified and in a sense forced considerable changes in business management, both in the operational and strategic sphere. Thus, survival has become the basic goal of functioning for many business entities during the recession. Only a slow recovery from the crisis will allow entities, gradually but also with increasing intensity, to focus on their primary business objective - development, which unfortunately in this new post-pandemic reality will be slower in most sectors.

In the context of the worldwide crisis related to coronavirus, it is important to emphasise a significant role of restructuring, of both economies and enterprises, which has been given a new face. The complicated reality has

made entities restructure and introduce fundamental changes in numerous areas of their functioning. Restructuring was a necessity caused by the world crisis and its consequences, but on the other hand it also became an opportunity resulting, among other things, in faster introduction of innovative changes and improvements in the management of business entities. Moreover, it seems that the restructuring has made it possible to review and analyse in depth the past functioning of both economies and businesses. In many situations it was and still is necessary to look for innovative organisational or technological solutions, taking into account the changing economic conditions and adapted to them. It is therefore possible to see a huge role for restructuring processes, which comprehensively include entities and economies, and therefore also represent an opportunity to recover from the social and economic crisis.

The presented monograph, which is a part of the considerations, is an attempt to signal some of the above-mentioned problems, with particular attention paid to the need to manage restructuring in the face of threats, through adaptation to economic, social and political conditions, as well as the necessity to make changes leading to development and adapting enterprises to functioning in post-pandemic modern economies. The content of the considerations presented in the paper has been divided into the following five thematic threads, delineating the subsequent parts of this monograph:

- I. Impact of the COVID-19 Pandemic on the Social and Economic System.
- II. Mechanisms of the Development Processes of Enterprises and Economies.
- III. Contemporary Challenges of Enterprise Management.
- IV. Financial Aspects of the Functioning and Development of Enterprises.
- V. Restructuring in the Face of Contemporary Challenges.

The first part of the monograph pays attention to and includes contents which, as it can be seen, are the most up-to-date, because they present various aspects of the impact of the COVID-19 pandemic on the economic system and business entities from both the sectoral and macroeconomic perspective. It should be emphasised that the pandemic has already caused a lot of changes, but its consequences will be noticeable for a long time, on different sectors of economy and therefore on the functioning of individual entities.

Part Two concentrates on mechanisms occurring and used in the development process not only of enterprises, but also of sectors, industries or economies. The Authors draw attention, among others, to the conditions of the functioning of one of important sectors of economy, namely small and medium-sized enterprises, as well as to the problem of the development of start-ups in Poland. The authors also notice and analyse current problems of efficient energy in the development of sectors and economic entities.

Part Three concentrates on showing contemporary challenges facing contemporary enterprises and which their managers have to handle. The awareness of the problem and the conditions enable to adjust the management of business entities in response to changes undergoing in their environment and inside them. The aim is to improve the effectiveness of the activities of entities to increase their competitiveness and to raise their attractiveness as the form of investment.

Part Four is in a sense the continuation of this problem. The Authors focus in it on the financial aspects of the functioning and development of enterprises. We can mention a lot of determinants conditioning the development of business entities, particularly in the face of the challenges facing contemporary enterprises. In this part the problem presented concerns shaping and choosing the sources of financing of the activities of business entities, directly influencing their effectiveness seen from the perspective of profitability, liquidity and developmental capabilities.

The last, fifth part of the monograph concentrates on showing restructuring processes in the face of contemporary challenges which, as it should be emphasised, are very diversified. The contents shown in this part show the problem of numerous determinants and different dilemmas concerning the process of restructuring and organisation development.

The presented publication is the subsequent effect of many years' cooperation of the Department of Economics and Organisation of Enterprises of the Cracow University of Economics with other Polish and foreign scientific centres and representatives of economic practice. The theoretical, methodical and empirical considerations contained in this study are the result of research conducted by individual Authors, which focus on the issue of contemporary restructuring management, which is a response to threats, enabling adaptation to change and development to business entities.

*Andrzej Jaki, Małgorzata Kowalik*



**PART I** **IMPACT OF THE COVID-19 PANDEMIC**  
**ON THE SOCIAL AND ECONOMIC SYSTEM**





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# **THE FINANCIAL SITUATION OF POLISH ENTERPRISES IN THE CONTEXT OF SUBSEQUENT WAVES OF SARS-Cov-2 PANDEMIC**

## **1. Introduction**

The study assumes that successive waves of the SARS-Cov-2 pandemic can be considered to disrupt the development processes of companies and even threaten their survival. So far, four consecutive waves of the SARS-Cov-2 pandemic have threatened companies' goals and even their very existence. The accumulation of difficulties associated with successive pandemic waves can lead to a loss of the ability of companies to perform their core functions.

The aim of the article was to identify changes in the financial condition of Polish companies in the context of subsequent waves of the SARS-Cov-2 pandemic. Particular attention was paid to changes in the formation of basic parameters indicating the financial situation of companies, i.e. profitability and liquidity, as parameters representing the financial situation of companies, which were considered in the context of the impact of the SARS-Cov-2 pandemic on economic activity.

The study draws on the basic qualitative methods of financial analysis, particularly the methods of ratio analysis and comparisons. The main sources of data in the study were statistical and rapid monitoring data from the NBP.

## **2. The SARS-Cov-2 pandemic crisis and related pandemic waves as crisis situations in companies**

To achieve the objectives of the article, it is important to make a conceptual distinction between a crisis situation and a crisis. These terms should not be

equated and used interchangeably. The study considers the crisis situation as a causal component in relation to the crisis. The state of the company deviating from the state regarded as normative, being a consequence of unfavorable development of certain phenomena in the past or being an effect of events disturbing the process of the company's development, which at the same time does not constitute a direct threat to its existence is regarded as a crisis situation. In turn, a crisis was considered a state in the company resulting from the intertwining in a certain period of time of certain crisis situations, which threatens not only the implementation of its objectives, but also its existence. The study assumes that crisis situations in companies from March 2020 onwards are associated with successive waves of the SARS-Cov-2 pandemic.

On the definitional side, it is difficult to speak of definitive decisions relating to a crisis or crisis situations (CS) in the literature on the subject. The lack of unambiguous and undisputed definition of the concept of a crisis and a crisis situation is due to the fact that they are very extensive and multidimensional phenomena. This led the author to assume that a crisis situation stems from the unfavorable formation of certain phenomena, but at the same time not threatening the continuation of the company. In turn, by crisis, the author means the state of the company in which difficulties have accumulated in the performance of its basic functions, with the simultaneous inability to remove the effects of such a state, which may directly threaten the existence of the company. This is how the author refers to the need for holistic and comprehensive consideration and resolution of issues related to crisis situations and crises, in line with the literature of crisis and anti-crisis management (Krzakiewicz, 2008 and Urbanowska-Sojkin, 1999).

The study assumes that successive waves of the SARS-Cov-2 pandemic can be considered to disrupt the development processes of companies and even threaten their survival. The SARS-Cov-2 pandemic crisis, on the other hand, was considered to be a state in which companies, as a result of the accumulation of difficulties associated with successive pandemic waves, may lose their ability to carry out their core functions and thus achieve their growth objectives. From a theoretical point of view, several scenarios for the emergence of crises in a given period can be distinguished. The considered scenarios are only illustrative, after all, there may be many combinations of crisis situations occurring in companies. Figure 1 shows the scenarios for the distribution of crisis situations in an enterprise.

Scenario 1 assumes that crisis situations are evenly distributed over time, thus crisis situations occur in companies at regular intervals, one after another. In scenario 2, companies face crisis situations at irregular intervals, with crisis situations not occurring simultaneously. Scenario 3 assumes that crisis situations occur at irregular intervals and, in addition, may occur simultaneously.

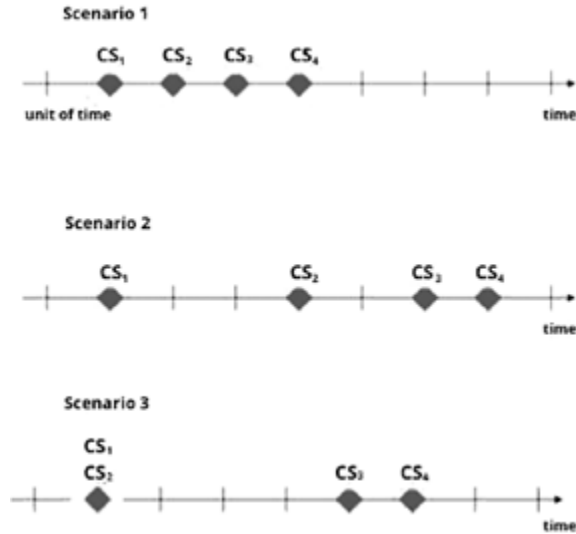


Figure 1: Scenarios for the distribution of crisis situations in a company

Source: author's own study.

The development of the SARS-Cov-2 pandemic in Poland indicates that due to successive waves of the pandemic, companies are facing crisis situations according to scenario 2. Table 1 shows the development of the SARS-Cov-2 pandemic in Poland from March 2020 to October 2021.

The data in Table 1 show that the COVID-19 outbreak occurred in Poland in March 2020 (first case on March 4, epidemic hazard alert from March 12, and epidemic status from March 20, 2020). During the first wave of the pandemic, a small number of cases of infection were detected in the spring of 2020. This was accompanied by limited testing of infected persons in Polish laboratories and strict epidemic restrictions. During the first wave of the pandemic, the number of new infections confirmed by testing did not exceed 600 per day, the number of patients hospitalized for COVID-19 was 3,500, and the number of deaths was 40 per day. Starting in May 2020, epidemic restrictions were gradually eased.

The second wave of the SARS-Cov-2 pandemic occurred in the fall of 2020. Despite the fact that since August 2020 social life restrictions have been introduced at the county level (dividing the country into green, yellow and red zones), the epidemic has returned with considerable intensity. In response to further increases in infections and hospitalizations, restrictions from the red zone were extended nationwide beginning October 24, 2020. The apogee of the second wave occurred in the second half of November 2020, when the number of daily infections reached 25,000, 23,000 beds were occupied in hospital infectious

Table 1: Development of the SARS-Cov-2 pandemic in Poland from March 2020 to October 2021

Months	Cases (thousands of people), at end of month					Number of cases, in thousands				Deaths (number of people)
	hospital	covered by the quarantine	confirmed by tests	fully vaccinated	vaccinations (doses)	infections	max. of 7-day average number of infections	tests performed	vaccinations (doses)	
March 20	1.9	172	2	.	.	2	0.2	51	.	33
April 20	2.8	92	13	.	.	11	0.4	287	.	609
May 20	2.2	77	24	.	.	11	0.4	578	.	421
June 20	1.9	83	34	.	.	11	0.5	606	.	400
July 20	1.8	98	46	.	.	11	0.5	724	.	253
August 20	2.1	97	67	.	.	22	0.8	469	.	323
September 20	2.6	134	91	.	.	24	1.4	618	.	473
October 20	16.4	439	363	.	.	271	17.3	1381	.	3123
November 20	21.4	263	991	.	.	628	25.6	1524	.	11521
December 20	16.8	165	1295	0	48	305	12.9	967	48	11401
January 21	13.3	163	1513	201	1177	218	9.6	1435	1129	8616
February 21	14.5	180	1707	1186	3336	194	9.7	1229	2159	6581
March 21	31.3	449	2320	2038	6271	614	28.7	2168	2935	9220
April 21	23.5	198	2791	2942	11751	470	28.9	2285	5480	14448
May 21	5.1	69	2871	7019	20085	81	6.7	1639	8333	6260
June 21	0.9	75	2879	13293	29242	8	0.8	1445	9158	1276
July 21	0.3	80	2882	17399	34366	3	0.1	1194	5124	236
August 21	0.5	53	2888	18788	36287	6	0.2	1178	1921	84
September 21	1.6	85	2906	19404	37178	18	0.9	1122	891	302
October 21	6.9	283	3024	19951	38996	118	7.5	1301	1818	1349

Source: data from the Ministry of Health.

diseases wards (about 65% of the declared status), and the number of deaths was about 500 people per day.

The third wave of the coronavirus pandemic in Poland (March-May 2021) was characterized by the emergence of a more contagious strain of SARS-CoV-2 virus, the so-called Alpha strain, (coming from the United Kingdom) and still relatively high numbers of infections at the start of the third wave. Despite the vaccination campaign conducted since December 2020, the number of officially confirmed infections reached 35,000 per day, i.e. exceeded the numbers recorded in the second wave.

As of September 2021, we are facing a fourth wave of the pandemic. We are again noting an increased number of coronavirus infections associated with the emergence of another, more contagious strain of the virus (designated the Delta). By the end of October this year, the course of the fourth wave compared to the previous wave was slower, less intense and less socially severe (the effect of immunity as a result of more than 50% of the population being vaccinated and acquiring immunity by getting sick, and the relatively low number of infections at the beginning of the wave).

At the beginning of November this year, the pandemic situation was dynamically deteriorating, the number of infections increased from about 10,000 at the end of October to 18,500 as of November 10 this year, with nearly 20% of positive test results and 11,500 people hospitalized. In contrast, the incidence of infection by region is more variable and affects mainly unvaccinated patients.

### 3. The impact of the SARS-Cov-2 pandemic on economic activity

The SARS-CoV-2 pandemic caused a massive drop in gross domestic product (GDP). The dynamics of GDP and its main components are shown in table 2 and Figure 2.

Table 2: GDP dynamics in Poland during the SARS-Cov-2 pandemic (from March 2020 to October 2021)

Items	20q1	20q2	20q3	20q4	2020	21q1	21q2	21q3
GDP	2.2	-8.2	-1.5	-2.5	-2.5	-0.8	11.2	5.1
Domestic demand	1.3	-9.1	-2.6	-2.9	-3.4	0.3	12.4	7.9
Household consumption	1.2	-10.6	0.3	-3.1	-3.0	0.1	13.1	4.1
Public consumption	3.2	4.3	3.3	8.1	4.9	1.6	3.0	3.6
Expenditures on fixed assets	2.5	-8.8	-7.2	-15.4	-9.0	1.7	5.6	7.6
Net exports (percentage points)	1.0	0.4	1.1	0.2	0.6	-1.1	-0.3	-2.3
Export	3.2	-13.5	2.4	8.1	0.1	7.3	29.2	8.2
Import	1.6	-15.6	0.5	8.5	-1.2	10.3	34.5	13.8

Source: GUS data.

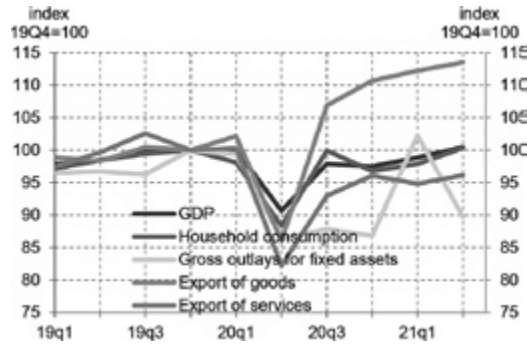


Figure 2: GDP dynamics in Poland during the SARS-Cov-2 pandemic (from March 2020 to October 2021)  
Source: GUS data.

Data from table 2 and diagram 1 show that gross domestic product in Poland declined in Q2 2020 by 8.2% y/y (-9.3% q/q s.a.), mainly on the back of a strong limitation in household consumption, particularly spending on services, private investment and exports. Epidemic restrictions have directly curtailed the operations of many service sectors, and a strong increase in uncertainty has prompted many companies to halt production.

Businesses were able to adapt fairly quickly to operating under pandemic conditions. Subsequent waves of COVID-19 cases have not affected economic activity as much. In Q4 2020 gross domestic product declined by only 0.4% q/q, and in Q1 and Q2 2021 it grew 1.4% and 1.6% q/q, respectively, thus surpassing Q2 2021 pre-pandemic levels.

During the SARS-Cov-2 pandemic, the situation of different economic sectors remained significantly different. The service sector in particular was in a difficult situation, especially the businesses related to culture, entertainment and recreation. However, as the pandemic situation improved, consumer demand for these services increased.

The improvement of economic activity in the main trading partners of Polish companies progressed slower than in Poland. Despite this, as early as Q3 2020 exports exceeded pre-pandemic levels. This was facilitated by the significant participation of Polish companies in the rapidly growing electro-mobility industry.

Increasing foreign and consumer demand was translated into business investment with a delay in the period under review, and the revival of investment activity included mainly outlays for means of transport, and machinery and equipment, and to a lesser extent buildings and structures. Public investment, after rising in 2020, recorded declines in the first half of 2021, while residential construction maintained a favorable outlook throughout the pandemic.

However, decisive fiscal and monetary initiatives in Poland and other countries allowed to limit the scale of the decline in economic activity and to quickly start the process of its recovery.

#### 4. Profitability and liquidity in Polish companies during the SARS-Cov-2 pandemic

In the first months of operation under the SARS-Cov-2 pandemic, the financial situation of non-financial enterprises deteriorated. Subsequent quarters, however, saw a pronounced improvement in the financial position. Figure 3 shows the dynamics of sales revenue during the SARS-Cov-2 pandemic.

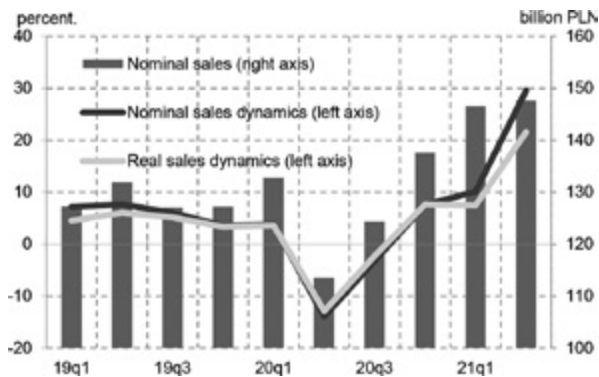


Figure 3: Sales revenue dynamics in the corporate sector during the SARS-Cov-2 pandemic. Source: GUS data.

The data in Figure 3 show that after declining in Q2 and Q3 2020, from Q4 2020 there was renewed growth in corporate sales revenue. In Q2 2021 sales were above pre-pandemic levels and the long-term trend.

Due to the strong cost adjustment efforts of companies (facilitated by the drop in commodity prices observed in the initial phase of the pandemic) and the government's anti-crisis measures, the financial performance of the corporate sector declined much less than revenues during the first wave of the pandemic, only to improve markedly thereafter thanks to the recovery in demand and slower rising costs.

In Q1 2021, the net turnover profitability of the corporate sector exceeded pre-pandemic values and reached historic highs. Figure 4 shows the profitability of net turnover in enterprises during the SARS-cov-2 pandemic.

Thanks to cost-cutting and government anti-crisis measures, the sharp decline in economic activity during the first wave of the pandemic did not cause a deterioration in companies' profitability.

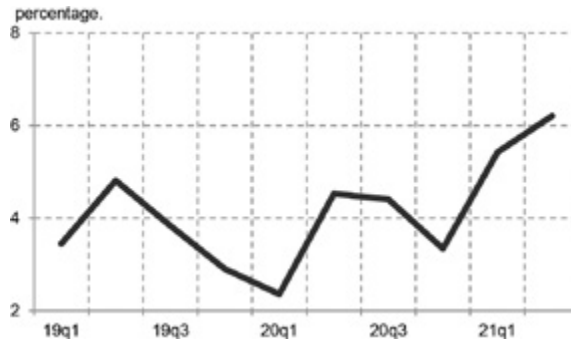


Figure 4: Profitability of net turnover in enterprises during the SARS-Cov-2 pandemic

Source: GUS data.

Figure 5 shows the development of financial liquidity in companies during the SARS-Cov-2 pandemic. The ratio of cash liquidity on level 1 was used in the analysis (Mikołajewicz, Nowicki, 2021, p. 210)

The data in diagram 4 shows that financial liquidity was at a high level during the period under consideration.

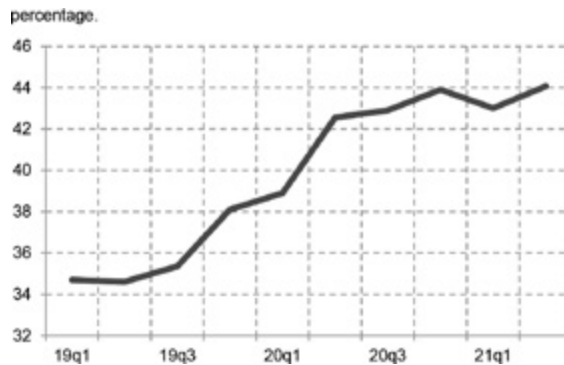


Figure 5: Level I liquidity in companies during the SARS-Cov-2 pandemic

Source: GUS data.

The favorable situation in terms of profitability and liquidity was crucial for the formation of value in the management of companies in the studied period (Jaki, Ćwiek, Rojek, 2021, pp. 165–175) on which the assessment of the economic condition of enterprises should depend. The improving economic situation of companies, after the deterioration during the first wave of the pandemic, is evidenced by the development of indicators of the current economic situation of enterprises during the SARS-Cov-2 pandemic, as shown in Figure 6. The formation of the index of assessments of the



The financial situation of Polish enterprises in the context of subsequent waves of SARS-COV-2 pandemic

current economic situation of companies is determined by the result of the survey of responses favorable and unfavorable to the situation of companies. These indexes take values in the range from +100 to -100. Negative results should be interpreted as a deterioration of the economic situation, while positive results should be interpreted as an improvement (The NBP Rapid Monitoring, 2021, pp. 70–72)).

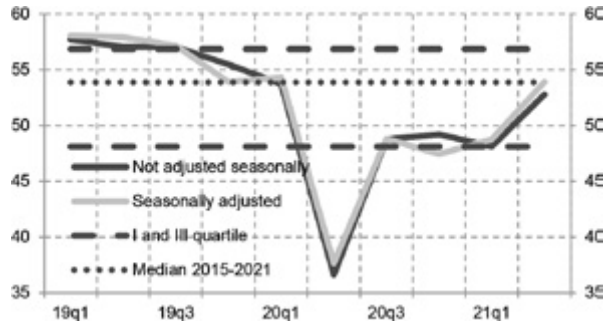


Figure 6: Index of assessment of current economic situation of the enterprise

Source: data from the NBP Rapid Monitoring.

The data in Figure 6 shows that in Q3 2021, the synthetic index of the current economic situation rose to its highest level since 2008. The rapid increase in the index was due to both a pronounced recovery in assessment sentiment in the industries hardest hit by the epidemic restrictions and a slight improvement in other sections of the economy. The rapid recovery of the index, after the shock of the coronavirus pandemic and the restrictions on the free functioning of the economy, was mainly due to the aforementioned good liquidity situation of the corporate sector.

Table 3 presents data on profitability and financial liquidity of Polish companies during the SARS-Cov-2 pandemic on a quarterly basis.

Table 3: Profitability and financial liquidity of Polish enterprises during the SARS-Cov-2 pandemic (quarterly)

Items	average value in the years 2010–2018 (in %)	value in Q2 2020	value in Q3 2020	value in Q4 2020	value in Q1 2021	value in Q2 2021
Profitability index	4.0%	4.5%	4.4%	3.3%	5.4%	6.2%
Index of profitability of assets	1.2%	1.1%	1.2%	1.0%	1.5%	1.8%
Percentage of profitable enterprises	73.1%	73.4%	76.0%	74.5%	76.0%	77.9%
I degree financial liquidity ratio	36.3%	42.6%	42.9%	43.9%	43.0%	44.1%

Source: GUS data.

The data in table 3 suggest that the profitability indexes of companies during the pandemic period – except for the fourth quarter of 2020 – were higher than their average from 2010 to 2018. Companies showed the highest return on revenue in Q2 2021, up 1.7 percentage points compared to the previous year. An analytical look at the statistics showed that a pronounced improvement in profits emerged particularly in industries affected by pandemic-related restrictions, including tourism, accommodation, sports activities, air transport and food, accompanied by a strong increase in sales revenue after a decline in the same period in the previous year. However, it must be stressed that in many cases these companies continued to generate losses, for example in sports activities, air transport, tourism and accommodation. Also positive is the development of the return on assets ratio, which in 2021 is clearly higher than the average value in 2010–2018. What is noteworthy is the higher percentage of profitable companies, which increased despite successive pandemic waves. Also, the liquidity situation of companies must be considered good in all quarters of the examined period.

## 5. Conclusion

The development of the SARS-Cov-2 pandemic is causing companies to face more emergencies. Developments related to the COVID-19 pandemic and to possible restrictions on the free functioning of national economies and the global economy may be crucial to assessments of the enterprise sector's prospects for growth well into the future.

At the beginning of the SARS-Cov-2 pandemic, the financial situation of companies deteriorated. Subsequent quarters, however, saw a pronounced improvement in the financial situation and a recovery in sentiment. Currently, the financial situation of the corporate sector is favorable, this applies to both profitability and financial liquidity.

The relatively good financial position of companies during the SARS-Cov-2 pandemic was primarily determined by the cost adjustment measures taken by companies. Cost adjustment measures were aided by the decline in commodity prices observed in the early stages of the pandemic. Companies seeking to maximize value in the midst of the pandemic crisis had to modify their approach to cost management so that subsequent waves of the pandemic would not threaten the company's survival first and value creation second. Any mismanagement of costs could exacerbate the crisis.

Government anti-crisis measures and decisions and actions of the central bank also had a positive impact on the financial situation of companies.

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# **BREAKTHROUGH IN JUDICIAL RESTRUCTURING PROCEEDINGS IN POLAND AS CONSEQUENCE OF THE COVID-19 PANDEMIC**

## **1. Introduction**

New qualities in the sphere of communication, trade, new technologies and services, accompanied by unprecedented dynamics, are positively received and quickly fit into our everyday life. Also business owners and their management boards try to use innovative solutions in order to improve their position on a competitive market. On the other hand, they must protect themselves against the threat posed by market novelties – the wide scope and scale of which may result in an increased risk of a crisis.

Scientific literature differently perceives the essence of the crisis in an enterprise.

And so, it is believed that crises will accompany us all our lives and we must be prepared for them (Otwinowski, 2010). They should be treated like alarm clocks: nobody likes them, but they are needed and can be used wisely (Obłój, 2007). Crises are the result of the appearance of unexpected disruptions in the activities of the organization, including both external and internal factors of a random nature (Mitrofi i Pearson, 1998).

One can also encounter views about the crisis as a pathology in the development of the company, often caused by the disproportion between goals and resources to achieve these goals (Urbanowska-Sojkin, 2003).

The first twenty years of the 21st century were characterized by a stable development of the world and Polish economy, disturbed only by periodic turbulences after the collapse of the Lehman Brothers bank on September 15,

2008. The year 2020, in turn, brought the COVID-19 pandemic, which disrupted the social and economic life of most countries in the world, including Poland.

The aim of the article is to analyze the impact of the COVID-19 pandemic and changes in regulations on the number of open restructuring proceedings in Poland. The subject of the research were the procedures supported by the provisions of the Restructuring Law in the last five years and the preferences of entrepreneurs regarding the choice of the procedure that would be optimal from their point of view.

## **2. Restructuring law as a signal of the beginning of changes**

Entrepreneurs that were insolvent or threatened with insolvency could, until December 31, 2015 support restructuring activities that pertained them, with the provisions of Act of 28 February 2003 – Bankruptcy and Reorganisation Law, which contained two solutions enabling the entrepreneur to avoid bankruptcy and return to functioning on the market. The first was a declaration of bankruptcy with the possibility of an arrangement, the second was reorganisation proceedings, intended for entrepreneurs threatened with insolvency. Both institutions were rarely used in the years 2003–2015, and their effectiveness was virtually zero, as shown in numerous publications (Głowacki i Zalewski, 2016), (Mączyńska, 2013).

Voices from organizations associating entrepreneurs, statements from the world of science and negative statistics prompted the Minister of Justice to undertake work aimed at implementing new solutions. Since January 1, 2016, the Act of May 15, 2015 – Restructuring Law applies, which has introduced four restructuring proceedings:

- arrangement approval proceedings;
- accelerated arrangement proceedings;
- arrangement proceedings;
- remedial proceedings.

The purpose of the act is to enable the indebted entrepreneur to conclude an arrangement with creditors, and in case of the last of the aforementioned proceedings – to take remedial actions. This is definitely more advantageous than the liquidation of the company through bankruptcy procedures. Thus, the restructuring procedure gains clear primacy over ‘joint pursuit of claims against an insolvent debtor’ (Zimmerman, 2016). Another important provision is that the submission of a restructuring application resulting in the opening of proceedings leads to the exclusion of responsibility of a member of the management board of a limited liability company for the company’s obligations, which results from the wording of Article 299 of the Commercial Companies Code (Adamus, 2015).

In the years 2016–2019, there was a gradual increase in entrepreneurs’ interest of in the provisions of the Restructuring Law. It is also worth mentioning that it was a very good period for the Polish economy.

Table 1: Bankruptcy and restructuring proceedings in 2016–2019

	2016	2017	2018	2019	TOTAL
GDP growth	+2,8%	+4,6%	+5,1%	+4,0%	
Bankruptcy of companies	606	591	615	586	2.398
Opened restructuring proceedings	212	348	465	465	1.490

Source: the Court and Commercial Gazette and [www.coig.com.pl](http://www.coig.com.pl)

The number of opened restructuring proceedings grew every year and approached the number of bankruptcies, which in turn stabilized in those years.

Table 2: Number of open restructuring proceedings

TYPE OF PROCEEDINGS	2016	2017	2018	2019	TOTAL
arrangement approval proceedings		10	4	3	17
accelerated arrangement proceedings	134	198	294	313	939
arrangement proceedings	30	53	46	33	162
remedial proceedings	48	87	121	116	372
TOTAL	212	348	465	465	1.490

Source: the Court and Commercial Gazette and [www.coig.com.pl](http://www.coig.com.pl)

Two procedures aroused the greatest interest:

- Accelerated arrangement proceedings, dedicated to entrepreneurs interested in efficient conclusion of an arrangement with creditors.
- Remedial proceedings, in accordance with the intention of the legislator, are aimed not only at restructuring the enterprise by concluding an arrangement with creditors, but also by carrying out remedial actions, while preserving the creditors’ rights.

The practice of the last five years shows that administrators in remedial proceedings most often used the rights related to labor law and withdrawing from reciprocal agreements. In this way, it is possible to resign from unperformed or partially performed contracts, which pose a threat to the existence of the restructured enterprise, due to e.g. negative profitability. (Grenda, 2017). Rational and practical solutions secured by the Restructuring Law did not fully neutralize the concerns of indebted entrepreneurs with regard to the Court’s decision to open proceedings and the relevant competences and experience of the appointed arrangement supervisor

or administrator. Licensed restructuring advisor in the legal nomenclature until December 31, 2015 was called a trustee, regardless of the functions he performed, and his presence is still associated with the liquidation of the company's assets

According to the data from the Court and Commercial Gazette, in 2015 a total of 101 bankruptcies with the possibility of an arrangement and reorganisation proceedings were announced, and in 2019 465 restructuring proceedings were opened. The more than fourfold increase in the number of these proceedings was certainly caused by the frequent statements of experts in the media, in the forum of entrepreneurs' organizations as well as institutions supporting entrepreneurship in Poland, which promoted the use of the solutions contained in the Restructuring Law. On the other hand, numerous comments were made when it comes to arrangement approval proceedings, which was supposed to be an effective and simple tool to regulate relations with creditors. The lack of protection of the indebted entrepreneur against debt enforcement by creditors at the stage of gathering votes was emphasized. It was suggested that it should be introduced by suspending the enforcement proceedings in operation and prohibiting the initiation of new ones. This resulted in limited interest in this proceedings. The second aspect is the extensive lengthiness of proceedings, in particular felt at the stage of appeal proceedings. The advisability of concentrating restructuring proceedings in the largest courts specializing in conducting this type of proceedings was also indicated (Piotrowicz, 2019)

The Restructuring Law did not solve the key problem that affects Polish insolvent enterprises, which is the lack of funds and institutions to support them financially once the crisis has emerged. The restructuring proceedings is effective if a sufficiently large financial leverage is involved in this process, which means obtaining external or internal capital from shareholders (Masiukiewicz and Nowak, 2013). The legislator, admittedly in article 26 of the Restructuring Law, obligated court supervisor to inform the entrepreneur about available sources of financing, but unfortunately this is a dead letter. The lack of entities on the market that would be interested in commercial support for companies that found themselves in a financial crisis results in a lower ratio of agreements concluded with creditors.

### **3. Restructuring Directive of the European Parliament**

In parallel with the implementation of legislative changes in Poland regarding proceedings dedicated to entrepreneurs during the crisis, a debate was held at the forum of the European Parliament on the standardization and improvement of such activities in all Member States of the European Union. It resulted in the adoption on June 20, 2019 by the European Parliament and



the Council of the European Union of Directive 2019/1023 on a framework for preventive restructuring, debt relief and bans on conducting business activity, as well as on measures to increase the effectiveness of restructuring, insolvency and debt relief proceedings. Its aim is to harmonize the regulations governing the above-mentioned areas in individual Member States of the European Union .

The Directive highlights three important issues:

- ensuring access to early warning tools,
- preventive restructuring,
- debt relief – a second chance mechanism.</b>.

Directive 2019/1023 broadly describes the concept of early warning tools. They include not only the instruments of multi-faceted, advanced economic analysis, but also individual impulses that may indicate an impending threat, e.g. information about the lack of timely payment of taxes (Adamus, 2021). Pursuant to Article 4 of the Directive, in the event of probable insolvency, EU members are obliged to enable entrepreneurs to carry out the restructuring process at an early stage, which should reduce the number of liquidations of companies.

The set of legal instruments should enable the company to maintain control over the enterprise, protect it against creditors and allow for remedial activities to be taken (Świerczyński, 2021). Moreover, the Directive in Article 6 provides for the suspension of individual debt enforcement activities for a period of up to four months, and in Article 7 terminating and accelerating the execution (or introducing changes) of basic reciprocal agreements regarding the restructured enterprise. In individual Member States of the European Union, the Directive should be implemented by July 17, 2021.

The second chance mechanism is related to the issue of debt relief in case of over-indebted entrepreneurs, with subsequent limitation of the application of bans on conducting business activity. As a rule, it is assumed that the period after which insolvent entrepreneurs can obtain complete debt relief may not exceed 3 years (Jagocha, 2019).

#### **4. Simplified arrangement approval proceedings**

The COVID-19 pandemic, which from March 2020 has affected the economies of all countries in the world, has caused crises, which directly affected the functioning of most enterprises.

In 2020, the greatest economic downturn in Poland took place between March and June. The economic situation indicator fell to the level of 60.5, while in January it was 99.3 (Rokicki, 2020). The negative effects of the pandemic were visible in both quantitative and qualitative data, and so far such intense changes have not been observed in any of the post-World War II business cycles.

The crisis caused by the COVID-19 pandemic is not unique in the current economic reality. We are struggling with a climate, demographic and immigration crisis. The COVID-19 pandemic – through the synergistic emergence of crisis phenomena that resulted from it – intensified this crisis multiplication (Mączyńska, 2021). Currently, the key challenge for enterprises is to be the ability to achieve economic resilience, flexibility of operation expressed in quick adaptation to the changing requirements of buyers and the ability to return to a stable state after the crisis has passed (Banaszyk and Gorynia, 2020).

Moreover, at the time of the outbreak of the COVID-19 pandemic, the economic situation in the European Union was at the stage of a slowdown of economic growth, which began at the turn of 2018/19, ending the growth phase that had lasted since 2014. The restrictions on activity that were introduced starting from the second quarter of 2020, resulted in a sharp economic downturn (Adamowicz, 2021). Government support for entrepreneurs only partially neutralized the effects of downtime and a significant drop in revenues. In most cases, the funds obtained from the crisis shield program covered the salary expenses. A large number of entrepreneurs were losing financial liquidity, which was visible from the third quarter of 2020.

The legislator, meeting the dramatic situation of many Polish entrepreneurs, adopted the Act of June 19, 2020 *On subsidies to interest on bank loans granted to entrepreneurs affected by the effects of COVID-19 and the simplified arrangement approval proceedings in connection with the occurrence of COVID-19*.

The Act introduced the fifth restructuring procedure – simplified arrangement approval proceedings. The concept is largely based on the solutions adopted in the Directive of June 20, 2019. The scenario of the procedure is as follows:

1. An insolvent entrepreneur or an entrepreneur at risk of insolvency concludes a contract with a restructuring advisor, after which table of claims, the table of disputed claims and an initial restructuring plan are drawn up.
2. The entrepreneur announces in the Court and Commercial Gazette about the opening of the simplified arrangement approval proceedings, stating, inter alia, his identification data, first and last name or the name of the entity that, after concluding the contract referred to in point 1 above, assumed the role of the supervisor and indicates the arrangement date.
3. Once the proceedings are opened, other enforcement proceedings relating to claims are suspended, some contracts may not be terminated, and the entrepreneur's powers are limited to the scope of ordinary administration.
4. The arrangement supervisor convenes the meeting of the creditors to vote on the arrangement or collects votes.

5. After the conclusion of the arrangement, the debtor applies to the court for the approval of the arrangement, and the arrangement supervisor submits a report with a statement of conclusion of the arrangement; together with the restructuring plan.
6. arrangement approval proceedings shall be discontinued by virtue of law, if no application for the approval of the arrangement is received by the court within four months from the date of the announcement.

The above presented legal status was in force until November 30, 2021.

The difficult situation of many entrepreneurs caused by the paralysis of the economy resulted in many announcements about the opening of a simplified arrangement approval proceedings. An amendment to the Restructuring Law has been in force since December 1, 2021, introducing simplified restructuring solutions to the arrangement approval proceedings.

Table 3: Restructuring proceedings in 2020 and 1st half of 2021

TYPE OF PROCEEDINGS	I-VI 2020	VII-XII 2020	I-VI 2021	TOTAL
simplified arrangement approval proceedings		392	869	1.261
Other restructuring proceedings	225	183	134	542
Companies' bankruptcies	329	258	230	817

Source: [www.coig.com.pl](http://www.coig.com.pl)

In the first half of 2021 simplified arrangement approval proceedings dominated reorganisation proceedings supported by legal provisions.

The arrangement supervisor plays a significant role in the simplified arrangement approval proceedings. A licensed restructuring advisor or a company having such powers is responsible for the selection of repair tools that will be used to save the enterprise (Benduch and Janik, 2016). Moreover, pursuant to Article 26 of the Restructuring Law, the court supervisor informs the entrepreneur and takes actions aimed at obtaining an additional source of income, including state aid. In the academic literature, attention is paid to the functions performed by the arrangement supervisor, assigning him the term of the 'change agent' responsible for their implementation (Bajan, 2019).

The essence of the breakthrough that took place on the date of entry into force of the act introducing simplified arrangement approval proceedings is related to three aspects:

- the entrepreneur independently selects a licensed restructuring advisor (arrangement supervisor) with whom he will conduct the proceedings,

- the arrangement supervisor and the indebted entrepreneur prepare a preliminary restructuring plan and decide on the date of the announcement on the opening of the proceedings,
- the proceedings last a maximum of four months from the date of the announcement, which is important from the point of view of the protection of the creditors' interest, and the entrepreneur's actions are verified by the arrangement supervisor and limited to the scope of ordinary administration.

These solutions present a completely new quality, which was in line with the demands of the economic community and fulfilled the expectations of indebted entrepreneurs

## 5. Conclusion

The COVID-19 pandemic has had a very negative impact on the economy not only in Poland. The supply and demand shocks immediately affect the production and employment processes, which results in the reduction of exports and imports (Estrada, 2020). Logistics chains have been broken, some components are missing, which makes it impossible to complete production processes, and inflation is rising. 'Staggression' – the pressure on stagnation – has a negative impact on the economic and financial situation of many enterprises. In this aspect, the EP Directive of June 20, 2019, which obligated European Union countries to adopt solutions supporting entrepreneurs in crisis situations, was 'prophetic'.

The results of the research confirmed the gradual increase in procedures supported by the provisions of the Restructuring Law, starting from 2016 (from 212 in 2016 to 465 in 2019). The breakthrough took place in 2020 after the economic effects of the COVID-19 pandemic became visible and after the law introducing a simplified arrangement approval proceedings came into force (i.e. since June 24, 2020).

The number of 1,261 open simplified arrangement approval proceedings during the first year of operation of the Act confirms the advisability of this solution.

Between July 1, 2020 and June 30, 2021, a total of 1,803 restructuring proceedings were opened, out of which 70% of were simplified arrangement approval proceedings. The conducted research showed a strong correlation between the number of opened proceedings and the dynamics of the situation in Polish companies and the emerging financial crises. The reaction of entrepreneurs to the negative phenomena was very efficient and was based on new legal solutions.

The COVID-19 pandemic has caused, as stems from the conducted analyses, a breakthrough in the formula of restructuring proceedings in Poland, which, according to statistics, 'are leaving the walls of the courts' Entrepreneurs in a situation of financial crisis have decided, starting from the second half of 2020, to independently make decisions about opening restructuring proceedings. The burden of responsibility for the opening of the proceedings and supervision over its course currently rests with the arrangement supervisor – a licensed restructuring advisor, who is responsible, inter alia, for declaring the company's insolvency.

The short period of operation of the new solutions makes it impossible to fully assess their effectiveness, and to determine the ratio of concluded and performed arrangements with creditors regarding the repayment of claims. The first signals from the arrangement supervisors indicate that the simplified arrangement approval proceedings have helped many entrepreneurs in the crisis caused by the COVID-19 pandemic and allowed them to stabilize their financial situation.

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# THE QUALITY OF PROPERTY INSURANCE SERVICES IN THE COVID-19 PANDEMIC

## 1. Introduction

At the beginning of the 21<sup>st</sup> century the idea of corporate social responsibility is known worldwide and corporate citizenship has become a global phenomenon (Olesiński, 2005; Raszkowski, 2015). In many places there are initiatives which engage business leaders, none-governmental organisations and government administration authorities. The idea of corporate social responsibility (CSR) which has been recognised in Europe for many years has recently gained popularity in Poland. Insurance sector undertakes activities for their stakeholders and the community treating them not as costs but as investments which will help to achieve the above mentioned aim, looking after the interests of all those interested in the company's achievements at the same time (Bernard, 1938; Kreps, 1940; Bowen, 1953).

The research issue of this data study is connected with functioning of corporate citizenship. It has become of crucial importance for the insurance sector especially during COVID-19 pandemic. The issue is frequently brought up by the scientific environment as well as business. This data study is devoted to the issue of corporate social responsibility in the sector of business insurance with regard to restitution of the insurance contract during COVID-19 pandemic. The publication is a kind of the quality of property insurance services in the COVID-19 pandemic. Thus, this research paper is structured in such a way so as to verify the hypothesis that the development of the business insurance market is related to shaping the institutional attitude to the quality of property insurance service in the field of sustainable development through the restitution of the insurance contract in the time of the COVID-19 pandemic. The research has been conducted on the basis of author's own indicators as well as on the survey questionnaire.

The issues raised in this data study deal with theoretical, historical as well as practical aspects connected with shaping of the institutional foundations of the quality of the property insurance service in terms of sustainable development, managerial competences necessary to introduce innovative solutions in the area of company management and examples of in practice during the COVID-19 pandemic and after it. The research has been conducted in two stages through a survey questionnaire and author's own indicators.

## **2. A new approach to corporate citizenship during COVID-19 pandemic**

The idea of CSR (Davis, 1960; Goyder, 1961; Friedman, 1962) is becoming widely discussed internationally as well as nationwide. Although it is difficult to provide one definition which will reflect the complexity of the issue, it should be stressed that it is the efficacy which is of crucial importance and not the definition itself. The terms “ethical business”, “corporate citizenship” or “moral business” appear in religious, ethical as well as sociological or economical sources. Such activities can be applied on a large scale or locally. They may be applied by both international corporations and small entrepreneurs. Enterprise based on the CSR gives a new quality for both the company itself (Androniceanu, Tvaronavičienė, 2019) and the environment in which it operates (Popescu, 2014). Although in reference books there are sceptical opinions concerning the implementation of social corporate responsibility norms into business management structures still ethically conscious business is a great chance to improve living conditions of us all (Chowdhury, Audretsch, & Belitski; 2019; Raszkowski, Bartniczk, 2019). According to A.B. Carroll (1979), corporate citizenship may be defined as the one which is profitable, obeys the law, has good ethical practices and supports the society (is a good citizen). On the other hand T.S. Pinkstone and A.B. Carroll (1996) stated that the importance of legal and economic conditions among the interviewed managers is successively falling whereas ethical responsibility and philanthropic involvement are rising. I. Ansoff (1979) had a completely different approach to CSR. He dealt with the usefulness of CSR in strategic management claiming that the company's operation strategy was needed in order to improve the level of competitiveness (Porter, 2001; Donaldson, Peterson, 1995; Freeman, 1984) in the social environment (Chowdhury, Audretsch, & Belitski; 2019; Zajkowski, Domańska, 2019; Alińska, Filipiak, Kosztowniak, 2018) and new variables corresponding to this process (Solesvik, 2019).

Concluding the above considerations and taking into account COVID-19 pandemic, it can be stated that corporate citizenship takes into consideration stakeholders points of view in respect of four dimensions while operating on



a for-profit basis. In other words, corporate citizenship does not mean meeting all the formal and legal requirements. It does not deal with the most basic forms of philanthropy or sponsorship of various cultural events namely giving away money. Corporate citizenship is a strategy-based and long-term approach in the process of business management based on the principle of social dialogue and looking for solutions beneficial for all the stakeholders (Figure 1).

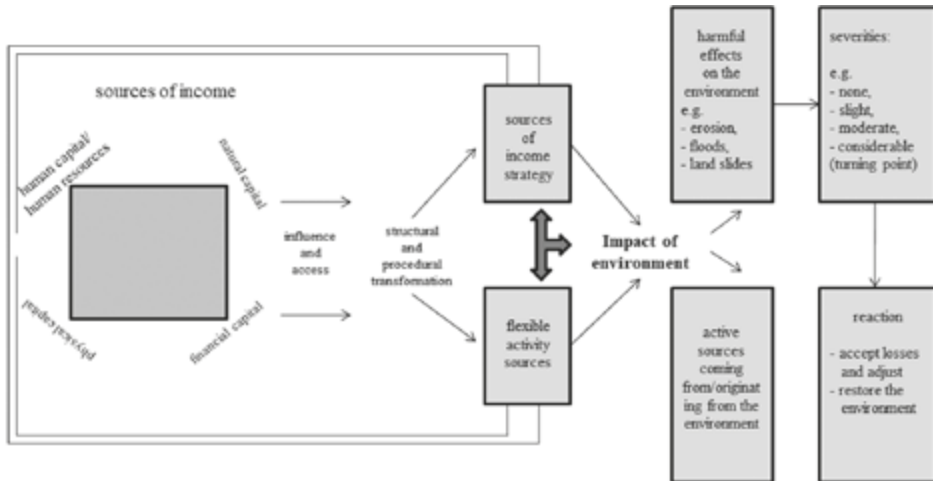


Figure 1: The model of sustainable development

Source: author's own elaboration based on [cf. Donaldson, Peterson, 1995; Mariański, Sułkowski, 2021].

Taking into account considerations presented in figure 1 as well as the definition it can be stated that corporate citizenship no matter when and what type of business is run means:

- 1) voluntarily taking into account, economical, legal, social, ethical and ecological aspects in business activity;
- 2) sense of responsibility for the stakeholders and the environment as well as for the success of the economy;
- 3) taking care of employee development, employment growth (including groups excluded from the labour market), pro-environmental actions;
- 4) making sustainable profit whilst shaping relations in a wise way and taking into account stakeholders' arguments;
- 5) providing services and products in a way which does not pose a threat to the environmental balance which constitutes a functional whole in which an exchange of matter between biocoenosis and biotope takes place;
- 6) building and implementation of the company management processes strategies, social engagement, exceeding legal obligations for the benefit of all citizens, in accordance with the commonly accepted ethical standards;

- 7) making useful contribution to sustainable development by cooperation with the central government, business and local community to improve the quality of life of all citizens (Figure 2).

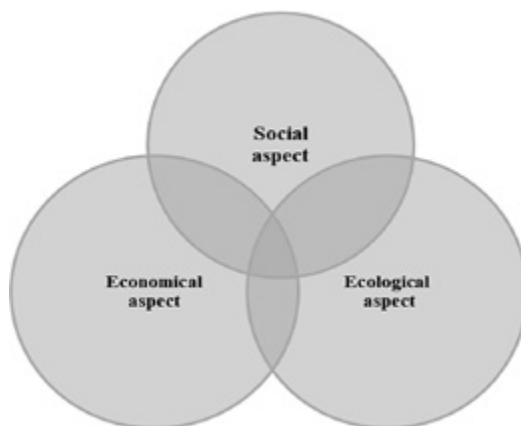


Figure 2: The notion of corporate citizenship

Source: own elaboration.

### **3. Corporate citizenship and business insurance market during the COVID-19 pandemic**

Every insurer, regardless of the location, faces its own separate challenges not only those for the insurance industry, but also for the economy and the whole society. However, the biggest concern for the insurers is the healthcare system and ensuring safety of the employees and their channel partners (insurance agents, insurance brokers) in the community, who aim at ensuring business continuity. They have to review and update their plans concerning crisis management (Kraus, Clauss, Gast, Zardini & Tiberus; 2020; Androniceanu; 2020) and take steps to pursue their activities with minimal disruption to the customers (Przybytniowski, 2016; 2021; Źak, Garncarz, 2020). If they have not done it so far insurers should consider establishing decision-making multidisciplinary crisis teams which will be responsible for the coordination of company reactions, creating new safety protocols and ensuring faster functioning as the conditions evaluate (Raszkowski, Bartniczak, 2018). There should also be a complex system of communication (Solevik, 2019), which will give the workers, distributors and clients full scope of data concerning business continuity plan and instructions concerning maintaining security. It should be remembered that an insurance company's client does not have tools to define the social activity of a company from which he or she took out an insurance. A customer does not distinguish between

the strictly social activity of a company and the commercial activity of a pro-social character. Insurers, being the senders of those messages, seem to maintain the unclear image by keeping those messages incoherent. An announcement about corporate social responsibility during the COVID-19 pandemic (Amore, Quarato & Pelucco, 2020) does not define its complex functioning as a socially responsible behaviour and the way in which the activities were introduced including those of strict promotional character often indicated the high level of cynicism or indifference which, in long term, is noticeable for a customer.

Global insurance market during the COVID-19 pandemic responds to many factors including:

1. Fulfilling financial commitments to clients (on-time payment and the speed of loss indemnification and paying claims);
2. Ensuring good capital management;
3. Safety of employees (courses and trainings, salary, workplace etc.).

For this reason, insurance companies consider those aspects from the point of view of increasing their business market value. Thanks to its image and employees' know-how companies gain in value which is visible in high loyalty level among customers or in superior level of market penetration which is beyond a standard book value. Solutions which often make the insurance company look more pro-social and pro-ecological are dictated by savings and efforts to make the use of the budget in the most efficient way [Przybytniowski, 2021; Comes, Bunduchi, Vasile & Stefan, 2018; Pawłowski, 2018]. Research presented by J. Rifkin is a great example supporting this (Rifkin, 2000).

Distribution channel Sector I and II during the COVID-19 pandemic (Ayittey, Ayittey, Chiwero, Kamasah & Dzuovor, 2020) should be adjusted to: product, product designation and its use, selling arrangements, type of the market and the final customer who decides about the correctness of choice and the functioning efficiency (Przybytniowski, 2010)<sup>1</sup>. The decision concerning the choice of an appropriate distribution channel allows it to build a more effective communication, which will get through to those entities which need to be sensitized to the social, economic or legal problems. As a result, on the insurance market there are two groups of services of different nature, where (Przybytniowski, 2019): the demand is characterised by some stability (eg.: car insurance, property

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<sup>1</sup> According to the Author distribution process includes all the activities as well as insurance market participants dealing with production process, brokering, taking out insurance which are connected with the development of the insurance product leading to purchase-sale transaction. This process takes place before, after the development of the insurance product and also during the transaction conducted through an insurance broker. So it can be stated that providing insurance services is a concept broader than only its distribution [see: 36].

insurance, life insurance) or some variability (eg.: luggage insurance, rowing and paddling equipment insurance). While fulfilling its mission, the insurer may use different segmentation criteria of actual and potential buyers. Product specification offered for distribution by property insurance companies, regardless the scope of proposal, always consists in making the actual and potential buyers aware of the risk taken, the likelihood of damage occurring or rights to property violation. Conclusion of an insurance agreement particularly meets the expectations of the customers, increases the feeling of safety and certainty (Przybytniowski, 2012). An answer to the questions: Who shall the insurance activity be liable to and what constitutes this liability is of crucial importance. The author will try to answer those questions in the empirical part.

#### **4. Methodology**

A survey questionnaire was used for qualitative positioning of insurance companies' customers' attitudes. The research was conducted from November to December 2020. 2000 survey questionnaires were sent to the respondents, 1205 of which were returned. The survey was directed (direct contact through interviewers) to clients who have taken out an insurance contract with Sector I and II insurance company in question. The survey consisted of carefully selected closed questions, one-choice questions or multiple-choice questions divided into a general part including questions connected with knowledge about CSR and a specific part concerning efforts which should be, according to the respondents, undertaken when it comes to providing information about companies' socially responsible behaviours during COVID-19 pandemic. Selection criteria of the insurance companies' customers' classification has been carried out on the basis of the survey research results. Stratification was used while choosing the research group. Stratified sampling required dividing the survey into subgroups (classes, layers), however sample objects were chosen randomly. Using the stratified sampling method was aimed at providing particular groups with sufficient sample size and making sure that different groups that make up the population are equally represented in the research sample. It increased the level of accuracy while estimating parameters. The very issue of stratification meant dividing the population into groups in such a way that elements belonging to one group were more similar to each other than elements belonging to the population as a whole. That is why, a set of homogeneous groups separated on grounds of variables researched was created. While choosing elements from each group separately a collection of homogeneous samples was created which constituted a sample of more heterogeneous population. In this way the level of accuracy of estimated parameters was higher. Stratification does not break the assumptions

of randomness as within each layer the sample was chosen at random. Statistical margin of error with such a research group was 2.88%. Selection base in shaping the layers was the statistical data from Statistics Poland between 2010–2020 concerning age, place of residence and education.

The research was conducted on the group of 1205 respondents including 462 (38.3%) rural residents and 743 (61.7%) city dwellers. 849 respondents (70.1%) confirmed taking out voluntary insurance whereas 29.5% (356) denied having one. 105 out of all the respondents were insurance companies' workers, 46% out of whom worked on managerial and executive positions.

## 5. Research results

Taking into consideration the way insurance companies' workers and their behaviour are perceived as well as the knowledge about CSR during COVID-19 pandemic seen from the angle of taking out an insurance, loss indemnification so insurance contract restitution, survey research results indicate that insurance companies' customers evaluate them mainly on the basis of customer's service quality during loss indemnification (43%), quality of the products (40%), paying claims (39%), the amount of the insurance premium (32%). On the opposite pole there are almost all CSR characteristics. Involvement of the insurance companies' workers in social activities (4%), responsible and ethical behaviour (3%), charitable activity (2%) or actions insurance companies undertake in relation to the natural environment (2%) are thought to be of a subordinate meaning. Insurance companies are mainly seen from the angle of basic, everyday tasks they should do for their clients by offering an appropriate product, the price the product can be purchased for but mainly from the angle of the service quality when the damage occurs as well as of the process of loss indemnification. This implies that *insurance company's customer expects to get a good quality insurance product as well as to be taken care of when the indemnifiable accident occurs, especially during COVID-19 pandemic. Thus organisational culture of an insurance company guarantying fair interpersonal relations or the issues connected with insurance companies' workers engagement in social life e.g. taking part in charity events as well as protection proceedings are aspects of secondary importance.*

Respondents think that the discourse among the insurance companies' representatives in respect of attitude towards CSR is still badly rated, even in the situation when there is a real problem connected with COVID-19 pandemic. This state of affairs is connected with overall development level of market economy and low customers' awareness concerning their role and companies' responsibility towards societies (Przybytniowski, 2012). This thesis is confirmed by the analysis of the expectations respondents have towards the companies within the field of

corporate social responsibility activities. When asked what activities should an insurance company undertake to be described as socially responsible over one third of the respondents pointed to employees rights. Every seventh employee expects from a socially responsible company to act in a fair and just way and almost every eleventh wants such company to take into account common weal. Almost every sixth of the respondents was not able to define any expectations (Figure 3).

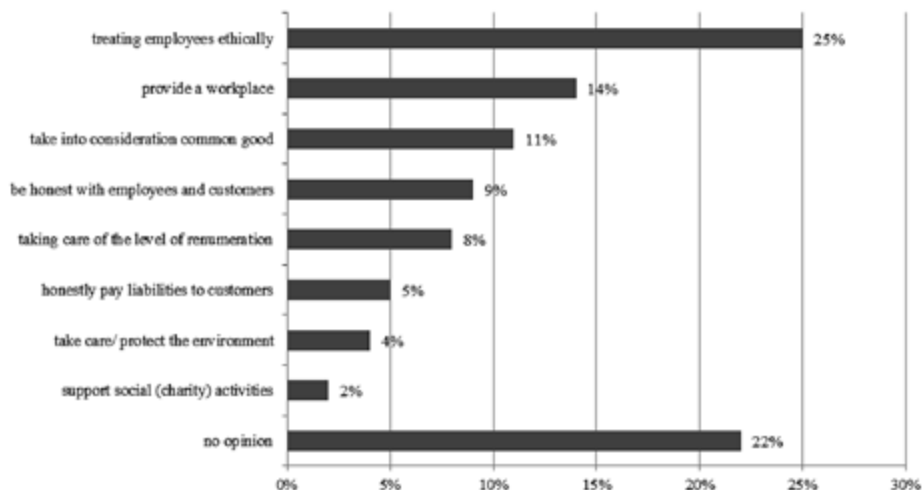


Figure 3: What should an insurance company do to be defined as a socially responsible community institution (N-1205)

Source: Source: author's own elaboration based on the conducted research.

The results of the research conducted among the employees, including those on managerial and executive positions, whose task was to hierarchize a list of 20 basic fields of their activity confirm this elaboration (Figure 4).

This implies that the representatives of insurance companies where the research was conducted still have a lot to do on the basic level of building appropriate relations with the society. In this context the emphasis which was put on honesty in running a business, visible in the ranking of expectations may be interpreted not only as an indicator of low awareness but also as some hierarchy of needs which insurance companies' representatives present (Przybytniowski, 2019)<sup>2</sup>. The results of the research concerning the evaluation of the insurers from

<sup>2</sup> See: Przybytniowski J.W., Jakość usług a wybór kanału świadczenia usług ubezpieczeniowych [in: Antczak St., Demjaniuk R., Marketingowe i logistyczne aspekty zarządzania przedsiębiorstwem, Uniwersytet Przyrodniczo-Humanistyczny w Siedlcach, Siedlce, 2011, p. 129 and the following.

the angle of their engagement in social activity confirm the thesis. According to the respondents insurance companies representatives do not fully undertake their basic tasks and it is difficult to expect something more from them, something which would result in building appropriate relations with the society. Over 80% of the respondents agree with the opinion that insurers do not treat social activities seriously as *“they more talk about it than they actually do”*. The prevailing view is that the main reasons why the insurance companies undertake such activities are the promotional aspects and the desire to build a positive image of a company in the clients’ eyes: respectively: 86% and 78% (Figure 5).

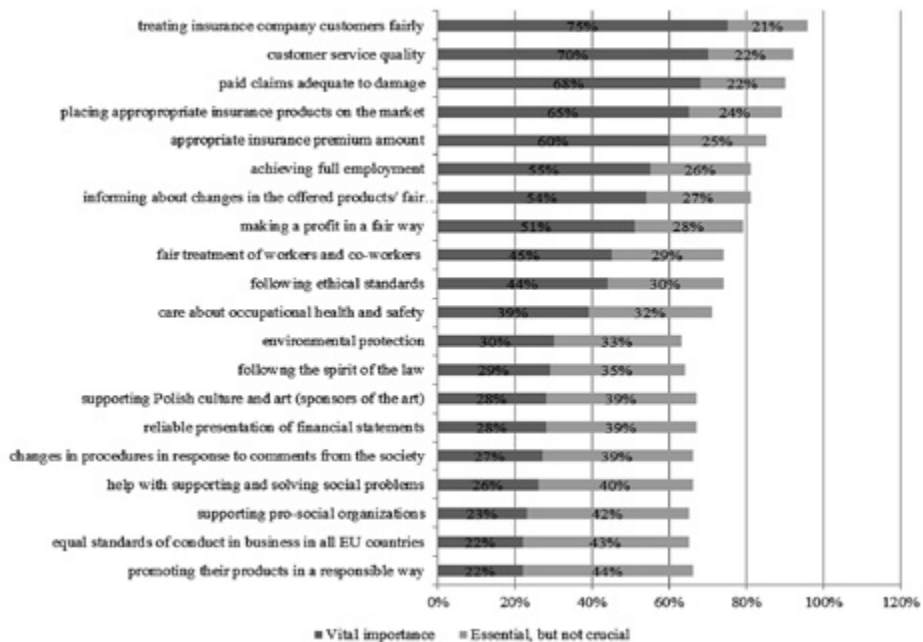


Figure 4: Scope of activity of insurance companies according to workers and insurance companies’ management is really relevant for the insurance company to be perceived as socially responsible

Source: Author’s own elaboration based on the conducted research.

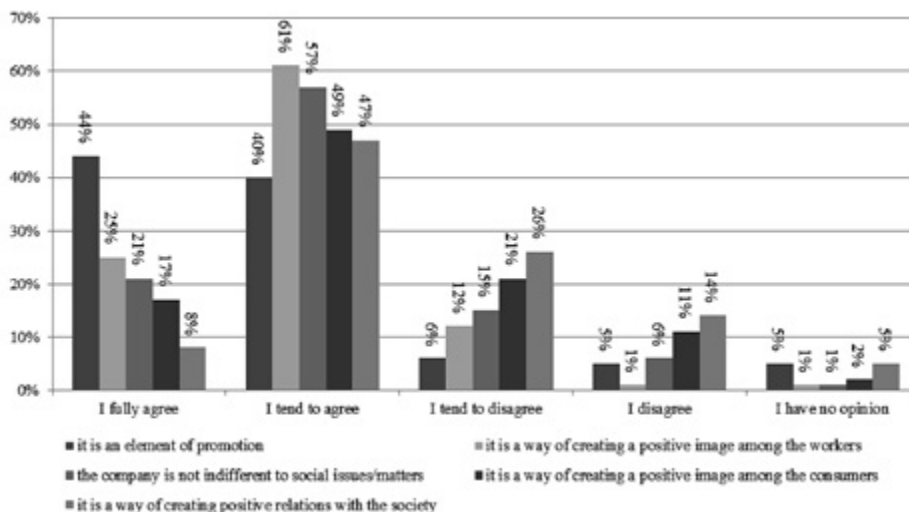


Figure 5: The evaluation of insurance companies' engagement in social activities

Source: author's own elaboration based on the conducted research.

## 6. Discussion

Thanks to the empirical research a study of knowledge about the respondents' awareness was created which will complete the methodology of research investigation. It is also a source of knowledge about insurance companies when it comes to socially responsible behaviours. Measurable benefits of the conducted research including the knowledge gained allowed to develop two author's own indicators of CSR research in the insurance sector, namely:

1. Customer service quality indicator ( $W_{jok}$ ). It is a universal indicator which allows to evaluate not only insurance companies workers' professionalism in both Sector I and II so knowledge, skills and experience but also to look at the employees' attitude to pro-social factors and respecting them. This indicator shows a fraction of customers satisfied with the quality of the provided insurance services.

$$W_{jok} = \frac{JP_s}{JO_{mx}} \times 100\% \quad (1)$$

where:

- $W_{jok}$  – customer service quality indicator;
- $JP_s$  – average grade of perceived quality;
- $JO_{mx}$  – maximum grade of expected quality.



2. Legitimacy of appeal connected with loss indemnification is another indicator ( $W_{zs}$ ). It represents the information gained from survey questionnaires and a collection of data connected with correctness of decisions issued by management staff of an insurance company concerning accepting or rejecting claims connected with loss indemnification:

$$W_{zs} = \frac{S_z}{S_{wo}} \times 100\% \quad (2)$$

where:

- $W_{zs}$  – legitimacy of appeal indicator;
- $S_z$  – legitimate appeals;
- $S_{wo}$  – all appeals issued.

This indicator shows what percentage of all claims issued is correctly formulated and legitimate. It may be used by all insurance companies in question as well as by the whole property insurance sector. Both indicators will be described in detail and used in order to verify them in empirical research presented in the following part of this data study.

Long-term survey study conducted in Poland among insurance companies Sector I and II as well as the attitude towards CSR during the COVID-19 pandemic based on the data from the Financial Ombudsman as submissions have been an inspiration to develop those indicators of property insurance service quality improvement.

During the research it has been established that drawing conclusions only on the basis of raw data gained from survey questionnaire and statistical data is an oversimplification and leads to one-sided assessment when we refer to only one important aspect of insurance companies' activity namely the level of quality of offered services including the attitude towards CSR. Taking into consideration the content of the survey questions which are coherent with clients' submissions and consequently the legitimacy of their content the use of the alternative method – the suggested indicators, is reasonable in this case which is reflected in the research results presented below.

The research was conducted between 2010–2020. Choosing 2010 as a starting point was justified by the change in the way data used by the Financial Ombudsman Service during the reporting periods was presented.

The total number of the complaints filed to Financial Ombudsman between 2010 and 31.10.2020 was 108 915, including 83 055 from Sector II which constitute 76,3% of all the claims filed. As at 31.12.2020 7% of the claims were related to COVID-19 pandemic (<https://rf.gov.pl/baza-wiedzy/analizy-i-raporty>).

Claims concerning business insurance, which were filed to the Financial Ombudsman between 2010 and 2020, regardless of the changes in their qualification, may be divided into five basic categories of dispute (Table 1), as to the amount of the awarding compensation or benefit, rejecting a claim by the insurance company, tardiness during loss indemnification, legal disputes and others.

It can be noticed that within the period considered the percentage of the claims filed to the Financial Ombudsman in the groups of significant share in the total number of the submissions filed is successively growing especially in the group connected with denying the claims or tardiness during loss indemnification and taking advantage of customers' ignorance of the law.

Table 1: Claims connected with property insurance issued to Financial Ombudsman between 2010–2020

Specification	2010	2013	2017	2020
	in %			
Rejecting the claim	23,5	29,6	29,7	28,9*
Dispute about the amount of the awarding compensation or benefit	31,0	27,7	25,7	24,3
Premiums, cost, return of premium, payment request, double insurance coverage, rejecting taking over the payment of contributions	4,1	7,3	5,7	4,5
Tardiness in loss indemnification	14,4	8,5	5,7	3,2
Procedures used by insurance companies	0,0	1,3	1,6	1,6
Refusal to cancel, reduce or pay penalties and recourse in instalments	0,9	1,1	1,4	1,6
Refusal of insight into loss files	0,0	1,2	1,3	0,7
Interpretation of insurance regulatory law	2,7	0,7	0,4	0,2
Other reasons for submissions	9,4	0,1	2,3	0,6
No apparent reason for the submission	0,5	0,5	0,2	0,3

Legend: 7% out of this number were the claims connected with COVID-19

Source: author's own elaboration based on (<https://rf.gov.pl/baza-wiedzy/analizy-i-raporty>).

Loss indemnification and payment of compensation connected with the interpretation of insurance regulatory law and especially refusal of payment compensation on account of COVID-19 infection, complications after illness and being in quarantine is a really sensitive stage while serving a customer. Customer service professionalism and its effect may influence clients' decision concerning renewal of the agreement or the lack of it in the insurance company (Figures 6 and 7).

A special attention should be drawn to the fact that the presented statistics may seem to be oversimplified and as a result leading to one-sided assessment, relating only to some, still very important aspect of insurance companies' activity. Therefore, guided by the content of the most frequent submission and an objective look to confirm the hypothesis formulated at the beginning in the

next research stage an alternative method of presenting the issue of insurance company service quality level has been established using the indicators of service quality measurement.

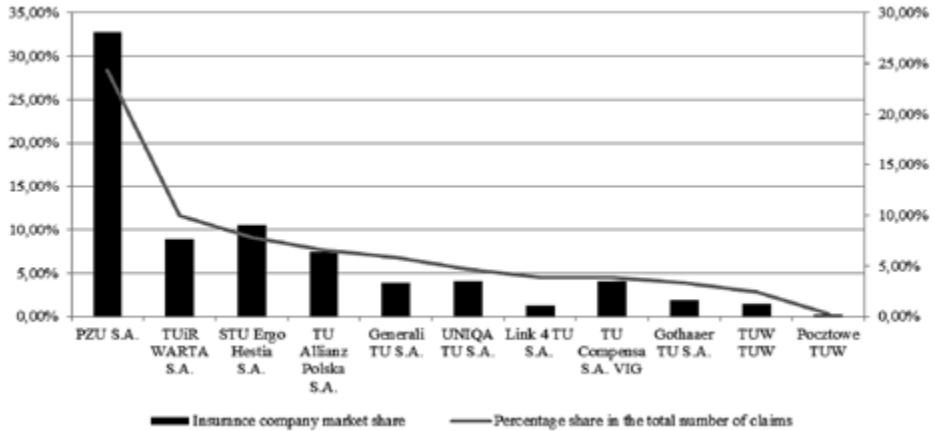


Figure 6: The percentage of the total number of claims in relation to the percentage share of chosen insurance companies\*\* (Sector II; as for 31.12.2020)

Legend: \* – Gothaer TU S.A. (previously PTU S.A.)

\*\* – Market share measured by gross premium written in Sector II

Source: Author's own elaboration based on (<https://rf.gov.pl/baza-wiedzy/analizy-i-raporty>).

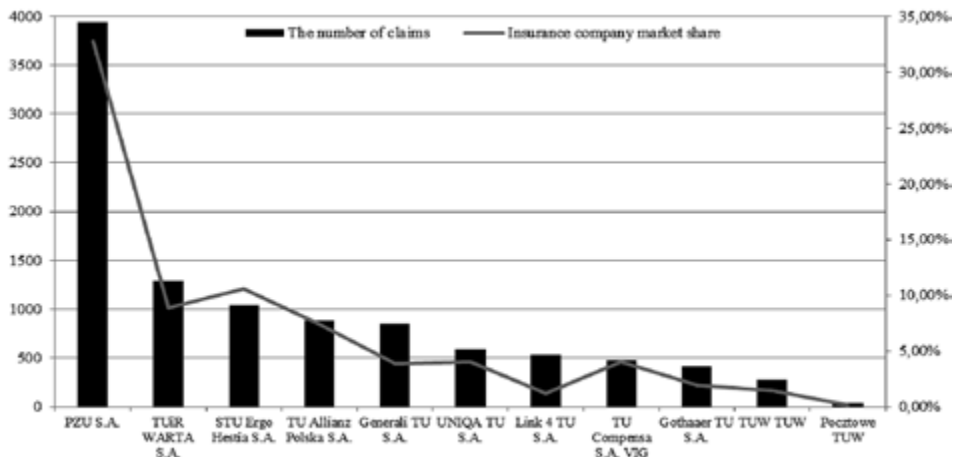


Figure 7: The percentage of the total number of claims in relation to individual insurance companies (Sector II; as for 31.12.2020).

Legend: \* – Gothaer TU S.A. (previously PTU S.A.)

Source: Author's own elaboration based on (<https://rf.gov.pl/baza-wiedzy/analizy-i-raporty>).

Using author's own indicators it has been proven that the lower the value of the presented data the higher the quality of the services provided by individual insurers. Therefore, the research results presented in figures 6 and 7 do not correspond to the results gained with the use of previously mentioned indicators (Table 2).

Table 2: Companies service quality improvement indicators in selected insurance companies Sector II between 2010–2017 (expressed in %)

Insurance Companies Sector II	2010				2013				2017				2020			
	The number of claims**	Insurance company market share	The number of claims structure	Submissions indicator	The number of claims	Insurance company market share	The number of claims structure	Submissions indicator	The number of claims	Insurance company market share	The number of claims structure	Submissions indicator	The number of claims	Insurance company market share	The number of claims structure	Submissions indicator
Link 4 TU S.A.	530	1,0	5,1	510,0	344	1,6	2,7	168,8	234	1,7	2,6	152,9	330	1,2	3,7	308,3
Generali TU S.A.	549	3,3	5,3	160,6	738	2,3	5,7	247,8	509	2,0	6,1	305,0	531	2,3	6,0	260,9
TUW TUW	189	1,2	1,8	150,0	95	1,8	2,4	133,3	190	1,8	2,7	150,0	233	1,0	2,6	260,0
UNIQA TU S.A.	474	3,8	4,6	121,1	665	3,1	5,2	167,7	242	2,7	2,9	107,4	468	2,1	5,3	252,4
Gothaer TU S.A.*	403	3,9	2,1	53,8	367	1,7	2,8	164,7	262	1,6	3,1	193,8	183	1,3	2,1	161,5
TU Compensa S.A. VIG	389	3,5	3,8	108,6	226	3,5	4,1	117,1	234	4,4	2,8	63,6	374	3,4	4,2	123,5
TU Allianz Polska S.A.	620	7,6	6,0	78,9	536	6,7	4,2	62,7	424	6,7	5,1	76,1	506	5,5	5,7	103,6
PZU S.A.	2142	34,9	20,7	59,3	3013	36,6	23,4	63,9	2241	36,5	26,7	73,2	2932	39,0	33,0	84,6
STU Ergo Hestia S.A.	878	10,4	8,5	81,7	885	11,1	6,9	62,2	781	14,4	9,3	64,6	890	13,2	10,0	75,8
TUW Pocztove	24	0,1	0,2	200,0	34	0,1	0,3	300,0	35	0,2	0,4	200,0	21	0,3	0,2	66,7
TUIR WARTA S.A.	1221	8,6	11,8	137,2	1469	13,9	11,4	82,0	844	13,8	10,1	73,2	797	15,9	9,0	56,6

Legend: \* Gothaer TU S.A. (previously PTU S.A.)

Source: author's own elaboration based on own research

These indicators measure the level of quality improvement not only from the quantitative point of view- the number of submissions issued to the Financial Ombudsman, but also from the qualitative point of view- namely, the changes in the particular insurance company in relation to CSR. The results received on the basis of author's own indicators unequivocally showed that insurers which have the highest number of submissions are not the ones which are perceived as the worst by the customers. These results are also reflected in the way insurance companies are perceived and their role in CSR with focus on COVID-19 pandemic.

Concluding the above mentioned considerations, it is a good idea to present author's own definition of insurance service quality and locate the process of providing services on the right place in the hierarchy of its importance for the client in the context of this definition also from the point of insurance contract restitution taking into consideration different aspects of CSR during and after COVID-19 pandemic. According to the author, *insurance service quality* may be defined as: *client's assessment connected with the overall perfection of the offered product or as an overall client's feelings connected with insurance company competitive position and its services for other insurers which is linked to constant quality improvement and results in a successful insurance company management.* Insurance service quality may also be defined as *a service provided by a property insurance company which aims at countering or liquidation of fortuitous events' negative consequences to those entities that those events threaten or as client's complex assessment of a particular insurance contract or the scope in which it fulfils his needs and expectations at the same time giving him the sense of satisfaction.* Thus, *insurance service is a product (e.g. insurance contract) which is offered by an insurance company representative.* Except that, *the insurance service quality evaluation should be considered through its characteristic factors while evaluating customers' satisfaction characteristics of the service in question should be taken into consideration* (cf. Oliver, 1997; Saling, Baharuddin & Achmad, 2016).

## 7. Conclusion

Concluding the considerations, it should be underlined that despite relatively low awareness of the issue of CSR during COVID-19 pandemic and its meaning among the respondents as well as low assessment of insurance companies' activity in this field some attitudes characteristic for the mature clients aware of the COVID-19 threats may be noticed. It is impossible to establish a positive image of the insurer in its environment (micro and macro) not respecting clients' rights. Tardiness, lack of unequivocal procedures, rejecting claims, understating the amount of compensation in loss indemnification, disregarding the client, lack of respect of his time can be decisive factors when it comes to the client's loyalty for an insurance company but first and foremost these may lead to creating a negative opinion in client's environment. It may be a major problem in the insurance company strive for creating an appropriate quality management system.

Thus, among the respondents there is a prevailing view that the starting point for pro-social activity is reliability in the realisation of companies' basic functions. On the other hand, building proper relations with the society and supporting various initiatives aimed at improving its functioning is an inevitable

condition for the insurer's market success in a longer period which should be reflected in the insurance contract restitution.

The clients of insurance companies in Poland expect to get a good quality insurance product as well as to be properly served in case of indemnifiable accident. In financial terms insurers will probably have to adjust their budgets and implementation plans, expectations concerning cash flows and investment portfolios regarding the recent changes during COVID-19 pandemic. What is more, it is expected that together with CSR development insurers will still serve as a shock absorber for the economy and the society *which confirms the hypothesis stated in the beginning* that the development of Polish market economy is tightly connected with the insurance market behaviour which builds its strategies considering corporate social responsibility activities, especially during the COVID-19 pandemic.

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# THE ANALYSIS OF THE DEPOSIT POLICY OF UKRAINIAN BANKS AND THE FORECAST OF INFLUENCING FACTORS ON IT IN THE CONTEXT OF THE COVID-2019

## 1. Introduction

Deposits play an important role in the functioning not only of the bank, but also of the economy as a whole. With the help of accumulated funds from legal entities and individuals, banks form their resource base, which is later sent to the real sector of the economy through credit and investment operations. Due to this, the country's economy receives additional resources for growth and development.

A feature of deposits is their sensitivity to various environmental factors. Political crises, fluctuations in the national currency, instability in financial markets – these and other factors can collapse the country's banking system within a few days. A striking example of such destabilization in the market was 2008, when as a result of the rapid devaluation of the hryvnia, the National Bank of Ukraine introduced a moratorium on withdrawals from deposit accounts as a forced tool to stabilize the market situation. Even without such extreme measures, fluctuations in the deposit market are a negative phenomenon and usually take many months to recover from pre-crisis levels.

## 2. Literature review

Deposit policy of Ukrainian banks has been the subject of research by many domestic scholars (Matvienko, 2018; Pickle, 2018; Volokhata, 2013). In

their works, they considered the deposit market in Ukraine, as well as the impact of factors on the formation of deposit resources of the bank. Their research showed a steady increase in banks' deposit resources, lower interest rates in the market, and a decrease in the share of foreign currency deposits over the past three years. In addition, the above scientists have quite positively predicted the future market situation. Along with this, the analysis of Ukraine's deposit policy in the conditions of a pandemic needs a thorough study.

However, in early 2020, Ukraine, like other countries, faced a completely unexpected challenge – the COVID-2019 pandemic. The instability of the first weeks had a negative impact on global financial markets. Banking institutions have long been in a state of turbulence and waiting for a rapid outflow of funds from deposit accounts. Given the new operating conditions, there is a need for new research that would take this into account.

The analysis of foreign research shows an interesting paradox – the volume of deposits increased in most countries, despite the instability due to the pandemic. In particular, the authors of the work (Levine Ross, Chen, Mingzhu, Wensi, 2020), studying the weekly fluctuations of deposits in the US banking market, noted an increase in the number of funds raised by banks. According to Levine Ross L., Chen L., Mingzhu T., Wensi X., in contrast to the US stock market with sharp fluctuations, deposits in times of instability proved to be a safer tool for saving. Using weekly branch-level data on interest rates and county-level data on COVID-19 cases, they discovered that interest rates at bank branches in counties with higher COVID-19 infection rates fell by more than rates at other branches—even branches of the same bank in different counties. When differentiating weeks by the degree of stock market distress and counties by the likely impact of COVID-19 cases on economic anxiety, the evidence suggested that the deposit inflows were triggered by a surge in the supply of precautionary savings.

The authors of other works (Carletti , Claessens, Fatás, Vives, 2020; Perkins, Labonte, Gnanarajah, Scott, 2020) in assessing the impact of the pandemic on the banking market, see the greatest risks in lending due to the deterioration of the solvency of the population, while forecasts for the deposit market remain stable.

That is why the study of the impact of the pandemic, as a destabilizing factor, on the deposit market in Ukraine is becoming especially relevant. In addition, it is important to forecast further development of events in the domestic deposit market with the development of potential scenarios for the development of the situation with the Covid-2019 pandemic.

### **3. Results of research**

From 2017 the deposit market started to show signs of recovery after the Revolution of Dignity and war on the East of Ukraine, and the volume of

attracted deposits this year for the first time in recent years have shown growth that is still preserved. Thus, the general dynamics of the deposit portfolio of Ukrainian banks in 2017 – 2020, according to the NBU, is given in table 1.

According to Table. 1 we see that during the analyzed period the total amount of deposits in the banking system of Ukraine tends to increase – from 898 844 mln UAH. at the end of 2017 to 1 348 130 mln. UAH at the end 2020 (an increase of 449 286 mln UAH or 33.33%). This pattern was caused mainly by the growth of depositors' confidence in the banking system and the gradual recovery of the economy as a whole.

Table 1: The structure of deposits of individuals and legal entities in 2017 – 2020

Indexes	31.12.2017		31.12.2018		31.12.2019		31.12.2020	
	UAH mln	%	UAH mln	%	UAH mln	%	UAH mln	%
Funds of individuals	495 313	55,1	530 250	56,83	576 126	53,76	730 317	54,18
Funds of legal entities	403 531	44,89	402 717	43,16	495 540	46,24	617 813	45,82
Total deposits	898 844	100	932 967	100	1 071 666	100	1 348 130	100

Source: Review of the banking sector in 2020

If we analyze the structure of deposits, we see the predominance of funds of individuals throughout the period, so, at the end of 2017 they amounted to 495 313 mln UAH, and at the end 2020 – 730 317 mln UAH (increase of 235 004 mln UAH or 47,44%). As for the funds of legal entities, their trend is also quite positive, they increased by 214 282 mln UAH or 34.68% (Table 1). We can also note a trend towards an increase in the share of funds of legal entities in the overall structure of deposits.

During the analyzed period, when considering the structure of funds of individuals, we are seeing a sharp increase in the share of deposits on demand. At the end of 2017, their amount was 329 335 mln UAH. (66.5%), while at the end of 2020 -351 318 mln UAH (48.1 %) (Figure 1). The increase in 18,4% can be explained by growing uncertainty and fear of long-term investments in conditions of Covid-2019. Households invest in bank deposits as one of the most affordable investment instruments in Ukraine but do not risk doing so in the long run.

If we analyze the deposits of banking institutions in terms of types of currencies, we can see a decrease in the growth of foreign currency deposits against the background of an increase in the national currency (Table 2).

According to Table 2, foreign currency deposits increased from 407 872 mln UAH at the end of 2017 to 507941 mln UAH at the end 2020 or just by 19.7%. So in the total client portfolio, their share declined from

45.4% to 37.68%. We can explain this situation by low-interest rates on foreign currency deposits, which have decreased significantly in recent years. Also the strengthening of the hryvnia and the reduction of inflation contributed to the fact that depositors – individuals and legal entities preferred deposits in the national currency (Table 2).

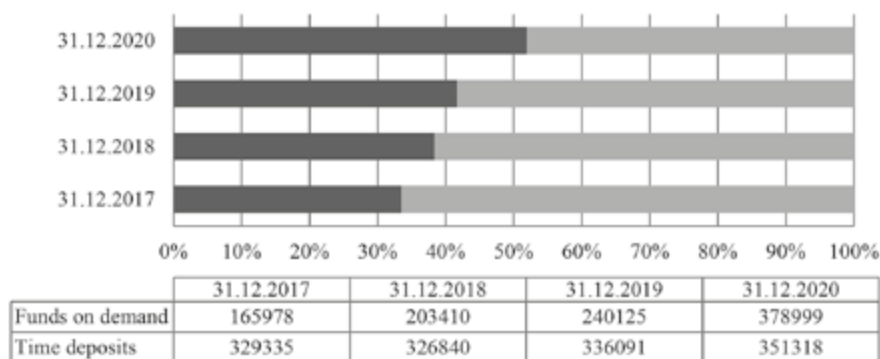


Figure 1: Dynamics of the structure of deposits of individuals by maturity in 2017–2020

Source: Review of the banking sector in 2020

Table 2: The volume of deposits attracted to residents' accounts by types of currencies in 2017–2020

Indexes	31.12.2017	31.12.2018	31.12.2019	31.12.2020	Deviation of 2020 to 2017 (+/-)
	UAH mln	UAH mln	UAH mln	UAH mln	UAH mln
Total deposits	898 843	932 967	1 071 666	1 348 130	+ 449 287
• in national currency	490 971	540 683	642 711	840 189	+ 349 218
• in foreign currency	407 872	392 284	428 955	507 941	+ 100 069

Source: Review of the banking sector in 2020

Regarding interest rates on deposits, we observed their gradual decline, this situation is primarily due to a decrease in the NBU discount rate, which is one of the monetary instruments, the key rate speech benchmark attracted and allocated funds to banks and other sub , objects of the monetary market (Figure 2).

As can be seen from Figure 2, at the beginning of 2017 the discount rate of the National Bank of Ukraine was at the level of 14%, but in 2020 its value decreased and at the end of 2020 amounted to 6% per annum. This caused a sharp decline in interest rates on deposits during 2019–2020. And at the end of the 2020 year the average interest rates on deposits in foreign currency was just 1,4%, and in the national currency – 8,7% (Figure 2).

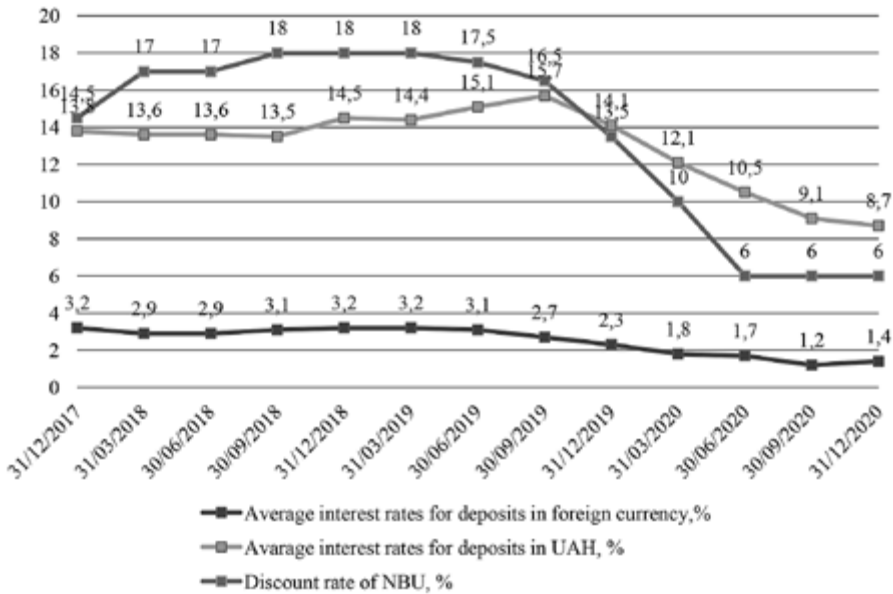


Figure 2: NBU discount rate and cost of new deposits in hryvnias in 2017– 2020, % per annum  
 Source: Review of the banking sector in 2020

The analysis of interest rates by banks by country of origin shows that in the national currency the highest rates on deposits for 1, 3, 6 and 12 months are observed among Ukrainian banks – JSC CB „PrivatBank „, JSC „Oschadbank“, JSC „FUIB“, JSB “UKRGASBANK”, JSC “Ukreximbank”, JSC “BANK CREDIT DNIPRO”, JSC “TASKOMBANK”, regarding rates for a period of 18 months, banks with Russian capital (JSC “ALFA-BANK” and JSC “SBERBANCHI”) positions – 9% per annum, the lowest rate among European banks (JSC „UKRSIBBANK“, JSC „Raiffeisen Bank Aval“, JSC „OTP Bank“, JSC „CREDIT AGRICOLE BANK“) – 5% per annum.

As for interest rates on deposits in US dollars, there is a similar situation as on rates in national currency, at rates of 1, 3, 6 and 12 months the leaders are the rates of Ukrainian banks, for 18 months – Russian. European, at the same time, remain the lowest (Figure 4).

Examining the price offers of deposits among large banks, we can say that hryvnia deposits per year can still earn 9–10% per annum, foreign currency, in particular in US dollars – 2.25%, and in euros – 1.75%. But financial institutions continue to reduce the yield on deposits.

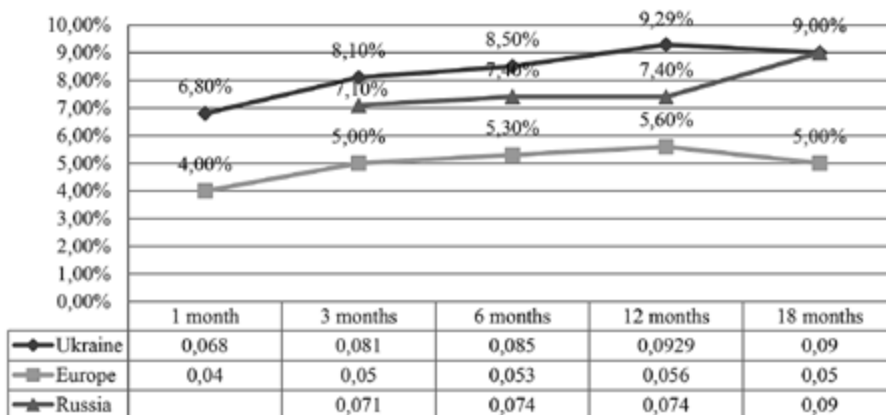


Figure 3: Average rates in banks by country of origin at the end of 2020, UAH

Source: Made by authors according to data from Review of the banking sector in 2020, Official web-site of the NBU, Official web-site of Oschadbank JSC

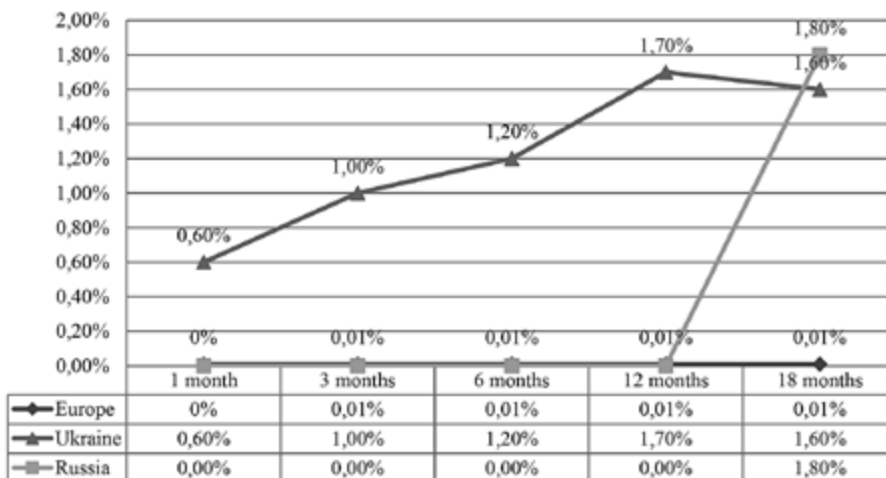


Figure 4: Average rates in banks by country of origin at the end of 2020, US dollar

Source: Made by authors according to data from Review of the banking sector in 2020

The situation with interest rates for deposits in euros is different, during all terms of deposits, Ukrainian rates are the most competitive, while the rates of foreign banks are at the same level and quite low (Figure 5).

Thus, the main markets for banking services are in a relatively stable state. Despite changes in the NBU leadership, the flow of negative information on COVID-19, falling incomes in the real sector of the economy and the devaluation of the exchange rate since the beginning of the year by almost 18% balances

since the beginning of 2020 increased for both individuals and legal entities. The explanation for this can only be effectively organized deposit activities, which can be a significant factor in the reliability, financial stability and a prerequisite for achieving solvency and liquidity of banking institutions operating in Ukraine.

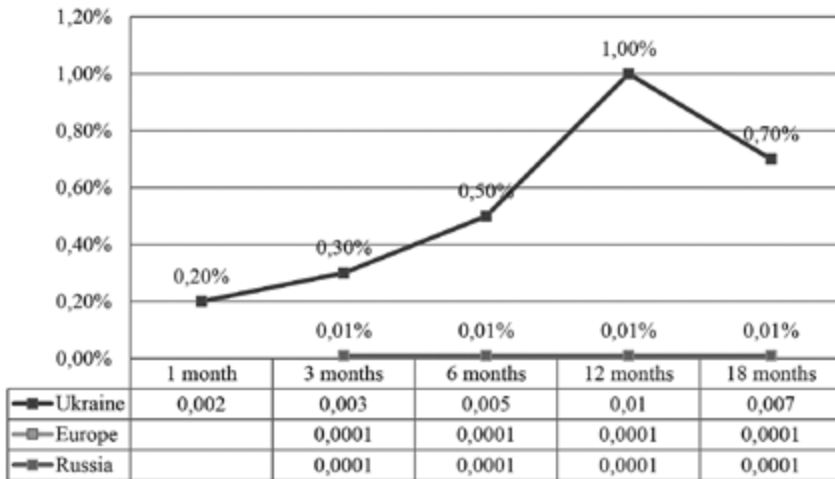


Figure 5: Average rates in banks by country of origin at the end of 2020, euro

Source: Made by authors according to data from Review of the banking sector in 2020, Official web-site of the NBU, Official web-site of Oschadbank JSC

Due to this volatile situation due to the COVID-19 pandemic, it is difficult to predict banks' deposit policies for the next three years. If the situation remains stable, deposit activities will be at about the same level as in 2019–2020. However, there is the assumption that with mass vaccination, the incidence rate will be much lower, and this, in turn, will lead to the activation of entrepreneurial activity, recovery, and efficient operation of all spheres of life, including banking. It is worth noting that the growth of deposits is influenced by many factors, which can be divided into direct and indirect. Direct factors may be the image policy and own activities of banks. Mediated factors are those that affect the outside and not Stand, related to banking. Among them we can highlight the following most important:

1. Wage level
2. Unemployment rate
3. The level of GDP

When constructing the forecast, two opposite scenarios are used (Table 3).

Table 3: Alternative forecast scenarios

Scripts	Feature / Difference	Probability truth	Expert assessment*
OPTIMISTIC	Fast overcoming the spread coronavirus infection COVID-19 thanks to activities that are active used by government. Experience, acquired for a period of struggle with pandemic, and qualitative reassessment system values significantly impact on economic relations and distribution cash flows	Unlikely	about 10% of surveyed experts believe, that there is no risk of the emergence of other waves of pandemic COVID-19 in the world in 2020-2021 years
CRISIS	Deployment of other waves of propagation coronavirus infection COVID-19 (including the introduction of quarantine measures during 2021) and as a consequence of a moderate recovery of the world economy or even a global financial and economic crisis, which is warned by a number of international and domestic experts. Deterioration of the dynamics of the domestic economy, due to the high dependence of Ukraine on external economic conditions. In general, economic development will be characterized by a decline foreign economic and production activities of the main types of industry, narrowing of the domestic market of financial services, accelerated inflation and devaluation processes, deterioration of the purchasing power of the population and low investment activity in the country.	Significantly probability (50% or more)	about 60% of experts surveyed believe that in 2021 the probability of realizing the risk of other waves of the COVID-19 pandemic in the world is high, and in 2022 year, about a quarter of experts believe high the probability of realization of this risk.

\* Evaluation of the implementation of external risks “The emergence of other waves of pandemic COVID-19 in the world,” according to the survey, which was conducted Ministry of Economy as part of the consensus forecast “Impact COVID-19 on the economy and society - postpandemichnyy development.” In 2022 and 2023, the probability of realization and the impact of this risk on the country’s economy was assessed by experts as unlikely.

Source: Forecast of economic and social development of Ukraine for 2021–2023

According to the optimistic scenario, the economy is expected to accelerate from 2021, which will exceed the level of development in 2019 by 11 percent at the end of 2023 (8.7 percent in the baseline scenario). On average for the period 2021–2023, GDP growth is projected at 5.2 percent annually, accelerating growth to 5.6 percent in 2023 (in the baseline scenario, an average of 4.5 percent, taking into account GDP growth of 4.7 percent in 2023). The banking system will be more involved in financing the development of the real sector of the economy.

The alternative crisis scenario is based on assumptions about the deployment of other waves of coronavirus infection (including during 2021–2022, when it is possible to resume the need for quarantine measures in the country), and, as a consequence, the global economy enters a protracted recession. Given the significant export orientation of Ukraine’s economy, low demand and prices on world markets will cause a slowdown compared to the baseline scenario of growth in exports of goods and services (up to 1.9 percent in 2021–2023 on average over the period against 5.8 percent on the base scenario) with a slowdown in import



growth (up to 2.2 percent vs. 10.6 percent, respectively). Under this scenario, GDP is projected to fall by 4–5 percent in 2021, followed by moderate growth on average over the period 2022–2023 at 1.8 percent annually (in the baseline scenario by 4.5 percent, respectively).

Taking into account the above scenarios, we offer a realistic scenario for the development of the economy and the banking system. Vaccination, which has already begun actively abroad and is just beginning to gain momentum in Ukraine, will gradually reduce the incidence and reduce various restrictions within countries. This will contribute to the development of entrepreneurship, reduce unemployment, increase tourism, increase labor mobility, and increase wages. In this scenario, we can predict improvements in three key indicators that affect the growth of deposits, namely: the level of wages, unemployment, and GDP (Table 4).

Table 4: Forecast of factors influencing deposit growth

№ s/n	Impact factor (indicator)	Years				
		2019	2020	2021	2022	2023
		Report	Report	forecast	Forecast	Forecast
1	Nominal GDP, UAH billion	3974.6	3984	4505.9	5089.4	5689.7
2	GDP is real, in% to the previous year	103.2	101.07	104.6	104.3	104.7
3	Average monthly salary, UAH	10497	13320	14632	15414	17169
4	Unemployment rate of the population aged 15–70 according to the methodology of the International Labor Organization	8.2	10.9	9.2	8.5	8.0

Source: Forecast of economic and social development of Ukraine for 2021–2023

However, the potential risks of a non-economic nature that may arise and worsen the situation over the next three years should not be eliminated. In particular, the parliamentary crisis, which is predicted by many political scientists due to the lack of a coalition, the escalation of the military conflict in eastern Ukraine, the presidential election in 2024. In the history of modern Ukraine, there are many cases when political factors led to instability in the banking market. It is also possible to rule out the possibility of new pandemics or new strains of coronavirus infection. These factors, both together and individually, may not allow the implementation of the optimistic scenario. That is why a realistic scenario for the development of Ukraine's economy and the banking sector is the most likely. The realistic scenario will assume positive dynamics in the growth of basic economic indicators, which will affect the growth of deposit resources in banks while taking into account potential non-economic risks that may destabilize the situation.

As you can see, almost all indicators are improving, and this, in turn, will affect the growth of deposits. Thus, lower unemployment indicates employment, wage growth leads to savings in the population, which can be placed at interest on a deposit account in the bank, and an increase in the structure and dynamics of GDP indicates an improvement in the overall economic situation.

#### 4. Conclusion

The Covid-2019 pandemic has been an unexpected challenge for the economies of many countries. In order to avoid the rapid spread of the disease, the governments of most countries imposed quarantine, forcibly closed borders imposed restrictions on the movement of the population, and so on. Obviously, this provoked instability in financial markets, sharp fluctuations in national exchange rates and worsened the economic expectations of the population.

In the scientific article, the authors conducted a study of the deposit policy of Ukrainian banks in this economic instability, which was provoked by the Covid-2019 pandemic. Based on statistical data, the structure of deposits of legal entities and individuals, the dynamics of interest rates, the regional distribution of deposits, as well as identifying the leading banks to raise funds. The authors obtained unexpected conclusions about the lack of significant impact of the pandemic on the deposit market. Despite all the negative forecasts, there was no significant outflow of deposits in Ukraine, rather the opposite – banks were able to increase the number of funds raised from individuals and legal entities. However, the negative expectations of the population affected the structure of the deposit resources, in particular, in the analyzed period the share of demand deposits and short-term deposits increased significantly.

Based on the analysis of experts' opinions, as well as the forecast of the main economic indicators that have an impact on the deposit market, three scenarios for further development of Ukraine's economy and the banking sector was developed and substantiated – optimistic, critical and realistic. According to the authors, the most reasonable in the circumstances can be a realistic scenario that would provide positive momentum in the growth of basic economic indicators that influence the growth of deposit resources in banks at the same time take into account the potential risks of non-economic nature that could destabilize the situation. Also for the development of deposit activities, it is important to improve the risk management system and develop an effective model to minimize their impact, increase confidence in banking institutions, and conduct quality marketing policy of banks.

The findings can be applied in developing strategies for the development of individual banks and the banking system as a whole.

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# **MECHANISMS OF THE IMPACT OF COVID-19 PANDEMIC ON THE FINANCIAL STANDING OF POLISH ENTERPRISES<sup>1</sup>**

## **1. Introduction**

A crisis is an unplanned process which includes a sequence of phenomena taking place over a specific period of time, disturbing the dynamic balance between the enterprise and its environment, as well as its existence. Inevitable occurrence of crisis situations in contemporary organisations gives rise to the need of their early detection, identification and skilful overcoming. The causes of crises may have their source in the abnormal course of economic processes or result from the impact of non-economic factors. The global economic crisis at the turn of the first and second decade of the 21st century was a consequence of typically economic factors. The pandemic crisis related to the emergence and rapid spread of the COVID-19 coronavirus is an unprecedented example of the impact of non-economic factors which have had a huge impact on the functioning of the global economic and social system.

The aim of this chapter is to present the mechanisms of the impact of the COVID-19 pandemic on the global economic system with the exemplification of the influence of this pandemic on the financial standing of Polish enterprises. For this purpose, as the object of an empirical analysis, two enterprises were chosen: Rainbow Tours Capital Group and Mercator Medical Capital Group. In the case of the first of them, the company operating in the tourism sector, the COVID-19 pandemic is an unprecedented threat for conducting activity and surviving on the market. For the other mentioned enterprise, operating in

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the personal protective equipment, medical gloves and disinfectants sector, the pandemic has contributed to a sharp increase in the scale of the activities and its financial results.

## **2. The sources and the course of the COVID-19 pandemic**

Epidemics of infectious diseases have plagued societies since the dawn of time and are among the leading causes of human deaths worldwide, accounting for between a quarter and a third of all mortality. An acute respiratory disease COVID-19 is caused by a new coronavirus, SARS-CoV-2. The contemporary coronavirus SARS-CoV-2 owes its name to the similarity of its structure to coronaviruses associated with acute and severe respiratory distress syndrome (Czech et al., 2020). A lot of researchers believe that COVID-19 is 3 to 30 times more deadly than seasonal influenza and at least 10 times more infectious than SARS acute severe respiratory distress syndrome (Loayza & Pennings, 2020; Wilder-Smith, Chiew & Lee, 2020; Wilson et al., 2020). Based on the results of SARS-CoV-2 genome sequencing, as well as evolutionary analysis, it is indicated that bats are the natural host of the virus and that SARS-CoV-2 has the potential to transmit from bats via unknown intermediate hosts to humans. The scientific research carried out rejects the hypothesis of the emergence of the current coronavirus pandemic as a result of a recombination event (Czech et al., 2020).

According to the data from the World Health Organisation (WHO), the emergence of the SARS-CoV-2 coronavirus globally can be linked to the identification in December 2019 of this virus in the Chinese city of Wuhan (the capital of Hubei province) with the population of 11 million people (Męcina & Potocki, 2020). The COVID-19 outbreak in China was widely observed and commented on by governments, researchers and the public. A rapid increase in positively diagnosed cases and the subsequent rise in secondary outbreaks in many countries around the world heightened concerns about the international scale. As a result, the WHO declared the COVID-19 outbreak an international public health concern on 31 January 2020 and subsequently classified it as a pandemic on 11 March 2020. According to the WHO data, the COVID-19 is the fifth pandemic in the last 20 years and the ninth since the beginning of the 20th century (Czech et al., 2020).

## **3. An influence of the pandemic on the functioning of the global economy**

The COVID-19 pandemic is defined by economists as a phenomenon of a huge *black swan*, which is characterised by the fact that it is unexpected

and when it finally occurs, it exerts an enormous impact on economy and social life (Szczepeński, 2020). The coronavirus pandemic is also comparable to the economic situation during the World War Two (Gossling et al., 2020). Unprecedented global restrictions in travelling, the implementation of “stay at home” policy and bans on public gatherings have affected about 90% of the world population, in consequence contributing to limiting social mobility to an unprecedented scale (Gossling et al., 2020).

The coronavirus pandemic negatively affects all sectors of economy. The industries most exposed to the consequences of the COVID-19 are: tourism, transport, mainly international one, catering and restaurants, culture, education, entertainment and hotels. These are both industries directly dependent on the flow of people and goods over large distances and these whose activity is related to the simultaneous gathering of a bigger number of consumers in one place (Szukalski, 2020). It is predicted that the employees of the “white collars” segment, that is specialising in providing professional services and office works, will be affected by a short-term threat. They are people who deal with the organisation of mass events, advertising, marketing, consultancy, communication and auditing. The demand for their services will diminish as firms cutting down their budgets will resign from their services in the first months or even years after the pandemic is over (Chruścińska-Dragan, 2020). During the global quarantine digitalisation, e-commerce and related courier firms, the gaming sector, Internet pharmacies and insurances have developed. Also producers of masks, disposable gloves and cleaning agents have gained (Szukalski, 2020).

The COVID-19 global pandemic is believed to be one of the most important and most dangerous economic and social events for decades. The recession caused by the COVID-19 has been the first one since 1870 which was brought about by a pandemic only (Kaczmarek, 2021). The COVID-19 pandemic is an example of a supply shock exogenous in regard to the economic system, arising from a change in the characteristics of the impacts between the anthroposphere and nature. Since January 2020 it has started to affect negatively individual regional segments of the world economy, starting from China where in the period from the beginning of January to the end of February 2020 5 million people lost their jobs (Męcina & Potocki, 2020). According to J. Bullard, the head of Federal Reserve Bank in St. Louis, one of the banks of the Federal Reserve System, in consequence of the pandemic, as many as up to 47 million of Americans may lose jobs, and the unemployment rate may rise to 32.0% (Bullard, 2020).

Most of governments worldwide closed educational institutions, thus trying to stop the development of the COVID-19 pandemic. According to UNESCO data, educational centres were closed in 165 countries, which affected over a billion

students worldwide (<https://en.unesco.org>). The education process switched from traditional channels to channels based on new technologies (radio, television, the Internet), yet there are lots of pupils that could not be reached. According to the UN Secretary-General, the most affected group were disabled students, members of minorities, refugees and displaced persons (<https://300gospodarka.pl>).

As a result of the coronavirus pandemic, the professional life of employees has changed. A number of enterprises and public institutions were forced to introduce fully remote or hybrid work. It turned out that the model proves itself and even contributes to the improvement of the effectiveness of work (Szukalski, 2020).

At the beginning of 2020, the development of the coronavirus pandemic brought about an increase in the volatility of share prices all over the world, a drop in the real GDP, and a decline in nominal interest rates (Czech et al., 2020). The crisis related to the pandemic also caused a drop in economic activity worldwide and resulted in the occurrence of new threats for financial stability (Boot et al., 2020). As a result of the occurrence of the coronavirus pandemic global financial markets reacted to changes very strongly, and the values of individual stock market indices plummeted (McKibbin & Fernando, 2020).

Sumner et al (2020) believe that the COVID-19 will cause the first global increase in poverty since 1990. Therefore, the current pandemic is a real threat for the sustainable development goal established by the UN in struggle with poverty which was supposed to be implemented till 2030. A lot of researchers indicate that a consequence of the pandemic may be an acute and deep economic crisis all over the world. It is connected with the occurrence of global supply chains, which favours the development of the phenomenon of so-called becoming infected with a crisis and in consequence exposes economies to the risk going beyond their territorial borders (Męcina & Potocki, 2020).

The COVID-19 pandemic has severely hit international trade in the supply and demand aspect. Since World War Two the value of the world trade dropped only a few times. Until the occurrence of the coronavirus pandemic trade suffered most during the last global financial crisis which brought about so-called great collapse of trade (Męcina & Potocki, 2020).

According to Eichenbaum, Rebelo and Trabandt (2020), the introduction of the policy of limiting the coronavirus pandemic spread contributes to the rise of the depth of recession and fiscal instability, still enabling to implement the superior goal, namely saving human lives. Likewise, Jones et al (2020) point to the fact that reactions of governments to the occurrence of the pandemic show tensions and the search for balance between economic and health-related goals. The measures which help slow down the spread of SARS-CoV-2 affect the deepening of the economic slowdown (Męcina & Potocki, 2020).



The COVID-19 pandemic may lead to the growth of mortality rate directly as well as indirectly as a result of the worsening of the economic and social situation worldwide (Męcina & Potocki, 2020). The coronavirus pandemic has a destruction potential for both individual households, enterprises, sectors, and the whole national economies, therefore it may cause havoc in the world economy to the scale unprecedented since the times of Great Depression of 1929–1933 (Laing, 2020).

## **4. The influence of the pandemic on the financial standing of Polish enterprises**

### **4.1. Objects of empirical research**

One of the economic sectors most affected by the crisis caused by the COVID-19 pandemic is tourism. The introduction of social distancing and sanitation regime restrictions immediately brought the tourism industry to a complete standstill. There are two key factors influencing this, firstly, during a period of heightened economic uncertainty the demand for tourism services falls. Secondly, all kinds of administrative restrictions were imposed on potential tourists, restricting their movements. Flights and other types of domestic and international travel were suspended. Due to the declaration of an epidemic emergency in Poland in mid-March 2020, the activities of accommodation facilities and short-stay accommodation, as well as spa treatment activities were restricted (Stojczew, 2021).

Tourism economy constitutes about 10% of the global product and over 9% of share in the world labour market ([www.unwto.org](http://www.unwto.org)). In Poland the level of broadly understood tourism economy in the GDP structure is estimated to about 6% (Panasiuk, 2020). According to the forecasts of the United Nations World Tourism Organisation since April 2020 there will be a decline in the number of tourists by about 60–80% in the whole 2020. Already in the first quarter 2020, tourism movement was lower by 22% in comparison with the analogous period of the previous year. The estimates assumed that the number of tourists in 2020 will drop by almost 1 billion and at least 100 million people will face the threat of the loss of job in tourism industry (Widomski, 2020).

Therefore, in order to study the impact of the coronavirus pandemic on the financial standing of Polish enterprises, a company from the tourism sector was selected – Rainbow Tours Capital Group. This group is an example of an entity strongly affected by the negative effects of the COVID-19 pandemic.

A crisis and a crisis situation are associated with financial losses and a difficult period for business activity. However, a crisis can be an opportunity for some entities to grow and achieve success. One of the sectors positively affected

by the crisis caused by the COVID-19 pandemic is the medical sector in the broad sense, and more specifically the personal protective equipment, medical gloves and disinfectants sectors.

Medical gloves and protective materials have become a scarce commodity during the pandemic. Hence, manufacturers and distributors of these products generate very high turnover during the current crisis (<https://healthcaremarketexperts.com>). At the beginning of the pandemic, an increased demand for PPE was influenced by the climate of panic intensified by the media. This resulted in people stocking up and buying mass quantities of hygiene and personal protective equipment – masks, disposable gloves (<https://startup.pfr.pl>).

A Polish company that experienced record growth in its operations during the pandemic is Mercator Medical Capital Group. Therefore, the financial standing of this Group will be analysed as an example of an entity which experienced positive effects of the crisis caused by the coronavirus pandemic.

Mercator Medical Capital Group, whose parent company is Mercator Medical S.A., is a manufacturer of medical gloves and a distributor of medical disposable materials. For nearly 30 years it has been operating in Poland, Central-Eastern Europe and Russia, with products available worldwide. As a manufacturer, it sells to nearly 70 countries worldwide; as a distributor, it operates on the markets of Europe and Russia. The entity is one of the most important players in Poland as well as internationally, conducting systematic geographical expansion on the market of disposable products (<https://pl.mercatormedical.eu>). The most important subsidiaries of Mercator Medical Group operate in the following countries: Poland, Romania, Germany, Thailand, Czech Republic, Ukraine, Russia, Italy, Hungary.

#### **4.2. A comparative analysis of the financial standing of the studied enterprises in the years 2019–2020**

The first effects of the COVID-19 pandemic, both negative and positive ones, were noticeable right after its occurrence, namely in December 2019, and their scale was growing along with the development of the pandemic. In this place of the work a comparative analysis of the financial standings of the studied Groups in the years 2019–2020 was conducted. In the first part of the analysis the formation of basic, quarterly financial data of the studied enterprises was presented. In the second part changes in the values of selected financial ratios, namely liquidity, profitability, debt and market value are presented. Table 1 includes the basic, quarterly financial data of Rainbow Tours Group in the years 2019–2020.

During the coronavirus pandemic, Rainbow Tours Capital Group marked worse financial values than in the pre-pandemic time. The total assets and equity value diminished and the debt of the Group rose.

Table 1: The basic quarterly financial data of Rainbow Tours Capital Group during the period of 2019–2020 (in thousands PLN)

Financial data	Q4/2019	Q1/2020	Q2/2020	Q3/2020	Q4/2020
Total Assets	507 288	541 311	533 546	510 364	474 833
Equity	128 686	135 680	117 435	118 980	92 809
Total Liabilities	378 602	405 631	416 111	391 384	382 024
Current Liabilities	277 980	271 291	313 735	243 324	269 792
Long-term Liabilities	100 622	134 340	102 376	148 060	112 232
Net Sales	267 540	246 019	7 405	137 141	16 093
Net Profit/Loss	-19 960	800	-15 723	661	-27 946

Source: Own study based on: (<https://www.biznesradar.pl>, [access: 12.05.2021]).

Rainbow Tours Capital Group marked considerable changes in net sales. When comparing the second quarter of 2019 and 2020 sales revenues dropped by more than 56 times. In the third quarter almost sixfold decline was marked, and in the fourth quarter net sales were more than 16 times lower than in the same period a year before.

The financial result of the Group also marked dramatic declines. In the second quarter 2019 the entity generated profit, and exactly a year later it marked a loss of almost PLN 16,000. In the third quarter 2020 the Group's profit decreased in comparison with the third quarter 2019 by over PLN 43,000 thousand.

The values of the selected financial ratios of Rainbow Tours Capital Group during the coronavirus pandemic are presented in Table 2.

During the pandemic period, Rainbow Tours Group recorded declines in its liquidity ratios. The worst values were recorded in the second and fourth quarter of 2020, at that time the Group was unable to cover its short-term liabilities with current assets. Profitability ratios marked decreasing values from quarter to quarter, and they were negative in the third and fourth quarter 2020. The entity did not generate a profit on contributed capital and assets. The Group's debt also increased, with equity remaining most indebted. During the COVID-19 pandemic, Rainbow Tours Group was heavily indebted. Consequently, it experienced dynamic declines in its market value on the stock market.

The financial results of the other examined company in the analysed period were different. Table 3 shows the basic quarterly financial data of Mercator Medical Capital Group during the period of 2019–2020.

Table 2: The basic quarterly ratios of financial liquidity, profitability, debt and market value of Rainbow Tours Capital Group during the period of 2019–2020

Specification	Q4/19	Q1/20	Q2/20	Q3/20	Q4/20
<b>Liquidity Ratios</b>					
High Ratio	1.03	1.13	0.95	1.15	0.87
Current Ratio	1.03	1.14	0.95	1.15	0.87
Cash Ratio	0.24	0.12	0.19	0.16	0.11
<b>Profitability Ratios (%)</b>					
Return on Equity	22.22	19.60	7.85	-28.76	-45.48
Return on Assets	5.64	4.91	1.73	-6.71	-8.89
Return on Sales	1.64	1.50	0.68	-4.99	-9.72
<b>Debt Ratios</b>					
Debt to Assets Ratio	0.75	0.75	0.78	0.77	0.80
Debt to Equity Ratio	2.94	2.99	3.54	3.29	4.12
Long-term Debt Ratio	0.78	0.99	0.87	1.24	1.21
<b>Market Value Ratios</b>					
P/BV Ratio	3.99	1.13	2.29	1.61	3.70
P/E Ratio	17.96	5.74	29.21	-	-
P/S Ratio	0.29	0.09	0.20	0.28	0.79
P/EBIT Ratio	13.24	4.14	19.75	-	-

Source: Own study based on: (<https://www.biznesradar.pl>, [access: 12.05.2021]).

Table 3: The basic quarterly financial data of Mercator Medical Capital Group during the period of 2019–2020 (in thousands PLN)

Financial data	Q4/2019	Q1/2020	Q2/2020	Q3/2020	Q4/2020
Total Assets	386 711	408 305	603 793	893 591	1 289 312
Equity	133 127	153 307	350 491	682 487	1 039 960
Total Liabilities	252 251	254 424	251 032	207 473	246 172
Current Liabilities	152 648	162 997	164 712	202 603	239 890
Long-term Liabilities	99 603	91 427	86 320	4 870	6 282
Net Sales	137 902	202 773	375 174	604 009	652 218
Net Profit/Loss	-726	20 635	210 509	355 772	346 323

Source: Own study based on: (<https://www.biznesradar.pl>, [access: 12.05.2021]).

Mercator Medical Group achieved surprisingly good financial results during the coronavirus pandemic crisis. The Group ended 2019 with a loss, and already in the first quarter 2020 it marked an almost thirty-fold increase in the financial result, which grew continuously. Over a year, the company's financial result increased by more than 470 times. Related to the financial result there are equally dynamic increases in net sales, which increased by almost five times

over a year. Mercator Medical Group multiplied its assets and equity during this period. During the year, the Group's long-term liabilities decreased by almost sixteen times. Short-term liabilities, however, increased, mainly those on account of supplies and services.

The above data are complemented by changes in the values of Mercator Medical Group's stock, liquidity, profitability and debt ratios during the period of 2019–2020, which are presented in Table 4.

Table 4: The basic quarterly ratios of financial liquidity, profitability, debt and market value of Mercator Medical Capital Group during the period of 2019–2020

Specification	Q4/19	Q1/20	Q2/20	Q3/20	Q4/20
<b>Liquidity Ratios</b>					
High Ratio	0.67	0.83	1.87	2.85	3.70
Current Ratio	1.25	1.32	2.49	3.48	4.57
Cash Ratio	0.10	0.09	0.93	1.90	1.67
<b>Profitability Ratios (%)</b>					
Return on Equity	-1.75	14.37	65.80	85.41	89.44
Return on Assets	-0.60	5.40	38.20	65.24	72.15
Return on Sales	-0.43	3.54	26.79	44.17	50.71
<b>Debt Ratios</b>					
Debt to Assets Ratio	0.65	0.62	0.42	0.23	0.19
Debt to Equity Ratio	1.89	1.66	0.72	0.30	0.24
Longterm Debt Ratio	0.75	0.60	0.25	0.01	0.01
<b>Market Value Ratios</b>					
P/BV Ratio	0.79	1.32	2.42	7.12	4.30
P/E Ratio	-	9.22	3.68	8.34	4.81
P/S Ratio	0.20	0.33	0.99	3.68	2.44
P/EBIT Ratio	14.65	5.01	3.17	7.48	4.27

Source: Own study based on: (<https://www.biznesradar.pl>, [access: 12.05.2021]).

After the first quarter 2020 Mercator Medical Capital Group was characterised by strong over-liquidity, both current, fast and in cash. Profitability of the equity, assets and sales of the Group grew dynamically from quarter to quarter, achieving surprising results. Mercator Medical Group took advantage of the time of the pandemic to settle outstanding liabilities and from being heavily indebted before the pandemic it became a minimally indebted entity. The very favourable values of the financial indicators made the Group precious and valuable to investors, as shown by the values of the stock market indicators.

The above comparative analysis unambiguously shows sudden deterioration in the financial standing of Rainbow Tours Group after the fourth quarter 2019. The main reason for this phenomenon was the slump in sales of the

Group's services related to the outbreak of the coronavirus pandemic and the accompanying global and local lockdown.

The financial situation was opposite in Mercator Medical Group, which marked surprisingly high revenues on product sales during the pandemic, generating huge profits. This was caused by an increase in demand for protective medical materials during the coronavirus pandemic.

#### 4.3. The assessment of the COVID-19 pandemic on the financial standing of the studied enterprises

The current crisis caused by the COVID-19 pandemic is undoubtedly a tough time for most businesses around the world. However, there are some industries that have not been affected by the crisis, and in fact are enjoying their greatest success during this time. Rainbow Tours Capital Group, which is one of the largest tour operators in Poland, went through a trying time during the global lockdown and had to face the crisis situation it found itself in. In this difficult period, companies from the broadly understood medical industry have been successful, an example of which is Mercator Medical Capital Group which produces and sells medical disposable personal protection materials.

Figure 1 presents the shaping of quarterly net sales of the studied Capital Groups, Rainbow Tours and Mercator Medical, in the period before and during the pandemic.

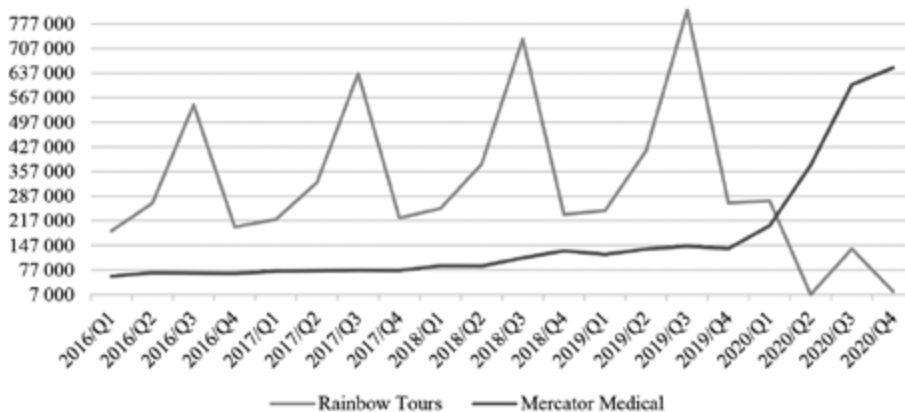


Figure 1: Quarterly net sales of Rainbow Tours and Mercator Medical Capital Groups during the period of 2016–2020 (in thousands PLN)

Source: Own study based on data: (<https://www.biznesradar.pl>, [access: 17.05.2021]).

The chart above shows that until the end of 2019 Rainbow Tours Capital Group's net sales were high in the second and third quarter of each year, with

declines in the first and fourth quarter. This is due to the seasonality of the industry, with the highest demand for the company's services occurring in spring and summer. On the onset of the COVID-19 pandemic, i.e. after the fourth quarter 2019, Rainbow Tours Group's net sales fell sharply and reached record low values during the period under review, regardless of the quarter. This low state of net sales continued till the end of the fourth quarter 2020.

Mercator Medical Capital Group had similar net sales values in the pre-pandemic period, and they maintained a slight upward trend. However, after the fourth quarter 2019, the Group marked dynamic growth of net sales, which continued to increase steadily and at a shocking rate until 2020.

The financial result of the studied entities developed analogously. Rainbow Tours Capital Group experienced dynamic declines after 2019 and recorded a loss of almost PLN 28,000 thousand in the fourth quarter 2020. In contrast, Mercator Medical Capital Group rebounded from the decline during the COVID-19 pandemic and made huge profits, ending the fourth quarter 2020 with a financial result of PLN 348,599 thousand.

During the pandemic, the assets and equity of Rainbow Tours Group declined and, as a consequence, the company became significantly indebted. Thanks to increased turnover, Mercator Medical Group multiplied its assets, especially its liquid assets, and its equity. In the pre-crisis period, the entity was heavily indebted; the COVID-19 pandemic enabled the Mercator Medical Group to pay off its long-term liabilities, which were more than PLN 93,000,000 less at the end of 2020 than in the same period a year earlier.

Changes in the basic financial values of the studied entities also contributed to their liquidity, profitability, debt and market value levels. Rainbow Tours Group experienced declines in liquidity in 2020 and was unable to fully cover its short-term liabilities with current assets. Decreases in sales revenues made the company unprofitable and the level of indebtedness of its equity and assets significantly exceeded optimal values. All this affected Rainbow Tours' stock market indices, which also experienced sharp declines. During the COVID-19 pandemic, Mercator Medical Group recorded huge increases in liquidity and profitability ratios compared to the period before the pandemic outbreak. The Group was characterised by excess liquidity and very high return on equity, assets and sales during that period. During the period of 2016–2019, the Group was quite heavily indebted, and in addition, that debt increased year by year. During the pandemic, the entity's long-term debt, general debt and equity were minimal and getting smaller every quarter. Mercator Medical went from being an unattractive entity on the stock exchange to a valuable object for investors.

The coronavirus pandemic contributed to changes in the quotations of the studied companies on the Warsaw Stock Exchange (WSE) and the shaping of

their price. Figure 2 presents quarterly changes in share prices on the WSE of the studied entities, Rainbow Tours and Mercator Medical. The presented quarterly price takes into account divisions and mergers.

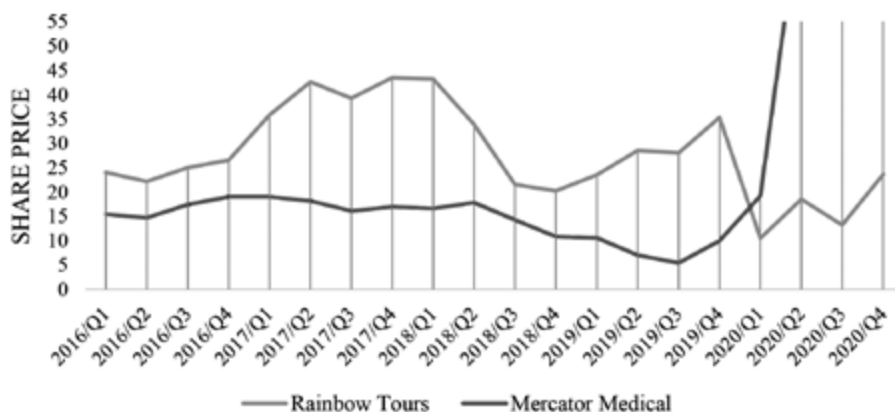


Figure 2: Quarterly share prices of the studied companies on the WSE during the period of 2016–2020 (in PLN)

Source: Own study based on data: (<https://www.biznesradar.pl>, [access: 17.05.2021]).

It can be seen from the Figure above that Rainbow Tours' quarterly share prices have fallen dramatically since the beginning of 2020, reaching their lowest quarterly rates since the beginning of 2016. The company's market value during the COVID-19 pandemic was much lower than during the pre-crisis period, but started to rise after the third quarter 2020. Mercator Medical's stock price during the COVID-19 pandemic reached record highs on the WSE, namely PLN 19.18 in the first quarter 2020, jumping to PLN 80.20 in the second quarter, reaching as high as PLN 459 in the third quarter and PLN 422 in the fourth quarter.

By performing a comparative analysis of the financial standing of the studied Groups in the period before and during the pandemic, a twofold impact of the COVID-19 pandemic on the financial standing of these entities was observed. The pandemic has had a definitely negative impact on the company from the tourism industry, i.e. Rainbow Tours Capital Group. This entity was actively participating in the market in the pre-pandemic period, generating high sales revenues and profits. At that time it did not have high debt, it was profitable and maintained liquidity at an optimal level. Rainbow Tours also maintained favourable share prices on the WSE.

A sharp decline in turnover in the tourism industry caused by travel restrictions and the closure of accommodation facilities contributed to the deterioration of the company's financial standing. Since the beginning of 2020,



Rainbow Tours Group has marked lower and lower net sales revenues and, consequently, increasing financial losses. Due to the pandemic, the Group has become significantly indebted, stopped generating profits and thus has not maintained financial liquidity and profitability. In turn, Rainbow Tours' share prices and stock indices values will deteriorate significantly.

Positive consequences of the COVID-19 pandemic have been experienced by Mercator Medical Capital Group. The demand its products has increased dramatically during the pandemic. The financial standing of Mercator Medical Group in the period before the onset of the pandemic was deteriorating. The Group achieved quite low values of profitability and liquidity ratios, the main reason for which were average sales revenues, low profits and even losses. In addition, the company was heavily and long-term indebted at that time.

During the COVID-19 pandemic, personal protective equipment turned out to be extremely important, not only masks, but also medical disposable gloves that protect against infection with the SARS-CoV-2 virus. The time of the pandemic has proved to be an opportunity for growth for Mercator Medical Group, which has benefited significantly from the current crisis. Since 2020, the entity has recorded very high values of sales revenues, profits, liquidity and profitability. The once indebted Group has become an entity with minimal debt. Mercator Medical has become an extremely valuable company on the WSE during the coronavirus pandemic, as confirmed by its almost unbelievable share prices.

## 5. Conclusion

In the conditions of constant market changes and development of the globalisation process, every enterprise is exposed to crisis situations. The sources and causes of the crisis may be both internal and external factors from the company's environment. They may be of both economic and non-economic nature.

The COVID-19 pandemic broke out in December 2019, with a still ongoing crisis facing the entire world. With its origins in non-economic factors, the coronavirus pandemic has affected almost every economy in the world, hitting especially tourism, gastronomy, international transport, culture and education. However, during the coronavirus crisis, some sectors of the economy have grown, especially: digitalisation, e-commerce and broadly understood medical industry. The analysis made it possible to assess its impact on the financial standing of two Polish companies: Rainbow Tours Capital Group and Mercator Medical Capital Group. This analysis proves the possibility of the occurrence of twofold impact of the coronavirus pandemic crisis on enterprises.

The negative impact of the pandemic has been experienced by Rainbow Tours Capital Group which operates in the tourism sector. In the pre-pandemic

period, the entity was in very good financial standing, maintaining optimum liquidity, profitability and low debt levels. During the coronavirus pandemic, many countries introduced travel restrictions and suspended the activities of accommodation facilities, which contributed to the stagnation of broadly understood tourism sector. Rainbow Tours Group's sales revenues began to decline rapidly from the beginning of 2020 and the entity marked losses. The Group has become significantly indebted without maintaining financial liquidity and profitability. The share prices of Rainbow Tours on the stock exchange have deteriorated significantly.

During the pandemic, demand for personal protection products and disinfectants have increased dramatically. Owing to this, the positive effects of the COVID-19 pandemic have been experienced by Mercator Medical Capital Group. The Group's financial standing in the period before the pandemic was deteriorating. The entity achieved low profitability and liquidity and was heavily indebted, achieving increasingly high losses. The financial situation of Mercator Medical Group has significantly improved during the coronavirus pandemic. A sharp increase in sales revenue since the beginning of 2020 has caused the company to start generating high profits. In doing so, it has become extremely profitable, as well as it has maintained a high level of financial liquidity and a low level of debt. Mercator Medical S.A. achieves surprisingly high stock market quotations during the crisis.

The study has shown that the COVID-19 pandemic has placed Rainbow Tours Capital Group in a difficult financial situation. For Mercator Medical Capital Group, on the other hand, the pandemic has become an opportunity to achieve success on the global market. Crisis situations are not always connected with the worsening of the financial standing of entities. Sometimes a crisis may turn out to be an opportunity to develop the activities of an enterprise.

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**PART II** **MECHANISMS**  
**OF THE DEVELOPMENT PROCESSES**  
**OF ENTERPRISES AND ECONOMIES**



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# **KEY SUCCESS FACTORS FOR INSTITUTIONS SUPPORTING THE DEVELOPMENT OF STARTUPS IN POLAND – A COMPARATIVE PERSPECTIVE OF INCUBATORS AND ACCELERATORS**

## **1. Introduction**

Nowadays, understanding the concept of key success factors (KSF) seems to be important not only for startups but also for all institutions that have an impact on these startups. The considered factors determine the future opportunities of startups in actual business activities based on the support obtained, experience gained and business tools delivered by these institutions. For this reason, it seems vital to understand the critical areas of creating a competitive advantage by supported startups and identify the fundamental differences considering activities of particular types of institutions supporting the startups' development. Therefore, the primary purpose of this article is to get to know, understand and explain, and consequently to compare the specificity of key success factors within the activity of chosen incubator and accelerator functioning in the Polish market. The authors focused on building an appropriate comparative matrix, which may constitute the seed for future research in this field.

J.F. Rockart identifies several sources of KSF that relate to the company's mission. Among them, he lists the structure of a given industry (specification of requirements, applied technology, characteristics of products), competition strategy, importance of the industry, geographic location, also environmental conditions (the impact of macroeconomics on the industry competitiveness, the impact of

economic and legal policy of the government), factors with a temporary (short-term) effect. e.g., lack of qualified employees, lack of managerial experience), the position held by the manager in the company (Rockart, 1979). On the other hand, E. Skawińska and R.I. Zalewski indicate three dimensions of KCS (Figure 1), namely: behavioral – relating to cooperation and other forms of cooperation, structural – represented by social networks and structures, and institutional – containing formal and informal institutions (Skawińska, Zalewski, 2016).

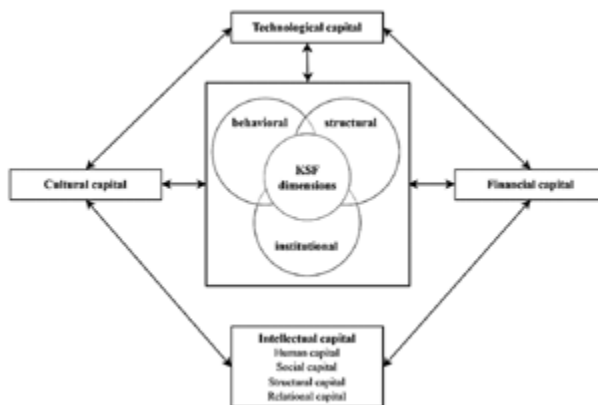


Figure 1: Model of key success factors (KSF) for Polish enterprises of the future

Source: Skawińska E., & Zalewski R.I. (2016), *Konkurencyjność – kluczowe czynniki sukcesu przedsiębiorstw XXI w.*, „Przegląd Organizacji”, No. 3, pp. 16–25.

Due to the subject matter and the nature of the KSF separate areas interpretation for institutions supporting the startups’ development in Poland (innovation centers), the authors of this study used the qualitative methodology to examine the specific nature of these entities. The conceptual model of the KSF elements indicated in the above figure was the basis for implementing the two case studies described in this article. As a consequence, the performance characteristics of the selected business incubator and business accelerator were compared.

## 2. Description of innovation centers

The activity of various types of organizations is a response to specific market needs, especially nowadays in the perspective of the increasingly clear challenges generated by the uncertainty and dynamics of the environment under Industry 4.0 conditions (Mażewska, Rabczenko, & Tórz, 2011). For this reason, considering the growing number of startups operating in the modern world,



many institutions have been created that constantly adapt the offer dedicated to their needs. Importantly, they respond to the needs of startups at various stages of their business and in multiple areas. Trends in cooperation between startups and these organizations can be observed all over the world. Such organizations are classified in various categories, distinguishing most often various business environment institutions, innovation, and entrepreneurship centers. In this article, these terms are used interchangeably. The authors analyze organizations whose primary goal is to support the emergence and development of innovative activities carried out under the form of startups.

The factors influencing the fact that business environment institutions are created and carry out their activities, and consequently develop, are demand for services of a given institution, initiative to support economic development coming from local authorities, and the functioning of people and organizations interested in implementing this type of activity in its environment (Trzaska, Sulich, Organa, Niemczyk, & Jasiński, 2021). The importance of the initiative originating from local authorities, which very often set up the considered organizations or support the activities of the existing ones, was emphasized here. This type of support can manifest itself in various forms – usually, it provides financial support in competitions for startups, implementing mentoring, sharing infrastructure. However, the actions of local authorities on their own are not sufficient. To function effectively, they should be complemented by the activity of people or organizations contributing to the institution's development or potentially interested in its services.

Running startups very often starts with identifying an innovative idea for a venture. Originators at the initial stage are not yet equipped with a sufficient level of resources to run it. The lack of adequate knowledge about the market functioning, financial resources, or infrastructure prompts startup managers to take advantage of innovation centers' offers that deliver support in this area.

Initiating cooperation with such organizations allows verifying the business model reliably, determining success factors, and creating a development strategy that specifies activities in various aspects of the startup's functioning, e.g., market research, fundraising, the offer's positioning, and advertising, pricing, distribution system, team management (Kowalewski 2020). The main goals of business environment institutions include the cooperation network creation aimed at supporting startups. In this context, it is crucial to ensure appropriate circumstances for the aforementioned networks functioning to allow startups to maintain their autonomy and create favorable conditions for growth – more profitable than independent functioning on the market (Kubiński, Ropuszyńska-Surma, 2017).

When trying to make a typology of institutions supporting startups in Poland, the Polish Business and Innovation Centers Association should

be mentioned, which brings together 274 centers (SOOIPP, 2021). The 2018 Report analyzes the following innovation centers: technology parks, technology incubators, academic incubators, technology transfer centers, and innovation centers. The report's authors emphasize that due to the interpenetration of various types of activity between centers, it becomes more and more challenging to navigate this division. Therefore, the research was carried out on centers in terms of the services they provide, broken down into two groups of innovation centers: centers with infrastructure, i.e., with infrastructure for rent, and centers without infrastructure, i.e., using their infrastructure for their own needs (Bąkowski, Mażewska, 2018). This approach allows one to depart from the traditional definition of particular centers types and look at them through the prism of an offer addressed to their beneficiaries.

A. Grycuk, on the other hand, identifies three groups of organizations whose goal is to support startups in Poland directly. The first group includes entities from the private sector, including large enterprises, VC funds, and private universities. The second group consists of institutions and entities from the public sector (including local government units, special economic zones, technology parks, and public universities). The third one embraces non-profit organizations and startup communities (Grycuk, 2019).

In this article, the authors analyzed incubators and accelerators because they are two types of organizations that are particularly targeted at startups. Also, in this area, there are many definition problems. In practice, there are difficulties with matching selected programs to the concept of an acceleration program. Many of them actually receive the name of an accelerator, and by definition, they can also be assigned to an incubator. It also influences the difficulties in researching this topic (Cohen, Hochberg, 2014).

The critical factor that distinguishes these two types of organizations is that incubators are geared towards providing growth space for startups in their early stages, so "Philosophically, incubators tend to nurture nascent ventures by buffering them from the environment to give them room to grow". In turn, accelerators aim to accelerate the process of learning, adaptation, and functioning in the market (Cohen, Susan, 2013).

The relationship between innovation centers (incubators, accelerators, technology parks, etc.) and the so-called strategic tenants seems to be especially important. Such entities usually rent large areas from the considered units, ensuring economic stability. In addition, through activities consistent with the specialization of the technological park/ business incubator, they can also deliver substantive support in the implementation of R&D projects or business initiatives (Tórz, Kăki, 2011). Consequently, having trusted strategic tenants can be considered a critical success factor in the operation of innovation support units.

This applies particularly to the early development phases – both the innovation centers themselves and the units supported by them, including startups.

### 3. Incubators – literature review

A characteristic feature of the incubators' operation is support for a startup in its early functioning stage. The type of aid can be described as innovative in this case. The essential resources required for the incubator to function are the infrastructure and the team. Infrastructure is defined as all buildings intended for renting space along with their equipment. On the other hand, the team in this sense consists of all persons who carry out substantive, administrative, and technical tasks within the incubator (Mażewska, Rabczenko, & Tórz, 2011).

There are many options for the support provided by the incubator. The first one concerns the financial factor, which is most often implemented in return for shares in a startup. Other categories include economic, legal, or financial consultancy, contacts with scientific institutions and evaluation of innovative projects, assistance in obtaining financial resources, and creating the suitable climate for starting a business and implementing innovative projects (Matusiak, 2006).

One can also look at incubators from the perspective its type, mission, and objectives. The table below presents an example of a typology of business incubators.

Table 1: Typology of business incubators

Specifications	Incubator mission	Primary purpose of the activity	Secondary purpose	Activities in the sector
Mixed incubators	leveling differences in business	establishment of new companies	creating jobs	all sectors
Economic development incubators	reducing local or regional disparities	economic development	creating entrepreneurial behavior	all sectors
Technological incubators	leveling the differences between enterprises	creating entrepreneurial behavior	establishing enterprises implementing new technologies and promoting employment among graduates	modern technologies (telecommunications, biotechnology)
Social incubators	leveling social differences	integrating socially excluded people	creating jobs	non-profit organizations
Scientific and research incubators	bridging technological gaps	conducting research on the blue laser (as part of the blue-sky project)	establishing spin-off companies	sectors of modern technologies

Source: Aernoudt, R. (2004), *Incubators: Tool for Entrepreneurship?*, "Small Business Economy", Vol. 23, No. 2, p. 128.

A different approach allows one to look at the startups' incubation from the perspective of the stage at which their idea is at and indicate the pre-incubation and incubation phase of the concept. In the pre-incubation phase, the following activities are carried out to support startups: first appointment (initial assessment of the startup idea validity), training (in the field of management and specialized training related to individual areas of business activity/ sector); orientation (defining the business idea and business model); innovation assessment (through internal competencies and an external committee); business plan (completion of the BP with the financial forecasts). Within the incubation phase, the activities carried out by the incubator include start-up creation (access to finance, legal and administrative support, physical incubation, intellectual property rights), early-stage (fundraising, mentoring and coaching, networking, technology transfer), and expansion – definition of the exit strategy (The Smart Guide to Innovation Based Incubators, 2010) The required infrastructure factors to be considered in each area are presented in the table below.

Table 2: The needed infrastructure

Pre-incubation services	Incubation services	Post incubation services	Training services	Coaching and mentoring services
<ul style="list-style-type: none"> <li>• Room for pre-incubation</li> <li>• Workstations</li> <li>• Connectivity</li> <li>• Office facilities</li> </ul>	<ul style="list-style-type: none"> <li>• Incubation space</li> <li>• Secretarial space/ reception</li> <li>• Meeting rooms</li> <li>• Coffee corner</li> <li>• Conference rooms</li> <li>• Laboratories</li> <li>• Office facilities</li> </ul>	<ul style="list-style-type: none"> <li>• Conference rooms</li> <li>• Research centres</li> <li>• Laboratories</li> </ul>	<ul style="list-style-type: none"> <li>• Fully-equipped training rooms</li> </ul>	<ul style="list-style-type: none"> <li>• Office space</li> <li>• Meeting rooms</li> <li>• Connectivity</li> </ul>

Source: European Union Regional Policy (2010), *The Smart Guide to Innovation Based Incubators (IBI)*, p. 25.

Another interesting approach presents the phases of incubator development, and the types of activities carried out during each phase. They are presented in Figure 2. The first phase relates to the very basic scope of support for startups and is implemented mainly in the technical infrastructure administration area. This tier does not yet include IT activities. At the next level, this offer is expanded with an individual approach to incubated startups. It is carried out through consulting services and the offer's development towards individual consideration of the problems and situations for separate startups. At the third level, activities are also focused on carrying out activities aimed at supporting startups in the

search for external sources of financing. Activities carried out on the fourth level include support for the internationalization of incubated startups (Mażewska, Rabczenko & Tórz, 2011).

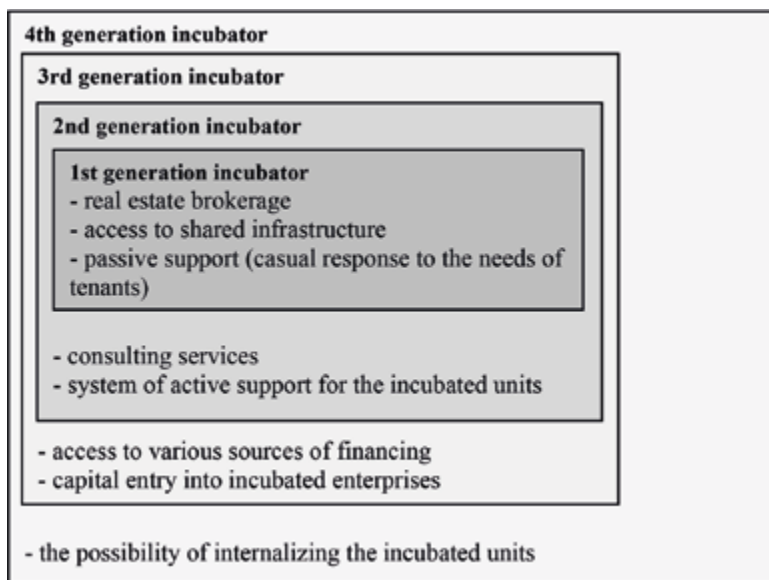


Figure 2: Development phases of incubators

Source: Mażewska, M., Rabczenko, A., & Tórz, A. (2011), *Organizacja i zarządzanie działalnością inkubatorów technologicznych*, Polska Agencja Rozwoju Przedsiębiorczości.

The variety of incubator models means that startups can obtain assistance in various areas, sectors, and at different stages of implementing the idea. It can be observed increasing adaptation of incubators' offers towards an individualized approach to startups. Thanks to this, the chances of success from the cooperation between the startup and the incubator become more remarkable, which contributes to mutual success.

#### 4. Accelerators – literature review

The second type of institutions analyzed in this article is the accelerator. In a model approach, they provide support at a later stage than the incubator. They are focused on offering programs for scaling existing ventures. At this moment, it is worth pointing to the concept of pre-acceleration, which is addressed to startups at an early stage of development with the potential to become a profitable one. This type of program can target ideas that are in the team-building phase (Adamczyk, 2017).

C. Tomkins Bergh indicates the following three trends for accelerator models (Bergh, 2015):

- 1) Evolving Upstream – consists of transforming accelerators operating on the market into seed funds and departing from the model of functioning as training programs. They often specialize in a specific industry.
- 2) Expanding Scope of Services – consisting in extending the scope of accelerator services with complementary services related to the activities of incubators.
- 3) Growth of Corporate Accelerators – operating within an internal and external model.

Acceleration of ideas is based on offering specialized (acceleration) programs to accelerate the development of a startup in the initial development stage. In other words, it means accelerating the validation of products and services and, consequently, reducing technological and financial risk (Kowal, Kowal, 2019). Participation in acceleration programs is most often possible through competition. Various criteria are determined for them, for example: having a Minimum Viable Product, skills, competencies, and experience of startup founders, the number of team members, obtaining traction, operating in a specific sector, the requirement not to be related to other professional work, transfer to the place of acceleration program implementation on its duration time. It is specified that acceleration programs are carried out on average from 3 to 5 months. If the idea is not verified, startup founders can first use pre-acceleration programs and acceleration programs at a later stage (Grycuk 2019).

Accelerators also conduct their activities in exchange for shares in a startup. The forms of support they offer as part of their activities include a place to work, help from mentors, and support in raising capital. J. Kogut points out that, compared to incubators, they are characterized by a smaller number of clerical procedures that they have to go through and an atmosphere during meetings with mentors, which can be compared to a friendly one (Kogut 2017). Acceleration programs are often associated with investment funds to support early-stage activities with high investment risk (Kowal, Kowal, 2019).

Other factors of acceleration programs that are attractive to startups include: expanding the startup's network of contacts and networking with partners, experts, and stakeholders. On the one hand, it allows exchanging knowledge and experiences with them, and on the other hand, it provides access to potential customers or cooperating companies. In addition, the list may be supplemented by factors such as the own brand of the accelerator, enabling scaling of products and services on foreign markets, access to infrastructure, access to co-working space. Thanks to the cooperation in the framework of acceleration programs of large startup organizations, they have the opportunity to test their projects. Many

of the programs are based on the idea of public-private partnership (Kowal, Kowal, 2019).

Particular attention should be paid to the limited duration of acceleration programs and the parallel participation of various organizations (startups, mentors, financing institutions) within the programs. This favors the focus of all these organizations on innovative undertakings during their lifetime. An additional aspect embraces demo days, during which startups present the results of their work (Cohen, Susan, 2013). Among the most critical factors determining the effectiveness of accelerators, M. Czyżewska lists the quality of advisory support and the effectiveness in obtaining financing. In her opinion, these factors affect the process of building the accelerator's reputation and the willingness to cooperate with it by the best startups (Czyżewska, 2018).

Acceleration programs can also be implemented by corporations (Mahmoud-Jouini, Duvert & Esquirol, 2018). They can be distinguished by the fact that the support they provide in the field of mentoring, education, or resources may relate to the specificity of the operation of a given corporation. Corporate acceleration programs are characterized by: an open application process for startups, the possibility of joining the programs by startup teams, a specific duration, participation of startup cohorts. The author investigated corporate accelerators in the following four areas (4P): Proposition — what the program offers; Process — how the program is run; People — who is involved; Place — where the accelerator is hosted (Kohler, 2016).

On the other hand, D.K. Kanbach and S. Stubner developed a typology of corporate accelerators, in which they distinguished the following four types: Listening Post (which aims to understand the latest trends and changes that appear on the market, aimed at establishing relationships between entities), Value Chain Investor (the aim is to identify, develop and integrate products and services created as part of the programs that may be linked to the corporate value chain), Test Laboratory (creating an environment that will be safe for testing ideas implemented within startups – internal and external), Unicorn Hunter (the purpose of this type of accelerator is to invest in startups that can increase their value and bring returns). In their research, they characterized particular types of accelerators in terms of the following factors: Objective, Program Focus (Locus of opportunity, Strategic logic, Industry Focus, Equity involvement, Venture stage), Program organization (External partner, Connection to parent, Leadership experience) (Kanbach, Stubner, 2016).

S.L. Moschner, A.A. Fink, S. Kurpjuweit, S.M. Wagner & C. Herstatt presented the division of accelerator programs into four models, which were distinguished according to the number of participants and the accelerator's management structure. They indicated: in-house accelerators, hybrid accelerators,

powered by accelerators, and consortium accelerators (Moschner, Fink, Kurpjuweit, Wagner & Herstatt, 2019).

Interesting research was conducted in 2020 by C. Polo García-Ochoa, C. De Pablos Heredero & F. J. Blanco Jiménez. They analyzed Spanish accelerators and impact generation of dynamic capabilities on their performance. It turned out that not all dynamic capabilities affect these processes equally. In the case of the market sensing, variables more important than the others turned out to be: related to the use of entrepreneurial methodology and teaching them to use tools and techniques to follow, as well as helping them to define business goals (KPI) and track their status (metrics). They emphasize that “a higher frequency in developing those routines by accelerators would lead to worsen performance in terms of startup financing”. In the case of accelerators focused on support in the field of profitability assessment as well as market recognition and uncertainty resolution, assistance is provided in the area of market and technology analysis. Consequently, it helps startups quickly identify the possibilities of implementing a given project.

Interesting conclusions have also been observed in Poland. A. Grycuk, based on the presented case studies on institutions supporting the activities of startups, notices an increase in the number and nature of activities for startups, establishing international cooperation contributing to the expansion of startups, focusing on practical knowledge and expert support, difficulties in deciding who to cooperate with, problems with the determination of the activities' effectiveness (Grycuk, 2019).

## **5. Case study I description – the incubator**

The formal determinants of the operation of InQUBE – University Entrepreneurship Incubator are regulated by the legal acts of the university. InQUBE is a university business incubator operating at the Wrocław University of Economics and Business. It includes the following subordinate units:

- Center for Knowledge Transfer and Innovation and Commercialization,
- InQUBE Consulting,
- InQUBE Startup House.

Its goal is to support building entrepreneurial attitudes of the academic community and broadly understood business activity. On the other hand, it has a broad spectrum of beneficiaries: students and graduates, employees of universities (especially from the region), entrepreneurs. Mentors, trainers, academic representatives, and representatives from the business world (sharing their knowledge and experience) work together as part of the projects (events, training, competitions) conducted in the incubator.



All events, competitions, and series of meetings on establishing and running startups are conducted in the stationary and online form (the present need to adapt to the pandemic requirements). The incubator uses social media and a website where it updates information about its activities. Part of the information addressed to participants related to the incubator is provided in the form of legal acts issued by the university. In contrast, informal communication plays a vital role in the processes of building cooperation and trust.

The InQUBE building can be described as a modern space with conference and training rooms, tenants' offices, offices of university employees – incubator, relaxation zones, reception, kitchen, and eat & meet zone. It is located in an attractive location in Wrocław, on the campus of the Wrocław University of Economics and Business.

An essential aspect of the incubator's functioning is the fact that it operates within the university. The key to its creation was to obtain some funds from the Lower Silesian Intermediate Body (DIP). Events and competitions for startups are organized, under which they can receive external funding for their activities and rent offices and co-working spaces.

Among the critical factors for the incubator, the functioning at the Wrocław University of Economics and Business and the importance of people with significant successes in the business world cooperating with the considered entity are essential.

## **6. Case study II description – the accelerator**

The case study was prepared based on an interview with one of the founders, a member of the foundation's council, and a person involved in the foundation's activities, e.g., he is a trainer, mentor, or judge during hackathons. The Krakow City of Startup Foundation (in polish – Fundacja Kraków Miasto Startupów) runs many programs aimed at creating and developing startups. Among them, the following two programs are implemented:

- KRK InnoTech Starter (KITS) is a pre-acceleration program focused on supporting innovative business ventures.
- The Socially Responsible Startup Accelerator (in polish, Akcelerator Startupów Odpowiedzialnych Społecznie – ASOS) is an annual acceleration program.

The programs are focused on supporting startups operating in the pro-social and pro-ecological areas, which makes them firmly focused on corporate social responsibility. The distinguishing feature of these acceleration programs is that the business model of innovative ventures may be related to obtaining pro-social support. This means that projects participating in competitions may become NGOs and do not always have to be commercial (have a specific legal form of an enterprise).

The programs are aimed mainly at startups from Krakow and the surrounding areas. However, there were situations when accelerators cooperated with startups from other cities. It is very closely related to the rules of obtaining grants, often taking into account KPIs related to the location of beneficiaries.

The foundation's effectiveness in obtaining grants and funds from competitions and projects carried out by other organizations (e.g., budgetary entities) can also be considered a key success factor. Part of the external funding is obtained based on relational resources. As part of KITS, financing is also obtained from UBS's CSR budget. Relational resources also played a significant role in getting this financing, as the project was transferred to the Krakow City of Startup Foundation. The share of internal financing is smaller.

In the activities of the accelerator, the importance of experts, mentors, founders, and cooperating organizations (related to co-financing) should be emphasized. They play the leading role in the support provided to startups.

Communication is mainly carried out informally. Representatives of the analyzed accelerator are dealing with a combination of e-mails, live and virtual meetings. This form often depends on the requirements of the financing institution, donors, sponsors, or business partners (e.g., due to a pandemic, activities within a specific area of cooperation take place online). On the other hand, the Foundation prefers meetings in a stationary form, which have been described as „more present”.

Individual paths are implemented under the programs. KITS is such an example. As part of this, a mentor is assigned for the entire duration of the program. Participants report to the acceleration programs as a team. However, before applying to the program, they could participate individually or in smaller groups in a hackathon organized by the Foundation. After that, they began to cooperate with each other as part of the idea in this particular team and then joined the program (there is no system model, but a startup can go through such a path if it decides to do so). People who are regular customers/ beneficiaries cooperate with the Foundation. Another type of collaboration involves the path from mentee to mentor. It is considered on a case-by-case basis each time.

Among the key success factors, one should also mention the role of one of the founders who connected the entire activity of the foundation and was of crucial importance in building the model of its operation. It can be observed that the ecosystem around the foundation is constantly developing.

One can also mention a suitable location in the center of Krakow and the possibility of renting places as part of a co-working idea. Among the intangible elements – the experience of the founders and people cooperating with the Foundation, founders' personal brands that are recognizable in the environment, which affects the trust of participants and mentors, social media, website, blog (compared to other business environment institutions, the Foundation tries to

keep updating the information they contain). The coherence of activities carried out within the incubator, and the foundation's activities with the founders' personal brands should also be emphasized.

## 7. Case studies comparison

Based on the scheme elements indicated in the introduction to this article, a comparison was made of the key distinguishing features for the considered innovation centers. Based on interviews conducted utilizing a standardized interview form with representatives of the selected incubator and accelerator, the authors of this article identified the fundamental differences in the perception of key success factors (KSF) in both surveyed entities. The results of the comparative analysis are presented in the table below.

Table 3: Main differences between researched incubator and accelerator in terms of KSF

Main dimensions of KSF	Researched incubator characteristics	Researched accelerator characteristics
Main goals, area of operation, and business model.	Support for building entrepreneurial attitudes of the academic community and broadly understood business activity.	Addressed to early-stage startups (especially in Kraków and close surroundings).
Individual persons and groups of people critical for the entity functioning	Students and graduates, university employees (especially from the region), entrepreneurs, business representatives.	Pro-social and pro-ecological startups, experts, mentors, founders, cooperating organizations (related to co-financing).
Information channels and communication methods – main principles and barriers	Formal and informal communication, stationery, and online events.	Informally, a combination of various forms: e-mails, live/ virtual meetings.
Characteristics of intellectual capital (talents supporting, trust and cooperation atmosphere creation, incentives for groups and social networks creation, key relationships increasing intellectual development)	Opportunity to participate in trainings, meetings with business representatives, academic staff, and establish cooperation in various areas.	Individual development paths, previous events that connect people to cooperate, the possibility of playing different roles (e.g., from mentee to mentor), trust in the founders of the foundation.
Critical elements and characteristics of utilized technological capital (material and non-material)	Social media, website, modern incubator space, localization.	Social media, website, localization, co-working, personal brand of the founders.
Specificity of funding sources – characteristics of internal and external financing	The university obtained some funds from a grant from The Lower Silesian Intermediate Body (DIP – Dolnośląska Instytucja Pośrednicząca).	Grants, projects, competitions, CSR budget from UBS, co-financing obtained as a result of relational resources, and to a lesser extent – own funds.
Main elements and role of cultural environment within the entity	Trust in the university brand, cooperation with the academic and business world.	Experience, trust in the founders based on their brand and the brand of the foundation, cooperation
Additional critical factors shaping the competitive advantage of the entity	Functioning within the university.	Consistency within the accelerator, consistency with the personal brand of the founders.

Source: own elaboration based on: Skawińska E., & Zalewski R.I. (2016), *Konkurencyjność – kluczowe czynniki sukcesu przedsiębiorstw XXI w.*, „Przegląd Organizacji”, No. 3, pp. 16–25.

When interpreting the above table, one can notice both significant similarities but also substantial discrepancies in the functioning of the analyzed incubator and accelerator. The identification of the differences mentioned above suggests the need to separate various forms of institutions supporting the development of startups and to focus on dedicated research devoted to particular forms of startup support and development.

## 8. Conclusion

This article presents a literature review on the activities of incubators and accelerators as selected innovation centers focused on supporting the creation and development of startups. Case studies characterizing the key success factors (KSF) of two selected institutions were presented. It should be emphasized that there are factors convergent for both organizations – such as the goals of activities related to the support of startups, the importance of trust in the brand (institutions, people working within it), running social media and a website referring to current events, the importance of informal communication, the possibility of establishing cooperation as part of the activity carried out. There are also many elements differentiating their activities – for example, the target group, location, offered forms of support, cooperating organizations. Each of them has its own individual model and scope of operation.

The primary purpose of this paper was to get to know, understand and explain, and consequently to compare the specificity of key success factors within the activity of chosen incubator and accelerator functioning in the Polish market. It was achieved by identifying the main similarities and differences in the functioning of the examined entities. However, the authors note that it is possible to conduct further research in this area. It may include optimizing the interview form and expanding the target research group with new incubators and accelerators operating in Poland and abroad. This will enable further benchmarks and recommendations.

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# **DETERMINANTS OF COOPERATION BETWEEN THE SME SECTOR AND BUSINESS ENVIRONMENT INSTITUTIONS (BEIs)<sup>1</sup>**

## **1. Introduction**

The sector of micro-, small and medium-sized enterprises (SMEs) is very important for the economy in Poland. According to the report of the Polish Agency for Enterprise Development (PARP, 2021), 99.8% of all enterprises in Poland are SMEs (of which 97.0% are micro-enterprises, 2.2% – small enterprises and 0.7% – medium-sized enterprises). Large enterprises constitute only 0.2%. Note that 52.5% of the companies in this sector provide services, 22.4% are involved in trade, 14.9% are in construction and 10.1% are manufacturers. Therefore, enterprises in the SME sector have a 49.1% share in GDP and provide jobs for 6.75 million people, which constitutes 56.0% of the share of the SME sector in the structure of average employment in Poland. Furthermore, since 2009, the number of active companies in Poland has been growing steadily, from 1,674,000 in 2009 to 2,212,000 in 2019 (PARP, 2021).

The cited report also shows that the general economic situation in Poland was evaluated by entrepreneurs much less than in previous years (2016–2019) and, as the authors of the report note, this assessment has never been so low. Undoubtedly, this situation was and is influenced by the SARS-CoV-2 virus pandemic and the related economic crisis (PARP, 2021).

Therefore, appropriate support is very important to reverse negative trends and bring SMEs back on track to economic growth. Research shows

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that there is a strong relationship between the quality of market institutions and economic growth (Siyakiya, 2017; Samarasinghe, 2019). Moreover, these institutions determine the economic development of a country rather than its economic policy. Hence, governments should ensure that market entities are in the best condition possible. Support for business is provided, e.g., by Business Environment Institutions (BEI). They are of particular importance for micro, small, and medium-sized enterprises which must adapt to prevailing market rules, despite insufficient bargaining power (Tolbert et al., 2011).

The success of an enterprise consists of many factors, understood in a broader sense as favorable environmental conditions, or the ability to leverage them. These factors include, e.g., a favorable demand, appropriate legal environment, sources of financing, or the omissions of competitors. Therefore, it can be assumed that the company's success is the ability to take advantage of market opportunities while minimizing potential risk and threats. Not all enterprises are able to respond to market challenges on their own and adjust to its rules. They often lack the appropriate tools, skills, or knowledge (e.g., business support in R&D activities or specialist support, e.g., legal) (Lisowska and Grabowski, 2021).

The main purpose of the manuscript is to identify the motives for establishing cooperation between the SME sector and BEIs in Poland.

To achieve this goal, the desk research method was used to present the subject in a synthetic way.

## **2. Characteristics of Business Environment Institutions (BEI)**

The subject literature does not offer a broadly accepted definition of the term *business environment institutions*. It is often defined by related terms, e.g., “a system supporting innovative processes, or the creation, management and development activities of an enterprise” (Górzyński, Pander and Koć, 2006). The term was defined similarly by the Association of Organizers of Innovation and Entrepreneurship Centers in Poland (Stowarzyszenie Organizatorów Ośrodków Innowacji i Przedsiębiorczości w Polsce, SOOIPP):

BEIs, especially innovation centers, have a specific role to play in the innovation ecosystem. They provide a platform that connects entrepreneurship, science, and education. They create an environment conducive to the exchange and commercialization of knowledge, as well as the development of knowledge-based companies. They provide various types of support for a more effective use of local growth factors through the development of human creativity, entrepreneurship and innovation (Bąkowski and Mażewski, 2008).



Equally often, this term is defined in the literature on the subject in view of the functions that should be performed by BEIs. These functions include (Matusiak and Bąkowska, 2008):

- incubation (aimed at increasing the number of state-of-the-art businesses in the region, thus improving the structure of the local economy),
- integration (aimed at the development and intensification of network connections between all participants of the innovation system in a region),
- promotion (BEIs are seen as an instrument of territorial marketing, attracting potential investors to their region).

For the purpose of this manuscript, the term Business Environment Institutions shall be understood as: “direct and indirect impact of the environment (social, cultural, scientific, legal and economic), to the effect of defining and explaining the phenomena occurring in it, providing appropriate methods and (intellectual, material and financial) means to create, conduct and develop entrepreneurship” (Bolechowski, 2021).

### **3. Types and instruments of SME support offered by BEI**

Literature on the subject of support for economic development through BEIs mentions the high impact of this type of institutional support on the development of SMEs, both locally and regionally (Lewandowska and Stopa, 2018).

The institutional sphere, which is most important in economic development, consists of both formal institutions (e.g. the system of legal norms and organizations established to enforce them) and informal ones (e.g. moral norms, ethics, or tradition). This differentiation is similar to the formal understanding and definition of institutions, mainly in view of organizational structures and their functions (Gródek-Szostak, 2017).

Support instruments offered by BEIs, which are formal institutions, are most often classified as (Lisowska, 2014):

- direct, i.e., those involving financial resources (grants, free consultancy), most often granted individually to enterprises that meet certain criteria,
- indirect, i.e. those related to creating a friendly environment for business development (regulations regarding business activity, reduction of bureaucracy), universal.

The most frequently instruments offered by BEI include (Filipiak and Ruszała, 2009):

- stimulation of academic entrepreneurship (cooperation between science and business),
- improvement in terms of business management (better use of available resources),

- information and advisory services,
- liaising with large companies,
- providing or enabling financial support,
- encouraging producer associations,
- technology transfer and pro-innovative services.

The support instruments offered to SMEs by BEIs are a proof of the changing paradigm of the modern economy. It should be noted that in the modern world an above-average development efficiency is achieved mainly by knowledge-based economic systems (Maraques, Simon, and Caranana, 2006). The analysis of available studies on the issues related to BEIs in Poland shows that their main area of operation focuses on the so-called “soft” activities (training, counseling), and not “hard”, i.e. aimed at direct implementation of innovative solutions (Stanisławski, 2016).

#### **4. Needs and motivations of SMEs in relation to the development of business activities**

Based on the report of the Central Statistical Office (GUS) titled *Conditions for the development of entrepreneurship in the SME sector* (GUS, 2018), it can be concluded that for SMEs the important development factors include:

- local environment (i.e. the possibility of receiving support from employment support institutions and local government units in applying for EU funding, the possibility of using public financial support in the form of tax reliefs, lowering local taxes and fees, support of the local community for the enterprise),
- modern management methods (introducing new business models, using IT solutions for online business activity, as well as strategic management tools),
- human resources (striving for a higher quality of own products and/or services, introducing a human resource management model based on teamwork and commitment),
- intense competition (monitoring competitors, operating within business cooperation networks).

On the other hand, the barriers limiting cooperation between the SME sector and BEIs include (Pietruszewska-Cetkowska and Zygmunt, 2014):

- lack of awareness of the benefits of such cooperation,
- lack of knowledge of the BEI offer for business,
- own financial limitations,
- lack of trust in supporting institutions,
- lack of time needed to contact the BEI.

The barriers mentioned above indicate that the main limitation in BEI – SME cooperation is the lack of awareness of its benefits, as well as the lack of an appropriate information flow channel and trust in institutions. Other limitations include finances. Growing cooperation between SMEs and external organizations, including BEIs, follows various motives. The most common include (Gorynia, Jankowska 2008; Ratajczak-Mrozek 2011):

- leveraging market opportunities,
- access to partners' knowledge and experience,
- access to external funding,
- access to specialized services,
- increasing their bargaining position towards suppliers and clients,
- strengthening their competitive position,
- access to new customers and business partners,
- expanding the range of products and improving their quality,
- complementary cooperation between companies, including access to partners' resources,
- joint use of infrastructure, e.g., R&D, logistic,
- improving business efficiency by scaling,
- access to consulting services,
- access to highly qualified employees.

Polish SMEs increasingly notice the importance of cooperation with BEIs, which is also reflected in their motivation behind it. Such an understanding allows eliminating the limitations characteristic of this sector (lack of access to sufficient market information, tools, and services, as well as building a competitive advantage over large companies).

## 5. Conclusion

The main objective set at the beginning of this article was to identify the motivation behind cooperation between SMEs and business environment institutions (BEIs) in Poland. As shown above, the most common motives for this cooperation are:

- economic (acquiring and using financial resources to develop business activity, the networking opportunities, technology transfer and broadly understood financial support),
- non-economic (vocational counselling, training, professional courses for employees, assistance in developing the management structure, as well as consulting).

Currently, the activities of BEIs often do not adequately meet the needs of the national economy. General support is dominant, not taking into account

sectoral differentiation. At the same time, there is no information exchange and cooperation between organizations (Misterek, 2013).

Meanwhile, BEI support should be tailored to the strategic challenges of the enterprise, including its structure, territorial context, and the developing smart specializations. (Barbero, Casillas, Wright and Ramos Garcia, 2014).

The activity of BEIs in individual sectors of the economy generates various benefits. However, some of the older generation BEIs often do not adjust their offer to the changing paradigms of the economy (Bruneel, Ratinho, Clarysse and Groen, 2012).

Due to the fast pace of changes taking place in the modern economy, it is important to constantly monitor trends that impact SMEs, as well as tools aimed at supporting them. This includes eliminating the negative effects of economic crises, in order to provide this sector with opportunities for constant growth, which would increase the level of the entire Polish economy.

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# PRODUCT AUTHENTICITY AND CONSUMERS' ETHNOCENTRISM IN THE PANDEMIC ERA: A RESEARCH AGENDA

## 1. Introduction

On 11 March 2020, the World Health Organization (WHO) considered the rapid spread of the COVID-19 as a pandemic by requiring all countries to plan response activities in line with global strategic preparedness (WHO, 2020a; Vasavada, 2020). The COVID-19 (originated by the SARS-CoV-2 virus) is the fifth pandemic<sup>1</sup>, at present not yet defeated, which currently has about 5 million deaths<sup>2</sup>. Additionally, WHO declared that it was not exclusively a public health crisis but that it would impact every activity. Thus, the importance of involving every sector and every individual to overcome this enormous crisis was underlined (WHO, 2020b). In effect, COVID-19 and its negative socio-economic consequences have affected individuals' lives globally, troubling their daily routines (Laguna *et al.*, 2020), impacting their life's quality and social interactions, and mainly increasing their insecurity and uncertainty. Previous research provided evidence that insecurity and uncertainty can influence consumers' cognitions, such as the need for connection and the loss of control (Vanbergen & Laran, 2016). Especially, insecurity, uncertainty, and the feeling of anxiety can foster different consumer behaviors such as, for example, the quest for variety, the choice of risk-reducing products, and, consequently, a greater

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<sup>1</sup> Previous pandemic were caused by 1) the H1N1 virus in 1918 (about 50 million deaths); 2) the H2N2 virus in 1957 (about 1.1 million deaths); 3) by the H3N2 virus in 1968 (about 1 million deaths), and 4) the H1N1 virus in 2009 (about 300,000 deaths)

<sup>2</sup> <https://covid19.who.int/> Accessed on November, 4, 2021

propensity towards products that could be able to reassure and compensate for the pressures related to insecurity and uncertainty (Carufel, 2020). According to Galoni, Carpenter, and Rao (2020), during unsafe and uncertain times, such as the COVID-19 pandemic, the possibility of consumers varying their choices increases, leading them, for example, to trust different products (e.g., familiar and natural products). Emblematic is the case of foodstuffs for which consumers tend to consider aspects related to food safety in order to defend themselves and avoid the transmission of the coronavirus (Aday & Aday, 2020). As stated by Coluccia *et al.* (2021), the risk perceived by consumers towards foodstuffs and the entire food system (e.g., possible contamination during transport and distribution, etc.) is enough high by obliging businesses to re-evaluate their priorities and adapt their food systems to fuel consumer confidence and provide product reassurance (Nakat & Bou-Mitri, 2020).

During the COVID-19 emergency, food safety received great attention from both governments and consumers. According to European legislation, food safety is assured through a collective prevention and control approach concerning agri-food supply chains “from field to table”<sup>3</sup>. Assuming that the awareness of possible risks and the adoption of correct practices can guarantee the protection of personal and collective health, the Institutes of Health promptly provided specific indications and recommendations to guarantee the hygiene of food and packaging food both at home and when shopping in the store. These initiatives had also the aim to limit the risk of fraudulent practices by considering that the effects of the COVID-19 pandemic are being felt in different contexts across the world and it is realistic to expect that they have the potential to impact the vulnerability of the global food supply chain. Food fraud in the EU Member States increased by 85% between 2016 and 2019<sup>4</sup>, and recent reports suggest the potential for increased food fraud in global food supply chains due to the impact of the COVID-19<sup>5</sup>. This could be justified by the fact that many systems responsible for checking, inspecting, and testing supply chains have either been meaningfully scaled back or totally collapsed during the COVID-19 emergency. As a consequence, food companies are oriented to ensure an adequate food supply, rather than guaranteeing that their suppliers are all delivering 100 percent genuine and authentic food. At the same time, consumers increased their need for reassurance regarding food security, by looking for product authenticity signals able to increase confidence in the product they are going to consume and,

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<sup>3</sup> Rapporto ISS COVID-19 n. 17/2020 – Indicazioni ad interim sull’igiene degli alimenti durante l’epidemia da virus SARS-CoV-2.

<sup>4</sup> [https://ec.europa.eu/food/system/files/2020-05/ff\\_ffn\\_annual-report\\_2019.pdf](https://ec.europa.eu/food/system/files/2020-05/ff_ffn_annual-report_2019.pdf)

<sup>5</sup> [https://www.europol.europa.eu/sites/default/files/documents/report\\_covid\\_19\\_-\\_viral\\_marketing\\_counterfeits.pdf](https://www.europol.europa.eu/sites/default/files/documents/report_covid_19_-_viral_marketing_counterfeits.pdf)



as consequence, reduce their food fraud risk perception. Additionally, as a result of the increased confidence in the product considered more authentic, consumers may also be willing to pay more for this product.

In terms of food safety, reassurances on the origin of products, including integrity, credibility, and sustainability, assume considerable importance because they can generate trust and safety in the consumers' perception (Kendall *et al.*, 2019). According to Beverland and Farrelly (2010), consumers show greater sensitivity towards the origin of food products and their authenticity, by assuming them as evaluation criteria that can guide their choices. By ensuring the origin and content of foodstuffs, product authenticity has assumed a fundamental role in the protection of consumer rights and the prevention of fraud (e.g., false descriptions, substitution of ingredients, adulterations, and labeling of the wrong origin – Shears, 2010). As shown by Dourado *et al.* (2019), among the warnings of food fraud carried out between 2014 and 2018 in the EU, it is possible to underline those relating to incorrect labeling and masking of origin. In response to these fraudulent practices, consumers are demonstrating greater sensitivity to the risk of fraud, demanding more and more reassurance about the products they consume. Therefore, in line with this need, the guarantees of product authenticity can lead to eliminating consumers' perception of risk on the quality of foodstuffs, especially in a period with high insecurity and uncertainty as in the case of COVID-19.

Similarly, consumers show a greater propensity towards the evaluation and choice of local and/or regional (including national) products in order to feel reassured concerning control procedures, reliability of the actors involved, and transparency of production and distribution activities. This greater propensity can easily be framed within the phenomenon of ethnocentrism in consumption, according to which consumers show attitudes and behaviors of preference, selection, and purchase towards domestic products and services, considering them superior in terms of quality and distinctive characteristics, compared to imported products and services (Sharma, Shimp & Shin, 1995). According to Sharma, Shimp and Shin (1995), ethnocentrism affects purchase intentions and decisions, as consumers have a positive prejudice towards locally derived products, produced in their Country-of-Origin (COO) and prefer foreign products less. This prejudice can also be seen in the evaluation and willingness to purchase products (Sharma, Shimp & Shin, 1995).

With this perspective, this study aims to analyze the literature on product authenticity and consumers' ethnocentrism to better understand the influence these concepts have on consumer behavior. Although several scientific contributions (e.g., Blazquez-Resino *et al.*, 2021) have examined the concept of consumers' ethnocentrism concerning the concept of COO, the literature

is relatively unexplored on the possible link between the level of consumers' ethnocentrism and the authenticity of the product (for which the COO represents one of the different dimensions identified in the literature) as well as the related effects on consumer behavior. By intending to simultaneously analyze the two concepts in a situation characterized by high uncertainty and insecurity (such as the COVID-19 pandemic), this work provides several contributions to the existing literature on these topics by filling the gap highlighted and suggesting some future research directions.

The work is structured as follows. Paragraphs 2 and 3 reported, respectively, an overview of the literature on the concepts of product authenticity and consumer ethnocentrism. In paragraph 4 the research directions are presented and, finally, the work is concluded.

## 2. An overview of the product authenticity research

The concept of authenticity has been shown to affect people's judgments and behavior across a wide variety of domains (Newman, 2019). According to Boyle (2003), the concept of authenticity includes terms such as ethical, natural, honest, simple, and sustainable. Furthermore, terms such as original, genuine, unique, traditional, and real are used by modern consumers to define authenticity (Muñoz, Wood & Solomon, 2006; Beverland & Farrelly, 2010). Although the existing literature on authenticity highlights the absence of a unique definition, it seems to be a consensus about the explanation of Beverland and Farrelly (2010, p. 839) that claim that *"despite the multiplicity of terms and interpretations applied to authenticity, ultimately what is consistent across the literature is that authenticity encapsulates what is genuine, real, and/or true."*

Numerous scientific contributions focus on the authenticity concept in different consumption contexts, such as beverages (Del Chiappa, Napolitano & Atzeni, 2019), agri-foodstuff (Chousou & Mattas, 2019), and green products (Miniero *et al.*, 2014). These studies provide evidence that perceived authenticity influences consumer evaluations and dispositions (e.g., Beverland & Farrelly, 2010; Sidali & Hemmerling, 2014; Fuchs, Schreier & Van Osselaer, 2015), by describing how consumers can use authenticity cues as risk-relieving strategies in their decision and evaluation processes. Additionally, the signals of authenticity could increase consumer awareness of the product and provide reassurance during the complex selection and purchase activities. In effect, as mentioned authenticity construct involves several meanings and represents an important dimension that consumers use to evaluate products and experiences. According to Newman and Dhar (2014), the concept of authenticity is aimed at capturing dimensions of truth or verification, that is the assessment of whether a product

or experience is “*true with respect to some property or dimension* (p. 372)”. Other authenticity dimensions identified in the literature are, for instance, the product's genuineness, origin, or naturalness (Van Giesen & de Hoogeb, 2019). Camus (2004) identifies three dimensions, which are origin, projection of the consumer in the product, and uniqueness, able to encapsulate the concept of product authenticity concerning an agri-foodstuff.

Authentic products are often perceived as local, regional, and/or traditional (Kadirov, 2015), real, sincere, and genuine (Beverland & Farrelly, 2010; Morhart *et al.*, 2015). For specific products, such as fruits and vegetables, the naturalness dimension of authenticity is crucial underlying environment respect, healthiness, and freshness (Binninger, 2017). Uniqueness is another relevant feature of authentic products, opposite to industrial products sold in massive quantities (Groves, 2001). Foodstuff's authenticity regards genuineness, related to the place of production (Sims, 2009), Country-of-origin (COO – Chousou & Mattas, 2019), product ethnicity (Park, Javalgi & Wachter, 2016), and handmade production process (Fuchs, Schreier & Van Osselaer, 2015). According to Groves (2001) and Sims (2009) authentic product is associated with nutritional value and high-quality assurances and can be communicated through certifications concerning geographical indications and organic production (Spielmann & Charters, 2013), brand name (Groves, 2001), color packaging (Marozzo *et al.*, 2020), and selling price (Fejes & Wilson, 2013).

Previous studies emphasize that food products' authenticity can affect consumers' willingness to pay, by finding a positive impact of authenticity claims on the intention to consume traditional food products (Sidali & Hemmerling, 2014). Authenticity, increasing appeal and value, can influence positively purchase intentions and greater consumers' willingness to pay for food products perceived as authentic (O'Connor, Carroll & Kovács, 2017). In this respect, consumers express willingness to pay a premium price for food products that better meet authenticity requirements (Kendall *et al.*, 2019). Consumers acknowledge the price premiums associated with the purchase of authentic food products and they are willing to accept this expense to ensure the authenticity of products carrying health risks and to limit the problems linked to adulteration and fraud.

According to Carcea *et al.* (2009), product authenticity is relevant in quality control and safety; this is because genuineness is perceived as a significant issue by consumers on an emotional level, since it implies their trust in what they buy and, therefore, in what they eat. Several studies focused on food scandals and fraud have investigated the perception of risks that fraudulent activities declared for the safety of consumers (Charlebois *et al.*, 2016). Indeed, adulteration and fraud are undoubtedly interconnected with the concept of authenticity. By increasing consumer confidence in food products, authenticity can play

a central role in reducing the consumers' risk in consumption (Verbeke & Ward, 2006; Marozzo *et al.*, 2021). The authenticity of foods is not easily observable and verifiable by consumers and, for their evaluations and purchasing choices, they often rely on manufacturers' indications of authenticity (Kendall *et al.*, 2019). These signals, such as risk mitigators (Verbeke & Ward, 2006), can inform the consumers on the authenticity of the products, reducing their uncertainty about the products, increasing the trust component in the purchasing and consumption processes.

### 3. An overview of the consumers' ethnocentrism research

The concept of ethnocentrism is used to identify a series of human behaviors and attitudes based on *"the view of things in which one's own group is the center of everything, and all other are scaled and related with reference to it"* (Sumner, 1906, p. 17). More specifically, such human behaviors and attitudes presuppose that *"each group nourishes its own pride and vanity, boast itself superior"* (Sumner, 1906, p. 17). Starting from this premise, ethnocentrism can easily be configured as one of the most relevant causes from which the development of selective or resistant and discriminatory attitudes and behaviors towards individuals considered external to one's group (Hirschfeld, 1996; Lamont & Molnar, 2002). Additionally, it determines the choice of generating, nurturing, and maintaining collaborative relationships with members within own group (usually identified as in-group) or within groups considered similar (Sharma, Shimp & Shin, 1995) and the propensity to avoid any form of relationship with groups considered external (usually identified as out-group; Giraldi, 2012). Sometimes, in the case of extreme manifestations, ethnocentrism can involve behaviors that are characterized by the presence of feelings based on intolerance, competition, and hatred (Caruana, 2005). By presenting a high heterogeneity and variability from individual to individual, these effects derive from the combination of different causes: endogenous (e.g., cultural openness, conservatism, patriotism, materialism, animosity, cognitive ability of the individual) and exogenous (e.g., cultural and social inputs that may differently affect the individual; Hewstone, Rubin & Willis, 2002). However, the concrete manifestation of ethnocentric tendencies is substantially linked to the perception of some *"more or less observable and relevant determinants for the individual, such for example, language, accent, physical attributes, religion, culture, values, symbols, belonging to a specific geographical place or (...) the objects and products purchased and consumed"* (Giraldi, 2012, p. 128). In this direction, Shimp and Sharma (1987) have examined the phenomenon of ethnocentrism and its implications in the marketing perspective in order to understand and explain the general disposition of consumers towards the selection and consequent

purchase of domestic or foreign-derived products and services, starting from the consideration that prejudices, attitudes, and stereotypes can influence the evaluation of products and services and, consequently, purchasing behavior (Bilkey & Nes, 1982). In fact, ethnocentrism in consumption, considered as a "latent construct" (Pastore & Giraldi, 2012) of the Country-of-Origin, assumes relevance in the analysis and understanding of the COO effect in the purchase and consumption choices (Kilders *et al.*, 2021).

Concerning ethnocentrism in consumption, it should be pointed out that it concerns "*the beliefs held by a consumer about the appropriateness, indeed morality of purchasing foreign-made products*" (Shimp & Sharma, 1987, p. 280), assuming as relevant the individual dimension, the sense of identity and belonging. Numerous scientific contributions have highlighted that the phenomenon of consumer ethnocentrism concerns the general tendency observed in consumer behavior to operate a clear separation between products attributable to their in-group (i.e., usually manufactured and domestic-derived products) and products referable to out-groups. (i.e., foreign-made products). The literature has underlined that such consumer behaviors are justified by aspects both of an affective type (based on experiences, feelings, and personal judgments about certain places), and of a normative nature (dictated by the perception and conviction of procuring damage to own economy as a result of the purchase of foreign-made, non-domestic products) (Bianchi & Mortimer, 2015). Therefore, in the perspective of the ethnocentric consumer, there is an overestimation of products of domestic and local origin, emphasizing their distinctive peculiarities as well as the positive effects on the economy and, on the other hand, an underestimation of foreign products, highlighting defects and gaps. In particular, the ethnocentric consumer sees a moral and/or social obligation in the preference for national products (Fernández-Ferrín *et al.*, 2018) in order to support the national economy, evaluating the selection and purchase of imported products such as wrong, adverse to the domestic economy, capable of triggering, at the aggregate level, perverse mechanisms leading to the loss of jobs, the impoverishment of national companies (especially small and medium-sized ones) and the reduction of the ability to create new wealth (Olsen & Olsson, 2002; Morris & Buller, 2003). In the field of food, some contributions have highlighted that the ethnocentric consumer often shows a propensity towards the purchase of local and/or regional products (Fernández-Ferrín *et al.*, 2018) because they are considered authentic and associated with health benefits due to the safety and sustainability of production processes, also nurturing the belief that the consumption of these products "*generates and supports local employment, which supports local livelihoods, strengthens regional economies and enhances cultural heritage*" (Bianchi & Mortimer, 2015, p. 2286). Indeed, the ethnocentric consumer not only

shows a positive attitude towards Country-of-Origin products (Kilders, Caputo & Liverpool-Tasie, 2021) which influences evaluation and purchase decisions, but above all tends to overestimate their quality, attributes, and nutritional value, considering the aspects of food safety, reliability, the correctness of procedures and transparency of production processes and the production chain, as well as the ability to limit health-related risks (Bernabéu *et al.*, 2020).

To measure the level of ethnocentrism, considered a relevant predictor of consumers' attitudes, perceptions, and purchasing intentions towards domestic products or imported products (Sharma, Shimp & Shin, 1995), the Consumer Ethnocentric Tendencies SCALE (CETSCALE – Shimp & Sharma, 1987) is used. The CETSCALE is configured as a psychometric scale, with a one-dimensional structure, initially composed of 17 items and, subsequently, of 10 items following analysis of reliability, convergent validity, etc. (e.g., Netemeyer, Durvasula & Lichtenstein, 1991; Luque-Martinez & Del Barrio-Garcia, 2000; Ramayah *et al.*, 2011). More specifically, the CETSCALE allows the measurement of the ethnocentric vision of the subjects belonging to a specific group towards foreign or external products. Although it was developed to measure the ethnocentrism of American consumers, the literature has emphasized that the CETSCALE can be used in different geographic areas. Even though most of the research on consumer ethnocentrism has been focused on Western countries (i.e., with advanced economies), some scientific contributions have focused on both the countries of Eastern Europe, South Korea, and Japan (e.g., Hult & Keillor, 1994) and the developing countries (e.g., Durvasula, Andrews & Netemeyer, 1997), by showing a considerable preference for imported products (Pastore & Giraldi, 2012). Moreover, the literature has emphasized that there is a positive relationship between the level of ethnocentrism and consumer judgments on domestic products and the willingness to buy the same products (Guo & Zhou, 2017).

#### **4. Implications of product authenticity and ethnocentrism on consumer behavior during periods of high insecurity such as COVID-19: research agenda**

In a period of high uncertainty and insecurity like the one we are experiencing during the COVID-19 pandemic, in which we found ourselves having to face a great global crisis both in terms of public health and economically, the product authenticity and consumers' ethnocentrism could represent useful concepts for understanding consumer behavior as a response to such uncertainties and insecurities. As seen above, the authenticity of the product and the ethnocentrism of consumers can be seen as possible responses

to consumers' demand for food safety, and this could be even more amplified during the pandemic period.

In the perspective of the economic crisis triggered by the COVID-19 pandemic, the level of consumer ethnocentrism could assume considerable importance. A high level of ethnocentrism, making the consumer feel that moral obligation to buy local/regional/national products in order not to affect the economic aspect of own COO, could further influence consumer behavior by emphasizing, even more, the effects deriving from the construct. In the perspective of the public health crisis caused by the COVID-19 pandemic, however, the perception of product authenticity could assume considerable importance. The authenticity of food products, often revised in local/regional/national products, recalling the concept of COO, could be perceived as a "risk reliever" in a period characterized by high uncertainty and, consequently, positively influence consumer behavior by emphasizing, even more, the effects deriving from the construct.

As highlighted above, the literature has shown evidence of the effect of the product's authenticity on the intention to consume traditional food products (Sidali & Hemmerling, 2014). The authenticity of foodstuffs, in fact, by emphasizing aspects linked to the genuineness, originality, traditionality of the product and production methods, could represent a reassurance for the consumer (especially during a pandemic period in which greater tranquility and greater security are desired) which may show a greater willingness to purchase products with these characteristics, such as products from own COO. In this perspective, the level of ethnocentrism of the consumer could play the *moderator* role of the relationship between the product authenticity and the willingness to buy authentic products. Specifically, consumers with a high level of ethnocentrism, showing a greater propensity to purchase and consume products of domestic and local origin, may be more willing to purchase food products that are considered authentic.

Finally, the perceived authenticity of the product, increasing its appeal and value, as well as positively influencing purchase intentions, can also stimulate a greater consumer's willingness to pay for food products perceived as authentic (O'Connor, Carroll & Kovács, 2017). Again, the consumer's level of ethnocentrism could play the *moderator* role of the relationship between the product authenticity and the consumers' willingness to pay for products perceived as authentic. Specifically, consumers with a high level of ethnocentrism, showing a propensity towards purchasing local/regional/national products (Fernández-Ferrín *et al.*, 2018) and nurturing the belief that the consumption of these products generates economic support at the level local (Bianchi & Mortimer, 2015) may be more willing to pay for food that is considered authentic also to contribute to the local economy.

With this in mind, the study advances the following future research directions:

- 1) The authenticity of the product and the level of ethnocentrism of the consumer could influence consumer behavior.
- 2) The positive effect of product authenticity on willingness to buy is greater (vs. less) for consumers with a high (vs. low) level of ethnocentrism.
- 3) The positive effect of product authenticity on consumers' willingness to pay is greater (vs. less) for consumers with a high (vs. low) level of ethnocentrism.

## 5. Conclusion

This research aimed to examine the literature on the topics of product authenticity and consumer ethnocentrism in order to deepen the influence that these concepts have on consumer behavior in a period of high uncertainty and insecurity such as that determined by the COVID-19 pandemic. In fact, consumers feel the need to limit the risks related to health and to receive reassurance on the healthiness and reliability of the products, as well as on the transparency and correctness of the production and distribution procedures, expressing attitudes positive towards authentic, original, local products.

Starting with the common concept of the Country-of-Origin, the present study examined the possible connection between the concept of consumers' ethnocentrism and product authenticity and the related effects on consumer behavior, filling the gap existing in management literature that continues to analyze the two concepts separately within the broader line of COO, leaving their possible relationships and implications on consumer purchasing behavior scarcely explored.

The research offers several theoretical implications, highlighting the almost inseparable linkage between consumer ethnocentrism and product authenticity, offering the basis for a contextual analysis of the two concepts in management studies, and putting forward some useful future research developments. The analysis lens, based on the integration of the two concepts, pushes us to pay attention to the links and relationships that exist between ethnocentrism and authenticity, especially in the context of food increasingly characterized by dynamics in continuous evolution due to transformations related to the aware and responsible question. On the other hand, the link between consumers' ethnocentrism and authenticity provides insights both in the contexts of willingness to buy and to pay. Concerning willingness to buy, if consumers with a high level of ethnocentrism show a greater propensity to purchase products of domestic origin, they may be more willing to buy food products



considered authentic, with the intention of feeling safer and more aware of what they consume. Concerning willingness to pay, on the other hand, if consumers with a high level of ethnocentrism show a greater willingness to pay for internally derived products, they could be more willing to pay for food products that are considered authentic, in order to actively contribute to the economy of the reference area.

From a managerial point of view, this work highlights that the understanding of some factors that influence purchasing and consumption behavior becomes necessary for a company that intends to define adequate strategies relating to its value proposition in periods of high uncertainty deriving from unexpected events, such as the COVID-19 pandemic, and which manifest a significant impact on consumer decision-making processes. In particular, the accurate knowledge of the consumer's levels of ethnocentrism could be a valid support in the selection of strategies including the choice of making explicit reference to the geographical places of origin of the products in order to reassure the consumer, to reduce the perception of the related risk to safety and health, and to develop products that meet the needs of consumers.

The originality of the study lies in the attempt to integrate the concepts of product authenticity and ethnocentrism in consumption to stimulate qualitative and quantitative research (for example, the validation of CETSCALE in times of crisis) aimed not only at a better understanding of issues mentioned above, but to support companies in the selection and implementation of strategies that allow them to maintain their development paths even in highly uncertain and complex periods.

Like any other study, this is not immune from limitations, stimulating further investigation on the topic. Since the conceptual nature of the work did not allow to report empirical evidence but has allowed the proposal of a research agenda, future research may empirically investigate the relationship between product authenticity and consumers' ethnocentrism and the effects on consumers' behavior through qualitative (in-deep interviews) and quantitative (survey ad hoc) researches.

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# **ENERGY EFFICIENCY AS AN ELEMENT OF SUSTAINABLE DEVELOPMENT ON THE LOCAL RENTAL HOUSING MARKET ACCORDING TO PROPERTY MANAGERS OPINIONS**

## **1. Introduction**

When making investment decisions on the housing rental market, investors more often than a few years ago recognize the need for ecological and energy-efficient solutions in the offered premises. What is also important for them are amenities that increase comfort, affect the level of safety of use and modernity of both materials and equipment. All these elements affect the level of possible rent, operating costs and the final assessment of the profitability of lease.

The aim of the paper is to assess the level of awareness of apartment's owners for rent in the field of application of energy-saving solutions in the offered premises.

The achievement of the goal was possible thanks to the analysis of primary data obtained in the authors' own research. The survey was an expert and qualitative research. It covered experts (property managers) who also operate in the field of leasing on the residential market, often managing entire portfolios of apartments for rent on the local real estate market in the City of Poznań. The subject of the research was: the willingness of owners to incur additional costs for energy saving solutions and equipment in apartments, the awareness of the effects of introducing energy saving solutions and their type.

## 2. Rental housing market as an area of investment and management activities

Housing rental market is a specific segment of real estate market, combining features of residential and commercial market. On the one hand, we are dealing with housing as a good satisfying basic human needs (especially important for a group of people for whom market rent is the only possibility of residence), on the other hand, a form of capital investment, generating streams of stable income (for various groups of investors acquiring apartments for rent) (Dziworska, 2017, Rubaszek, 2019). The number of studies on the rental housing market and its importance for e.g. the economy is relatively small, especially in comparison with the market of apartments for sale (Czerniak, Rubaszek 2018, Regulska, 2018, Foryś, 2016). Moreover, the apartment rental market is itself a heterogeneous market. This is because there are different investors (individual and institutional), different buyers (individual and collective tenants), different contracts are accepted (term, perpetual), different types of real estate are the subject of transactions. Thus, an unambiguous definition of the rental market undoubtedly raises problems.

To begin with, it is useful to define the term rental housing. According to the World Bank definition, a “rental dwelling” is considered to be a dwelling owned by someone other than the resident, with the resident being required to pay periodic rent to the landlord for the opportunity to use the property. So, based on a formal or informal agreement between the tenant and the landlord, a predetermined price is paid to rent a dwelling for a specific period of time (Peppercorn, Taffin, 2013). Based also on definitions of the real estate market itself (Gawron 2011, Kucharska-Stasiak, 2005), the rental market can be defined as:

- a well-defined spatial area in which the demand for rental housing meets the supply of housing for tenants, shaping the rent and the opportunity for transactions,
- the set of conditions in which the transfer of rights to real estate takes place and rental contracts are concluded, creating mutual rights and obligations, for landlords and tenants,
- the totality of market, legal, and social conditions in which mutual expectations and preferences are revealed, based on which rental agreements are concluded between landlords and tenants.

The development of the real estate rental market in Poland is largely stimulated by the activity of investors, among which private investors (households) still dominate (Groeger, 2019). However, in recent years there has been an increase in the participation of institutional investors (investment funds, banks, insurance



companies, REITs – Real Estate Investment Trust) in this market. This is the effect of both changes in legal regulations (e.g. facilitation of eviction procedures, introduction of occasional and institutional lease) and favorable economic conditions. Due to the high capital intensity of real estate investments, institutional investors have a decisive influence on the market. This is because the activity of institutional investors allows them to accumulate small financial resources from small individual investors (mainly in the form of savings) and transfer the accumulated resources towards the real estate market (Mazurczak, 2018). It is projected that building for rent will continue to remain an important direction in the construction and real estate sector in the coming years (Valls, 2020).

Unfortunately, the institutionalization and conversion of housing into financial instruments has a particularly negative impact on low-income households, dependent on the Private Rented Sector (PRS). Global investment funds, including REITs, that build their portfolios based on the housing market in the Private Rented Sector are a significant mechanism for increasing housing unaffordability. Combined with a lack of social investment, rising property prices, and rising inflation, they can negatively impact the housing market. On the other hand, the increase in the stock of rental housing and the emergence of large institutional players may help to change this market, especially in the introduction of standards related to sustainability, ecology and low energy demand of buildings. It is institutional investors who are increasingly guided by the ESG<sup>1</sup> philosophy in their activities, thus setting new standards in this area.

The interest in ESG issues shown by investors today fills a gap where more (long-term) value is attributed to real estate assets. The importance of sustainability for real estate investors is undoubtedly growing. The European Association for Investors in Non-Listed Real Estate (INREV), has developed sustainability guidelines to align with the needs of investors (INREV, 2019). Another confirmation is the increased interest in the GRESB 2020 survey, which includes an ESG use indicator and reporting system for listed real estate companies, for private real estate funds, developers, and investors who invest directly in real estate. These examples show that ESG standards will increasingly shape and influence the value of real estate and thus investments in this sector (Cunha, Belchior Coimbra, 2021). From the point of view of individual investors, it is also an impetus for a change in the philosophy of how rental housing is perceived, especially because of its facilities.

From the perspective of an individual landlord, housing is primarily intended to provide him with a return on his costs and an income from the investment he has

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<sup>1</sup> “ESG” is a commonly used acronym for environmental, social and governance, under which environmental factors, social responsibility and corporate governance are included.

made. The investor expects both a return of capital and the generation of a surplus over the funds he invested. The effectiveness of an investment can be measured by various metrics, but in the context of renting an apartment, the financial aspect is of primary importance. The economic conditions in which the property owner operates will affect the measure of investment efficiency. The number of units available for rent, rental rates, and tenant requirements will affect the interest in the offer. Also the quality of rental service will be important in case of high competition in the market. Conditions connected with the building already at the stage of construction will in turn influence the future rent of premises – location of the building, efficiency of space development, quality of the building and applied materials and technologies influencing future costs of property maintenance will be subject to tenants' evaluation and condition their interest in the offer.

Some of the rental housing stock remains under the management of landlords who manage on their own without the need for a specialist provider, but although it might seem that rental management is straightforward, landlords often encounter problems that they have not previously been aware of. As a result, both groups investing in apartments are increasingly using specialist services to manage packages of apartments for rent. This is also due to the lack of time, the desire to ensure a regular income in accordance with the deadline contained in the contract, the lack of need to take care of formalities with the tenant or control payments and the condition of the apartment. The rent from an apartment rented by individuals is usually their additional income, and they have limited knowledge of the laws and rules related to the drafting of leases. They also often live in a different city than the one where the property is rented, which makes them prefer to use a property manager.

### **3. Energy saving solutions used on the housing market**

The residential market is one of the main segments of the real estate sector, which is subject to significant changes in the area of sustainable development, in particular implementation of solutions reducing energy consumption of buildings. So far, energy-efficient solutions have dominated mainly in the office sector. In residential projects they were used rarely, mainly by individual investors, who wanted to introduce savings to their household budgets.

The realization of the Paris Agreement<sup>2</sup>, which entered into force in 2016, is possible when the global average energy intensity of buildings per square meter

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<sup>2</sup> Paris Agreement – the agreement crowning the 21st United Nations Conference on Climate Change. The agreement requires all countries to present long-term scenarios for reducing greenhouse gas emissions by 2020. The agreement came into force on November 4, 2016

should decrease by at least 30% by 2030 (GlobalABC, 2018). This is a huge undertaking that mobilizes all EU member states to make a number of changes of legislative nature. However, it is not only regulations that motivate the industry to change its strategy towards more sustainable ventures. A 2019 survey by UNEP FI, Brentall Kennedy & REALPAC of 44 fund management institutions, asset management units and real estate investment trusts (REITs), which collectively managed over \$1 trillion in assets at the time, found that 83% of respondents had experienced increased interest from investors in their company's sustainability performance. Since then, trends in this area have been steadily gaining momentum. Therefore, it can be expected that the number of products promoting ESG aspects or environmentally friendly products will increase and sustainable strategies will become even more common, while conventional funds will come under pressure as green funds become more widely offered (Krasoń, 2020).

The institutionalization and commercialization of the residential rental market, also observed in Poland, may significantly influence the approach of individual investors to the energy quality of their rental units. Unfortunately, there is a lack of available research on both the attitude of owners of apartments for rent to the use of energy saving solutions and equipment inside the premises, as well as on the preferences of tenants in this area. The Institute of Environmental Economics (IEŚ), which is a non-governmental organization specializing in the area of environmental protection, energy efficiency and climate policy, has been conducting systematic research on the modernization needs of single-family residential properties since 2015, but it does not include the rental market.

First certified housing estates have already appeared on the market, which put great emphasis on pro-ecological systems. Developers building both for sale and rent have noticed that this direction in the long run may turn out to be very profitable – financially and in terms of image. Among the solutions that are becoming increasingly popular in the housing market are undoubtedly systems that allow for the use of renewable energy sources, such as photovoltaic installations. Moreover, an important area of application of modern ecological solutions are retention aspects, including green and retention roofs, rainwater collection systems in underground retention tanks or creation of rain gardens. Solutions reducing the energy demand of buildings are also largely concerned with reducing the heating of buildings, where solutions are introduced using the natural qualities of plants (green roofs and walls of residential buildings), appropriate window structures and the increasingly popular recuperation system. However, all these measures are designed and implemented in relation to multi-family residential buildings as a whole, and individual apartment owner have no influence on decisions taken in this regard.

A sustainable building should therefore incorporate modern solutions in 5 key investment areas:

- reducing energy consumption by using renewable energy installations (e.g. photovoltaics), heat pumps, materials with high thermal insulation values, thermal walls, energy-efficient LED lighting outside and inside the building, automatic control of energy consumption (technologies used in the so-called smart home);
- communication and transport solutions in the scope of, among others, access to mass transport, bicycle infrastructure, application of permeable surfaces, charging stations for electric cars;
- water, using efficient water installation devices, retention devices, rain gardens, green roofs;
- waste, using recycled materials, managing construction materials, using the BIM construction management system, composting organic materials;
- green areas, designing green roofs, green walls, green common spaces, small eco architecture, planting climbers, ground cover plants, meadows (Fig. 1).

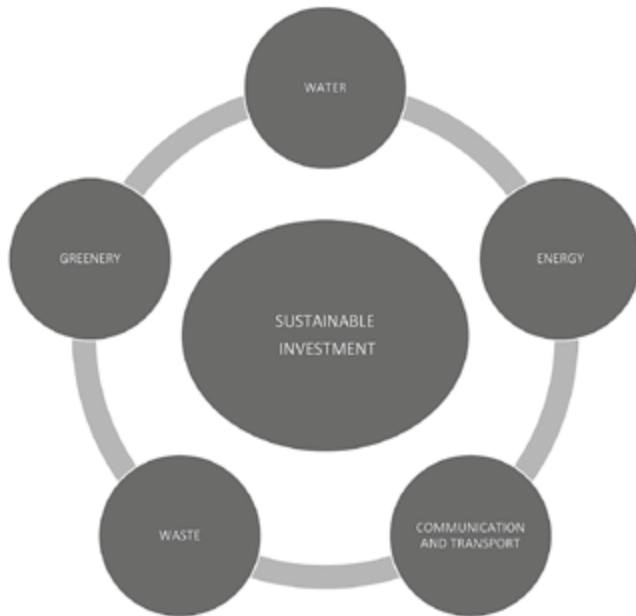


Figure 1: Elements of sustainable real estate investment

Source: Own study

Changes in environmentally friendly and energy-efficient solutions in the housing market in Poland are primarily determined by the Act of 29 August 2014 on the energy performance of buildings. According to this law, owners

of properties that are subject to sale or lease are required to present an energy performance certificate for the premises. The tenant or buyer may require such a certificate, for the delivery of which the owner has two months of days from the delivery of a written request. The energy performance certificate issued for the building or apartment will be valid for 10 years. However, it may be necessary to renew it earlier if renovation of the installation is carried out, which may change the energy performance of the building or premises. Poland has a national plan aimed at increasing the number of buildings with low energy consumption, which is an annex to the Resolution of the Council of Ministers of 22 June 2015, issued on the basis of the authorization set out in Article 39(3) of the Energy Performance of Buildings Act, and at the same time fulfils the obligation under Article 9(1) of Directive 2010/31/EU of the European Parliament and of the Council of 19 May 2010 on the energy performance of buildings, according to which Member States shall develop national plans aimed at increasing the number of buildings with nearly zero energy consumption.

Pro-environmental EU regulations governing the norms of consumption of energy obtained from non-renewable sources are also getting stricter. Not only for industry, but also for individual consumers. In 2010, the European Parliament adopted a directive that will gradually lead to newly constructed residential buildings having zero energy demand. In January 2021, the third stage of its implementation came into force – energy standard WT 2021, and with it further tightening of energy requirements for construction.

The construction sector is indicated as one in which there are many opportunities to take economically viable actions aimed at reducing environmental degradation, including the reduction of harmful emissions to the atmosphere, increasing the savings of raw materials, conservation of natural resources and biodiversity. At the same time, these actions can bring about an increase in innovation, implementation of new technologies, reduction of energy intensity, generation of new jobs, and as a result, an increase in the competitiveness of the economy, wealth of citizens and comfort of living. The effectiveness of these actions in the housing market, on the other hand, depends largely on the change of business philosophy both at the level of the developer, which is a supplier of apartments, the buyer (for own needs and for rent) and the final user (owner or tenant).

#### **4. Energy-efficient solutions in apartments for rent in the opinion of property managers on the local housing market in Poznań**

The use of energy-efficient solutions in rental housing has been evaluated on the basis of a survey of rental managers in the residential market. The survey was conducted in Q2 and Q3 of 2021 and included experts (property managers)

who operate in the rental area of the residential market, often managing entire portfolios of apartments for rent. The professional group covered by the survey is characterized by a certain specificity of activity. This manifests itself mainly in limited opportunities for personal meetings due to the mobile nature of the manager's work and irregular working hours. In addition, the moment of surveying is a period of restrictions on contacts between people as a result of the COVID-19 pandemic. These factors determined the method of conducting the research procedure, including in particular data collection and the choice of the research tool. Due to the difficulty of using a face-to-face interview questionnaire, an online survey questionnaire was decided upon.

The study was an exploratory and qualitative research. The sampling was purposive and the online survey questionnaire was sent to 60 entities. Feedback was received from 22 entities, which is a level of nearly 37% of all respondents. It is worth noting that the timing of the survey fell during a period when some managers suspended their activities due to the rental market situation caused by the COVID-19 pandemic, which limited the number of responses.

The largest group of entities surveyed are managers who report market experience of more than 15 years and less than 5 years (7 respondents in each group). The remaining managers (8 respondents) are entities which operate in the market for 6–15 years. More than half of the managers surveyed are active in Poznań and its vicinity (13 respondents), and 8 respondents declared their activity in Poznań itself. The survey included one entity declaring an activity wider than the area of the province. 10 respondents declared that the management of tenancy is their only area of activity. For 12 others, however, it was part of a broader offer of property management. This indicates a relatively high level of specialization of managers, who have recognized the potential for business development in the service of the rental market.

The managers of rental apartments were asked about the owners' willingness to incur additional costs for energy efficient solutions and appliances in the apartments and about the awareness of the effects of introducing such energy saving solutions. As shown in Figure 2, nearly 60% of the respondents indicated that landlords with rental apartments are aware of the effects of using simple solutions in the apartment to reduce energy consumption. On the other hand, a smaller percentage, as only just over 40%, is willing to incur the additional costs associated with this.

This may be largely due to the caution of investors who do not want to take the additional risk of having to spend more than necessary. It is worth noting, as was also pointed out earlier, that the survey was conducted during a pandemic, the effects of which affected the rental market to the greatest extent. Large losses resulting from unrented premises and uncertain future situation on the market undoubtedly effectively inhibited any additional investments.

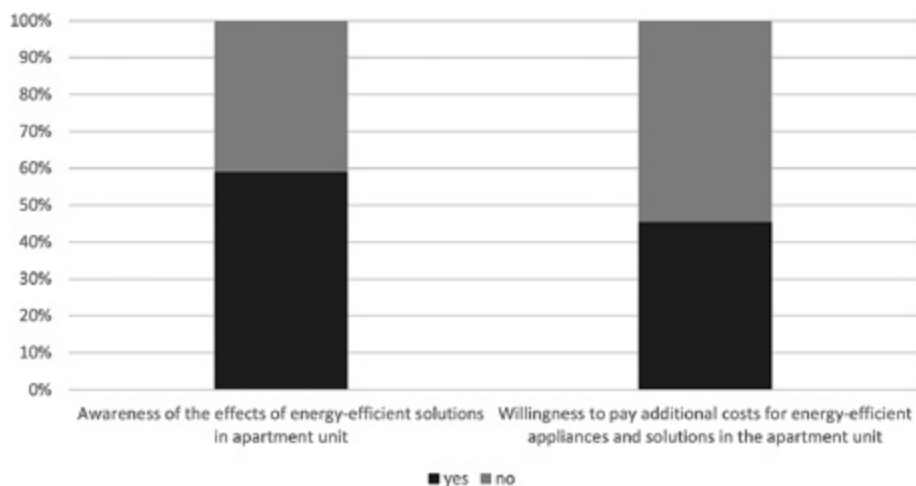


Figure 2: Rental homeowners vs. use of energy efficient appliances and solutions in the apartment unit  
 Source: own study based on survey data

The relatively small percentage of owners who declare their willingness to equip their apartment with energy efficient appliances may also be a result of the rather fragmented ownership structure of the managed apartment packages. According to the survey, the majority of managed leases include units owned by owners with no more than 5 units. Nearly one-third of the respondents indicated that they accounted for between 81% and 100% of the package under management. The second group of owners, accounting for a large share of the package of serviced premises are owners with more than 20 premises.

In contrast, 8 out of 22 managers reported that landlords with between 6 and 10 units accounted for up to 20% of the share of packages served. At the average level of participation in the activity of lease managers are owners with between 10 and 20 premises (Figure 3). In total, the stock managed by the surveyed group consisted of nearly 1500 residential units for rent in Poznań. The size of the bundle of apartments owned by a single entity may undoubtedly determine the propensity to incur additional costs associated with equipping the premises with energy saving devices and installations, which is an area for further research.

Managers were also asked what energy-saving solutions and how often they are used in the rental housing packages they operate, where 5 points meant very often, 4 points were devices occurring frequently, 3 points rarely, 2 points were devices used very rarely, while 1 point was synonymous with not using a particular solution.

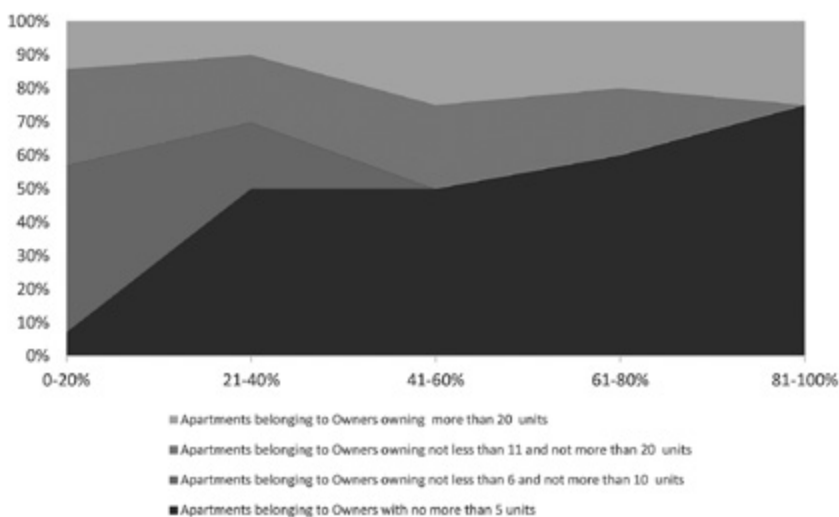


Figure 3: Ownership structure of the apartments under management

Source: own study based on survey data

The most common (Figure 4) energy saving solutions in apartments for rent included those related to limiting water consumption, such as a shower in the bathroom instead of a bathtub (4.09 points) and equipping the kitchen with a dishwasher (3.77 points). Among the solutions indicated as important and frequently used was LED lighting, which displaces standard light sources (3.77 points). Outside the home, LED lighting is used both indoors and outdoors – in exposing and highlighting buildings or surrounding areas, so it is slowly becoming a standard, allowing for significant reductions in electricity consumption charges. Slightly lower, at the level of 3.68 points, was the rating given by managers for the use of highly energy-efficient household appliances and consumer electronics in apartments. The least used, in the opinion of the property managers, were aerators – a system installed at the end of a spout, tap or shower, aerating the water while reducing its consumption (2.64 points). This is a relatively common solution and such a low level of indications may result from incomplete awareness of the respondents.

Studies of the rental market in Poland clearly show that the largest share of the rental stock is constituted by apartments in the basic standard (62%), followed by higher standard (32%). As can be guessed, the remaining share concerns apartments of high or very high standard, which means that luxury rentals constitute a marginal segment of the market (Bojęć, Chimczak, Milewska-Wilk, Kowalska, Różewicz, 2020).



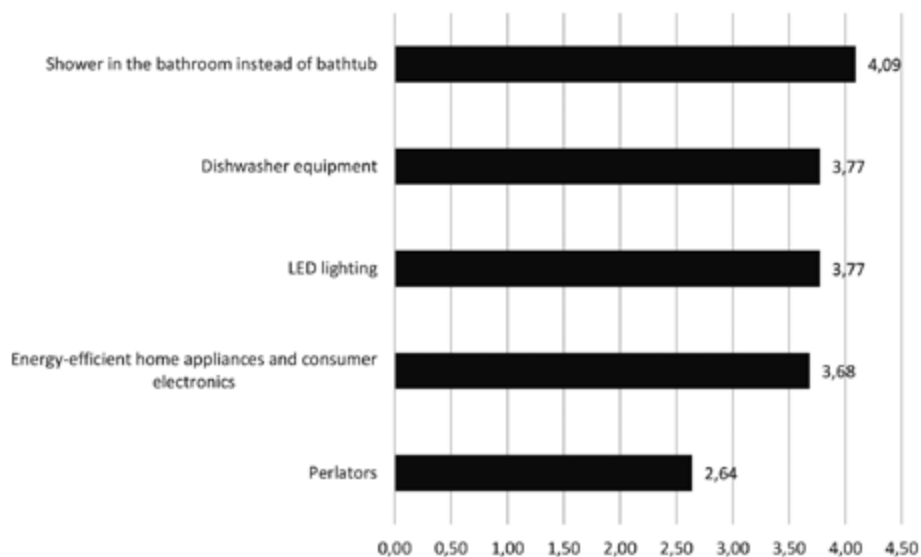


Figure 4: Energy-saving solutions used in apartments for rent

Source: own study based on survey data

Apartments for rent, therefore, in the vast majority are units characterized by average quality of finishes and equipment, and therefore more advanced technologies, such as smart home, are not encountered in this segment. Basic energy-saving and ecological solutions are found only in areas related to water or electricity savings. Detailed responses in terms of the solutions used in the apartments themselves are presented in Table 1.

Table 1: Energy saving solutions used in apartments for rent

specification	very often	often	rarely	very rarely	never
Periators	3	6	2	2	9
Household appliances and consumer electronics	8	6	4	1	3
LED lighting	6	10	2	3	1
Shower in the bathroom instead of bathtub	7	12	2	0	1
Dishwasher equipment	8	6	4	3	1

Source: own study based on survey data

The survey did not include the use of thermo-modernisation building solutions, such as window replacement, or investments related to renewable energy sources, such as the installation of photovoltaic panels, due to the fact that these are actions generally undertaken as part of an entire building, rather than an individual apartment owner.

## 5. Conclusion

The need to save resources, changing legal regulations, and efforts to minimize building operating costs are forcing city dwellers to use cost-saving technologies. Surveys conducted among managers dealing with lease management allowed to draw relatively unoptimistic conclusions. Based on the survey, it can be concluded that both the awareness of owners of apartments for rent and their willingness to incur additional costs associated with energy efficiency of the apartment is at a relatively low level. Moreover, it depends on the scale of the investment (number of apartments in the package). Solutions used in rental units are limited to basic appliances.

The presented results concern the local real estate market in the City of Poznań. The adopted spatial scope results from the specificity of this research area. And although there is no substantive basis for larger generalizations, taking into account the size of the market in Poznań, it can be assumed that in other large Polish cities the behavior of investors is similar.

Studies on the housing rental market may be of various character and carried out in various perspectives and scales. Bearing in mind that in Polish conditions this is still a relatively poorly recognized area, it seems that each subsequent survey, bringing additional knowledge, is an attempt to fulfill information needs. It is all the more important because more and more often and boldly spoken, there is a need to create a serious segment of apartments for rent, which could effectively meet the housing needs of the society and be an alternative to the market of purchasing apartments.

The results of the research can be used in the activities of individual investors in the rental market and among managers who have rental management in their offer.

Undoubtedly, however, there is a need for an informed discussion on both academic and practical grounds regarding the challenges and possible directional solutions for energy efficiency of rental housing in a changing political, economic and legal environment.

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**PART III** **CONTEMPORARY CHALLENGES**  
**OF ENTERPRISE MANAGEMENT**



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# HUMAN RESOURCES MANAGEMENT STYLES IN THE PEOPLE'S REPUBLIC OF CHINA

## 1. Introduction

On the basis of direct observations made in China in the years 2009–2021, the author has noticed successive changes in the Chinese society affecting the methods and management of human resources. Along with the progressing processes of globalization and enrichment of the society, there has been a further shift in the centre of gravity from the society's focus on Confucian values towards materialism and capitalism. This is particularly the case in thriving metropolises such as Shanghai, Shenzhen, Guangzhou, Tianjin and Beijing, where, for example, in some places, when paying with paper money rather than with popular smartphone apps such as Alipay or WeChat, the payer is met with a surprised look from the seller. The younger generation of the Chinese is strongly preoccupied with meeting the economic challenges posed by an increasingly demanding reality, education, career development and their own ambitions. As some Chinese managers point out, raising young workers' expectations of material success is an effective way to motivate them to work (Copp, 2021). The rush for development seems to be taking place at the expense of previously cultivated customs, family ties and leisure time. There is an increasing focus on the self, and more importance is being attached to appearance, attractiveness, modernity, etc. than was the case a decade ago. Despite the changes made in the "one-child policy" in 2013, 2016 and 2021 (Population..., 12.03.2021), the Chinese society is ageing (Innovation and..., 12.05.2021, Third is..., June 5th-11th 2021), which has an impact on the labour market. It can be predicted that the legal retirement age will be raised slightly in the coming years. Currently, men retire in China at the age of 60, women at 55, and manual workers at 50. Changes

to the retirement age have been discussed in China for more than a decade. There is significant opposition to raising the retirement age in China. On the one hand, the aging population poses a threat to the replacement of the workforce (China Daily, 12.03.2021). On the other hand, a too far-reaching change in the retirement age would reduce the availability of jobs and pose a threat of growing unemployment. (China raise..., 2021).

The labour market is also significantly influenced by rapid urbanization and migration processes. For example, the population of Shanghai in 2020 increased by 8% to 24.7 million, compared to 2010 (China raise..., 2021). There is also a noticeable change among the Chinese, especially the younger generation, in the perception of foreigners, including those living in China. It is noticeable that the Chinese are aware of the growing power of their country. Undoubtedly, the perception of foreigners is also influenced by the ongoing political and economic changes that affect the number and structure of foreigners living in China.

The purpose of the article is to analyse human resource management styles in China and to present the characteristics of human resources in China. A hypothesis is put forward that along with dynamic social changes there is a parallel shift of the centre of gravity in management styles and a gradual departure from the patriarchal model of management. The author used the following research methods: direct observation method, literature analysis method, document examination method.

## **2. The role of education in shaping human resources**

In undertaking an analysis of human resources in the PRC, it is necessary to look at the education system in China. As a rule, kindergarten covers children between the ages of 3 and 6. According to Article 5 of the Compulsory Education Law of the People's Republic of China 12 April 1986, children attend primary school when they reach the age of 6 (Compulsory Education Law of the Public Republic of China, 12.04.1986 ), as stipulated in Article 5 of this Law. As indicated in Article 2 and Article 9 of this Law, free education and compulsory education in China is for 9 years. Children attend primary school for the first 6 years and secondary school for the next 3 years. According to Article 7 of the aforementioned Law, secondary school, similarly to primary school, educates young people for 6 years and is divided into first and second cycle secondary school. The first level secondary school educates children for 3 years. Then young people continue their education for another 3 years. Secondary schools are divided into general education schools and specialized schools. In the Chinese society, which is oriented towards maintaining harmony in a group, behaviour characterised by controlling emotions is preferred. It is important to take into



account the group interest, especially the interest of existing defined groups, such as a group of friends, employees of a particular company, etc. Research shows that Chinese children are less expressive of emotionality than children raised in the Western culture (Bond, 2010). According to the author of this book, who had the opportunity to spend many years in China, the sometimes slightly lowered emotional expression of Chinese children, in comparison to children from the Western culture area, is often noticed in situations where excessive emotional expression is not supported by, for example, their parents.

In recent years, China has seen significant development in the field of higher education. According to a census conducted in China, 218 million Chinese had a university degree in 2020, which is an increase of nearly 100% compared to 2010. For example, in Shanghai, in 2020, there were 34,873 people with a university degree per 100,000 inhabitants. In comparison, in 2010 there were only 21,893 people with a degree per 100,000 inhabitants (Shanghai's population..., 19.05.2021). Year after year, China also has more and more graduates in the so-called STEM fields, i.e. Science, Technology, Engineering, Mathematics. Approximately 40% of China's 1.6 million graduates in 2020 graduated from college degree courses in these fields. In the U.S., there were 5 times fewer graduates in these fields, respectively (China's census..., 1<sup>st</sup> May 15<sup>th</sup>-May 21<sup>st</sup>). When comparing these figures, it is important to take into account the differences in the populations of the two countries.

### **3. The role of culture in shaping human resources**

The availability of capital, mass production and resources are the driving forces behind the development of the China. However, an important factor of growth is the still cultivated attachment to culture and tradition. One of the reasons for the collapse of various superpowers was the departure from values, traditions and culture. Among other things, attachment of Chinese society to culture and tradition allowed China to survive for thousands of years and also in the 21st century, which according to the author of the work, constitutes the strength of the state. In the author's opinion, a gradual departure from its roots may, in the future, contribute to weakening of the economic growth. After many years of following the latest global trends, the desire to strengthen tradition and culture is noticeable. For example, the works of Confucius are returning to schools, and starting from 2014 Confucius' poems are included in the program of university entrance exams (Traditional education..., 22-28.05.2021) Despite the changes taking place in the Chinese society due to broad development, the cultivation of traditional Chinese culture is still visible and promoted. In PRC, practically from kindergarten to university, knowledge of the Chinese culture is

transmitted in education. In 2021, the author had the opportunity to observe the end of the year in one of the Chinese kindergartens in Shanghai, where some performances with the participation of children made strong references to historical and cultural events. In China, respect for culture and the state is built in young people from an early age. There are many TV series, historical films and programmes promoting the Chinese culture. In 2000, there were about 1,200 museums in China. According to the data for the end of 2020, the number of museums increased by 500% in comparison with the year 2000 (Museums..., 12–18.06.2021). Respect for tradition and culture, however, is particularly evident in the behaviour of the older generation of Chinese. The younger generations seem to follow the path of materialism to a greater extent. Traditional elements of Chinese psychology embodied in Confucianism, Taoism and Buddhism point to the need to control desire and transform needs to act in accordance with human nature. Negative experiences in traditional Chinese philosophy are natural and necessary in forming proper human attitudes. Man should adapt to the changing environment and circumstances and accept them calmly. Only in this way will the man be able to influence and shape them. According to Chinese doctrine, the best way to reduce anxiety and stress is the aforementioned transformation of one's own needs and expectations in the right direction. On the other hand, the ever-increasing possibilities of using the money that we earn nowadays generate new needs. Widespread mass media advertising, described by some as aggressive, generates needs and encourages their immediate fulfilment, which is not in line with the traditional teachings of Chinese psychology (Bond, 2010). The fact is that the Chinese society has traditionally recognized savings as a value, characterized by an aversion to credit. However, progressive consumerism has significantly shot up the credit boom in the last decade. These developments also reflect the economic progress of the PRC and the implementation of the plans of the last decade to develop the internal market. These processes are influencing the progressive change of management style in China.

#### **4. Analysis of human resources in the implementation of the management function**

In the management of enterprises, including human resource management in China, one can distinguish classical management functions, such as: planning, organizing, motivating and controlling. Planning should take into account the defined objectives. In China there are economic plans at the state level, the so-called 5-year plans. There are also plans for individual provinces and companies. It is important to implement the plan and to be responsible for its implementation. For example, a Chinese marine shipping company, where

the author interviewed managers, develops annual plans as well as five-year plans. The company's managers repeatedly emphasized that planning is crucial in achieving management objectives (Copp, 2021). Planning involves the need to consider the necessary resources. Important elements of this phase are recruiting team members and assigning them the activities and resources needed to implement the plan, as well as organizing the structure of the company or institution to ensure that the objectives are met. In China, many professional topics are often discussed in group meetings. The author of this paper has observed that in many Chinese companies, at least once a week, the management holds a meeting with the directors of each department, where the objectives and their implementation are discussed.

The plan implementation phase is often the most important in the whole management process. The execution of the plan involves applying the actions and measures in the manner provided for in the plan. It is very important that the team understands the goals and follows them, and that the team is appropriately motivated. In China motivation by values still plays a significant role, but as mentioned above, recent economic issues are coming to the fore. Progressive globalization and materialism make salaries and bonuses a very important factor in motivating a Chinese worker. Based on observations, the author concludes that Chinese companies very often use a performance-based bonus system. As motivating elements they also provide career advancement paths for outstanding employees, including opportunities to expand their responsibilities and competences. As pointed out by some Chinese managers, the lack of transparency and fair evaluation of work demotivates Chinese employees and is a major barrier for the development of enterprises, as well as nepotism (Copp, 2021). At the plan implementation stage, issues of cooperation in teams are important. In Chinese collectivist culture, there is a very strong need for team and group harmony. This is especially true for the group with which the individual has frequent interactions. In the context of group relations, one can better understand the concept of "mianzi" which means "saving face" or "koubei" which means 'reputation and opinion with other group members.' According to the observations of the author of this paper, Chinese people are particularly concerned about the relationship with people with whom they frequently interact, such as co-workers. A conflict avoidance strategy is evident here, as open conflicts are not socially welcome. On the other hand, with regard to relations with strangers, as well as after leaving a group bond or a specific relationship, including a business one, an increased social distance and directing the individual towards existing social relations is noticeable. The author of this paper's own observations will be confirmed by some researchers. (X.P Chen & S. Li, 2005). It is noted that research in this regard was done in metropolises such as Shanghai,

Beijing, and Guangzhou (Bond, 2010). These processes are influenced by the need to meet increasing socio-economic requirements, as well as the motivation to achieve a similar socio-material status as wealthier city dwellers. The more an individual focuses their time and resources towards material challenges, the less time and resources they have to focus on strengthening personal bonds and relationships. While staying in numerous smaller locations in China, the author of this paper observed what the Chinese refer to as “慢的生活 – slow and quiet life.” People in smaller towns of similar socio-economic status seem to have more time to focus on socializing with one another and forming casual bonds. Some researchers note that in economically developed metropolitan areas, there is an increasing trend toward individualistic behaviour at the expense of collectivistic behaviour (Koch & Koch, 2021). Understanding the nature of cultural collectivism and the determinants of individual functioning in a social group is, according to the author of this paper, an axial issue for understanding many aspects of social interaction and the Chinese culture. An individual, as a member of a given social group, respects the order of hierarchy in that group. He/she also accepts the formal and informal hierarchy of functioning of one group relative to other groups. These behaviours have implications for hierarchical relationships within companies, such as supervisor-subordinate relationships. This observation occurring in this cultural circle is also confirmed by other researchers (Bond, 2010). In China the concept of “guanxi”, i.e. the importance of having acquaintances, is widespread. The proverbial “getting things done” often applies the principle of “through people to people”. According to the author’s observations made in the last decade, along with changes in the legal area in the PRC and an economically stronger middle class, the described phenomenon seems to be occurring to a slightly lesser extent than a decade ago. Nevertheless, the described relationships still play a very important role in Chinese culture and are crucial for its understanding and functioning within its framework. Another frequently observed phenomenon in Chinese metropolises is high turnover of employees who change jobs. This is also related to its supply. Nevertheless, in line with a significant increase in minimum wages over the last decade and the progressive improvement in working conditions, there is a growing attachment of the employee to the workplace. The general perception is that the Chinese are less prone to risk than people from the Western culture. The Chinese are more likely to be conflict-averse, accepting and respecting of hierarchies and to be frugal, as described above. Nevertheless, according to some researchers, the Chinese are characterized by a relatively high willingness to take financial risks in anticipation of a return on their investments. Hsee C.K and Weber E.U conclude that due to strong family ties present in the Chinese culture and the possibility of receiving support from the family in case of financial difficulties, the Chinese are

more willing to take financial risks, which also has an impact on management decisions in companies (Hsee & Weber, 1999).

It should also be noted that due to cultural and socio-economic conditions, many Chinese have a strong interest in entrepreneurship and trade.

According to some studies, Chinese managers to a greater extent than, for example, managers from the United States indicate that achieving corporate goals is more important than concerns about being fair (Bian & Keller, 1999). When analysing the above statement, one should take into account cultural differences that often influence concepts. An example from the author's long practice in negotiating with Chinese managers may be a different understanding of the outcome of a negotiation. Chinese managers often use less literal and less direct language. In some cases, when they disagree on a negotiation point, they do not provide such information immediately and omit contentious issues, for example, by remaining silent. When negotiating, Western managers often act according to the principle that silence confirms, which is not obvious in negotiations with Chinese managers. This is one of the reasons why misunderstandings often occur when, for example, the Chinese side presents a different point of view during negotiations the following day. The result of the negotiation is frequently understood by the Chinese manager as having been made when the agreement was signed. For these managers, it is acceptable to change positions during the negotiation process, and in practice this often occurs at the end of the meeting when the positions would appear to be settled and the parties have already presented their arguments. Western managers, on the other hand, often act according to the principle "a man's word is his bond". Cultural differences are one of the frequent causes of problems and misunderstandings between the negotiating parties. As an example, the author can cite a negotiation that took place in the morning. At 12.00 the Chinese side invited a Polish client for lunch. This was the first negotiation and the client indicated that he would like to continue negotiations as he was not hungry. However, the Chinese party insisted that he should accept the invitation. Meals at specific times are a standard in China. Traditionally, there is a one-hour lunch break at 12.00 at noon, which is compulsory for most employees in China. In addition, it is common behaviour in Chinese culture to invite a business guest to lunch. For example, it is common for both parties to be initially willing to pay for lunch together. Generally, the invitee gives up and allows the host to pay for them only after some time of 'objecting'. Many different behaviours may cause misunderstanding in a given situation. In the Chinese culture, long-term perception is important, especially taking care of relationships, including those that are important to the long-term goal of the company. Therefore, Chinese managers are often able to accept short-term losses, including financial losses, in order to maintain correct and good business relationships.

The implementation stage is followed by the control stage. Control generally involves a comparison of performance with the appropriate benchmark and drawing conclusions from such comparison. From the perspective of efficient operation of a manager, it is important to ensure balance between control, aimed at improvement of actions taken. In practice, it can be seen that in Chinese enterprises there is a tendency to draw conclusions on the basis of the consequences of events, and then to introduce successive changes. The observations of the author of the paper show that the continuous ad hoc control of the results of the implementation of the plan also takes place through numerous meetings, deliberations, as well as formal and informal relations.

## 5. Managerial styles in the PRC

In human resource management, team managers play a key role. In China, according to the theory there are three types of managerial management: paternalistic management, Taoist management and holistic management. The characteristics of paternalistic management style are moral and didactic leadership, centralized authority and implementation of control measures. Moral leadership is understood as the manager's performance as a person guided by high moral standards and controlling his own egocentric impulses. Didactic leadership involves providing subordinates with information on methods of achieving goals and success. Centralization of authority entails maintaining a superior-subordinate distance, as well as withholding from subordinates some of the objectives of actions taken that do not concern them and are not necessary for them to complete their tasks. Control practices include rewarding loyal employees in promotions and remunerations, avoiding public praise of individual employees, and using "rule and divide" tactics when such tactics may be useful (Silin 1976). The paternalistic style manager acts as a teacher and role model (Redding & Wong 1986). A paternalistic manager, like a father of a Chinese family, should set a moral example, maintain authority, control and order, as well as safety and care for subordinates who, according to the principle of filial obedience, should be loyal and respectful to the superior (Bond 2010). According to research, employees who attach more importance to traditional values are more likely to accept paternalistic management style than young employees (Cheng & Farh 2007). According to the author's observations in Chinese companies, the authority of the manager still plays a significant role and there is still a high degree of respect for the manager among both older and younger employees.

Complementary to the paternalistic management style is the above mentioned Taoist management style, which still plays a significant role in China. A Taoist manager takes action in accordance with nature, seeks to maintain

harmony, pays attention to the whole rather than the detail. He is aware of the inevitability of change and knows when to act and when not to act is the best strategy (Lee & Han & Byron & Fan 2008).

Also the holistic management style refers to traditions and values without pointing to one as dominant. A manager referring to holistic management style will draw on the experiences of Confucianism, Taoism, Maoism, or legalism (Bond 2010). It is noted that Chinese managers increasingly tend to follow the holistic approach (Cheung & Chan 2005).

From the observations of the author of this work, paternalistic management style is dominant in Chinese enterprises, supplemented by other management styles. However, there is a tendency to give an increasing decision-making freedom to lower levels of management, including delegation of tasks and powers. This occurs while maintaining the full authority of superiors, to whom the final decisions belong. Some researchers confirm that the participation of Chinese employees in various decisions concerning the operation of the enterprise, including management, leads to increased efficiency of these enterprises and increased employee motivation (Huang Sh & Zhang & Cheung 2006). Research shows that participative management, which involves encouraging employee participation in enterprise management, is more effective when employees are less attached to the traditional hierarchical management model (Chen & Aryee 2007). Hierarchical system, however, is the axial feature of paternalistic management still most popular in China. Based on the observation of the author of this paper, the condition for the successful achievement of employee motivation by increasing their participation and decision-making is to maintain the general framework of paternalistic management style, which is deeply rooted in the Chinese culture. As the observation of practice shows, according to the author of this paper, it is possible to combine these elements. The tendency for computerization of management systems and processes occurring in China will also serve to increase the transparency of managerial activities.

## 6. Conclusion

Dynamic changes in the Chinese society are an indisputable fact. This dynamism is also visible in the rapidly changing law and in the characteristics of transforming business entities. Human resources in China are changing with the change in society. Modern workplaces, digitalization and rapidly increasing innovativeness have great influence on the human resources. The dynamics of changes is observed more frequently in modernized infrastructure, informatization, or e.g. introducing changes in the so-called dress code of employees. Despite the changes taking place, it is stated that paternalistic

management is still the dominant style of management. However decreasing influence of traditional Confucian culture, changes in the family model are also shaping the modern workforce in China. Materialistic approach is other strong source of economic motivation. Despite many changes in the management styles occurring within last decades still the dominating management style would be paternalistic. Nowadays in China an increasing number of tasks and competences are delegated to employees by their managers, and incentive systems reward activity and entrepreneurship. There are changes in the patriarchal model of management, but it is still dominant and widely accepted as effective. Along with dynamic social changes there is a parallel shift of the centre of gravity in management styles and a gradual departure from the patriarchal model of management. However changes in this area are taking place more slowly than parallel social changes.

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# HUMILITY IN ORGANIZATION MANAGEMENT – SURVEY RESULTS

## 1. Introduction

The reality that surrounds us – the fast pace of technological changes, globalization, degradation of the natural environment, various types of crises (including pandemics) and experiencing the negative effects of these processes/ /states leads to a reevaluation of the current way of development, including changes in the management of organizations (economy). Hence a need arises to check whether ultimately more humility-oriented management could contribute to the creation of a new development model. Therefore, one should first answer the question: what is humility and is it something important in the organizational context, what justifies humility as an organizational virtue, and what attitude do Polish managers have towards humility?

## 2. The essence and role of humility

The etymology of the word “humility” (Latin: “*humilitas*”) derives from the word “*humus*”, which can be interpreted as being in contact with the earth, “as walking on the ground”, awareness of one’s own “earthiness”, a kind of humbleness/ respect for others (Juruś, 2015). In terms of the dictionary approach – “humility” is defined as acknowledging one’s own limitations, not overstating oneself. In the past, understanding humility was closely related to a specific worldview (Frostenson, 2016). And so, for example, in Christian culture – humility boiled down to defining a place (role) in the divine order. Being humble meant accepting one’s imperfection in sinning and, at the same time, trusting in God, who remains the source of all good. In the Confucian

philosophical and religious system, humility meant the broadly understood willingness/ability to learn regardless of formal rank or social status. In Buddhism – humility is one of the pillars and it comes down to adequate awareness/understanding of one's own cognitive ability towards others. It is not hard to see that humility is intertwined with moral issues; moral philosophers, adopting a more secular point of view, in fact emphasized humility – the recognition of dependence on others, “there is something greater than me” (Ou et al., 2014). In the past, humility was treated quite commonly as a virtue, i.e. a person's constant predisposition to strive for improvement, but there was no lack of a critical approach to humility (e.g. F. Nietzsche) or even treating it as a flaw (incl. D. Hume). In the literature on the subject, humility is synonymous with modesty (Morris et al., 2005), although at the same time it is emphasized that modesty brought down to insufficient display of one's positive qualities and contribution does not quite coincide with a balanced assessment, which is inherently associated with humility, i.e. recognition of both your strengths and limitations. Humility is correlated with the concept of honesty, the H-H (*Honesty-Humility*) component has been added as a sixth dimension to the HEXACO personality model (Lee & Ashton, 2004), but it has been noticed that this dimension does not fully reflect the essence of humility, does not include, inter alia, such key elements as the willingness to actually know oneself, the ability to learn and appreciate others (Owens et al., 2013).

Humility is also an important variable of leadership, as M. Gist (2020) puts it – it is *at the heart of leadership*. By rejecting the common interpretation of humility (as weakness, submission to others, lack of firmness), the emphasis is put on the possibility of listening to other people (subordinates), accepting criticism, and being ready to change. It is emphasized that only truly great and mature people can be humble and, within the framework of the “culture of caring”, ensure a sense of community, commitment and collective responsibility while respecting the dignity of others, that is, create a work environment in which it is relatively easier to achieve the set goals. In this way, humility, as an effective way of influencing people, comes to the forefront in the face of the challenges of the future, especially in times of crisis.

In view of the growing demand for ethical management (after the financial crisis of 2008), humility has become an important aspect of leadership, enabling confidence-building and laying the foundations for collective action to ensure social cohesion (Argandona, 2015). Humility (internal) is an individual trait, but its use in business involves going beyond this personal/internal context, and this requires openness, learning from others (listening and accepting arguments), and often giving up one's own aspirations.

It is commonly felt that humility does not fit into the business context, which is stereotypically associated with fighting, using the attributes of power,

generating impulses for continuous success, as well as self-righteousness and arrogance. In the opinion of Vera and Rodriguez-Lopez (2004), it is humility that gives leaders the opportunity to distinguish between such characteristics as justified self-confidence, conscious self-worth and impartial self-esteem, and excessive self-confidence (pride), narcissism (flattering one's ego), thinking in terms of self-interest, ignoring others. It is humility that shows the will to cooperate and not the desire to compete. Humility is a “silent virtue” that speaks loudly, mainly through actions recorded by others (Maldonado, et al, 2021). Lao Tzu states that *power over others proves strength and power over oneself is real power* (Maciejewski, 2017), humility is a manifestation of power, self-control and thus becomes a “key” for a manager to succeed at work, in arranging relationships with people, staying healthy, etc. See also R. Hogan (2018).

Emphasizing the driving force of humility, more and more often attention is paid to its importance in managing teams and organizations; in the face of the fact that the risk of business decisions is increasing (operating in conditions of uncertainty, lack of a decision-maker's monopoly on knowledge and rational choice), humility with its immanent openness, appreciating the contribution of others, correcting mistakes becomes an important condition for effective leadership (although the demand for it is still hardly visible in terms of promoting charisma, ambition, pride). Actions to develop humility as a competence (a particularly valuable resource in the organization) should also be considered as insufficient. It is a long process that requires people to engage in deep personal changes (including changes in consciousness). It is worth noting that humility (especially in the dimension of willingness to serve others) is a relatively scarce resource, difficult to imitate, although it is also possible to “pretend” humility (Frostenson, 2016). Particularly important is the role of humility in the process of organizational learning and in acquiring/developing organizational resilience, which makes it possible to defend the thesis about the usefulness of humility in management and encourages wider use of this source of competitive advantage.

### 3. Dimensions of humility

Research on the conceptualization of humility includes the influence of various personality traits on humble behavior (Nielson, Marrone, 2018) as well as coupling with other managerial “virtues” (Frostenson, 2016). However, the empirical findings to date do not allow for an unambiguous, complete definition of the construct of humility. We are dealing here with a *semantic gap* (Jabłoński, 2000), which in itself is a challenge; however, it is not the aim of this study. Bearing in mind that it is important to understand the essence of what is the subject of the study, selected multidimensional definitions of humility are

presented below, paying attention to the ambivalence with which we deal here, and which M. Kaliszewska (2015) treats as a “new type of complexity”. On the one hand, humility is seen as a necessary component of the management style. To see this, it is enough to recall the research of J. Collins (2001) from 20 years ago, looking for conditions for the excellence of companies. Their surprising result was the finding that managerial skills, i.e. the highest level of leadership on a 5-point scale, constitute a specific mix of humility (modesty) with determination in action. The fulfillment of this condition has allowed companies to maintain a long-term competitive advantage, overcome crises and achieve relatively lasting success. On the other hand, as part of promoting entrepreneurship, innovation as conditions ensuring development, humility as a weakness, lack of ambition, passivity, etc. is a contraindication of attitudes and behaviors necessary in business/management, which are able to ensure the implementation of the goals of individuals, teams and entire organizations.

An example of the ambivalent approach to understanding humility (in the organizational context) is the introduction by A. Argandon (2015) of the intra- and interpersonal dimension, which is associated with the perception that humility resides in an individual and is perceived by others.

When referring to psychological research on the structure of humility, i.e. thoughts, feelings and behaviors that constitute it, it should be noted that in intensive research since 2000, which have tried to determine to what extent humility is something positive and socially desirable and to what extent it is a negative phenomenon (i.e. it also has its dark side) (Tangney, 2000) – the breakthrough constituted the empirical findings of A. Weldman, et al., (2018) the psychological structure of humility), which, by means of the method of cluster analysis among others, allowed to distinguish two dimensions of humility:

1. Pro-social – includes the affiliate feeling of gratitude to others
2. Antisocial – oriented towards withdrawal, a feeling of humiliation and shame.

Each of them includes separate events preceding cognition and emotions related to self-esteem and tendencies to act that facilitate establishing relationships with others. And so, appreciative *humility*, as a rule, appears after personal success, which allows you to feel satisfaction with your achievements at the same time fostering a feeling of kindness towards others. This dimension of humility promotes a balanced self-perception.

Degrading *humility* usually occurs after experiencing failures/failures that make people feel “inferior” when comparing themselves to others, resulting in negative self-esteem and a desire to hide from others. Subsequent extending studies have brought convergent evidence that humility can take two different (opposite) forms, which confirms the complex (ambivalent) nature of this

construct, thus making it difficult to recognize the nature of the phenomenon of humility, its measurement, and the formulation of dispositions regarding its shaping. Therefore, humility continues to be a challenge for theorists and practitioners alike.

At the present stage, the research on the conceptualization of this phenomenon carried out by R. Nielsen and J.A. Marrone (2018) can be considered a reliable source for establishing the “core” of humility in relation to the organization. Synthesizing the previous research results (from 2000), a set of key (theoretical) elements of humility was constructed based on the criterion of the frequency of appearing in the literature on the subject. It includes the following components<sup>1</sup>:

1. self-awareness, taking into account the acceptance of one’s own limitations, the ability to admit mistakes (11)
2. openness to feedback and the ability to learn (6)
3. valuing others, recognizing their input/strengths (5)
4. transcendence/taking a broad perspective in thinking/acting – there are things “bigger” than us, there are things which we have no control over (5)
5. low level of self-focus (3)
6. striving for self-transcendence, i.e. going beyond one’s “I” and embracing all beings within “the self” (1)
7. no need for inspection (1)
8. identifying and taking advantage of favorable circumstances/opportunities (1)
9. rational collective orientation (1)
10. showing no superiority (1)

As the statement/ranking shows, the most important component of humility (it appeared in all 11 analyzed sources/works presenting the results of psychological and organizational research) is full *awareness/assessment of one’s abilities/limitations and the ability to admit mistakes*. The next elements constituting humility were present with a frequency of 6 to 3, the remaining 5 elements were used once to define the conceptual framework of humility.

According to R. Nielsen, J.A. Marrone (2018), humility, in accordance with its ambivalent nature, can be both stable and flexible in time, i.e. it can be learned, and it can be “instilled” in an organization. Taking into account the accumulated research achievements, it is worth emphasizing that humility in the organization is generally perceived as a positive phenomenon, conducive to productivity, although certain moderating conditions are necessary for this happen, e.g. organizational culture promoting cooperation and learning, proactive

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<sup>1</sup> The number of sources referring to this dimension is given in parentheses.

and efficient teams as well as the qualities of a leader for example, such as competence, honesty, etc.

In concluding the review of selected attempts/examples of structuring humility, a study from 2021 was made, which on the basis of Owens et al., (2013) and Ou et al. (2018) presents five dimensions of humility (related to managers at all levels) that complement each other but also differ from each other. They are:

- self-awareness/appreciation of one's own strengths and weaknesses, readiness to acquire new knowledge (self-education)
- valuing others, their contribution to common goals, their potential skills
- the ability to learn on the basis of openness to criticism, opinions and advice from others
- low ego, no self-focus
- orientation towards serving others, striving for self-transcendence (going beyond one's little "I" and embracing all beings within "the self").

On the one hand, humility is seen here as a trait "based on oneself" related to the experience of individuals resulting from who they are; on the other hand, it is related to their relations with others, with the world (Ou et al., 2014).

The review of the literature on the subject confirms the long-lasting interest in humility, which results in making further attempts to identify the essence of this phenomenon, to clarify its changing conceptualization over time, as well as to recognize its role and effects as well as the challenges related to humility – especially in relation to organization, managers. The above was a premise for undertaking research on humility in Poland. It was focused on, among others, checking how humility is understood in our economic practice, to what extent it is noticed in the management of organizations (which continue to implement the development model that gives priority to financial results, disregarding important aspects of social life, with the lack of adequate respect for the idea of *sustainability*).

#### **4. Objective and method of research**

The research was carried out by the method of a diagnostic survey, using an online questionnaire<sup>2</sup>. The research focused on finding answers to the following questions: how is humility understood? Who/what does it refer to? To what extent is it a choice and to what extent is it a compulsion (resulting from the conditions of functioning)? How do respondents (managers and entrepreneurs)

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<sup>2</sup> The survey was conducted in 2021 (III – VI) using <https://researchonline.pl>.



assess their tendency to express humility? And what is its usefulness, what are the chances of shaping/developing it in the organization?

A deliberate selection of the research sample was used, inviting people from all over Poland to participate in the study, who, having become acquainted with the research intention, expressed their will to participate in it. The survey questionnaire contained a record of the characteristics of the respondents, the organization they represented, and questions exploring the phenomenon of *humility*.

472 respondents took part in the study. After verification, 338 questionnaires were qualified (N = 338). This sample does not meet the criterion of representativeness, and therefore, the results of the study do not provide grounds for generalizing conclusions. Nevertheless, the obtained data may contribute to shaping the perception of the phenomenon of humility in Polish organizations, and will, in the future, be used to formulate/verify detailed research hypotheses on humility.

## 5. The results of the survey research

34% of the respondents were people holding the position of the president or member of the management board of the organization, 48% were entrepreneurs/company owners, and the remaining 18% were former directors, managers of departments, projects, etc. The most numerous share here were respondents with 10 or less years of work experience (41%), slightly less – 36% – those with 11–20 years of work experience, and only 4% of those with more than 30 years of work experience. As for the criterion of the size of the organizations participating in the study (according to the number of employees), large organizations accounted for 16%, medium-sized – 30%, and the share of small ones was 54%. As for the scope of the companies' operations, the structure was as follows: global – 9%, international – 26%, national – 32%, and companies with a regional or local reach – 33%. Due to the lack of limitations in the research questionnaire regarding the scope of the objective activity of the organization, the studied sample included a very wide spectrum of represented industries, including manufacturing, construction, agriculture, transport, logistics, trade, tangible and intangible services, health care and others. As for the criterion of economic and financial condition, the deterioration of the condition in 2021 compared to 2020 was noticeable in the self-assessment of the surveyed organizations; there was a decrease in the share of entities with very good and good condition, respectively from 35% to 28% and from 50% to 46%, at the same time, there was an increase in the share of entities in the group of average economic and financial condition.

The scope of this study does not allow for full presentation of the test results however, below are selected results and synthetic findings obtained on their basis. Firstly, an attempt was made to indicate to whom/to what humility

may refer in the collective and individual dimension. It is worth noting that the reference to the world of organization is not necessarily fully unambiguous – 18% of the respondents did not indicate the subjective/objective reference of humility in the collective dimension as did 7% in the individual dimension. Admittedly, 49% of indications in the collective dimension concerned the organization as a whole and 50% of indications concerned a manager (in the traditional sense, as a superior) and 17% referred to a team, project or undertaking manager – which was considered a sufficient legitimacy to study this phenomenon in the area of organization management. Approximately 26% of indications (almost two times less than for managers) concerned (executive) employees, therefore the question arises whether the need for humility concerns mainly managers, i.e. those who make decisions, delegate tasks to be performed and make sure they are executed? Is the need for humility in relation to subordinates/contractors significantly lower (and what are the components that structure the humility of a superior and of a subordinate?). About 28% of respondents' indications concerned the reference of humility to the organizational culture, considering that this may significantly affect the attractiveness/reputation of their company, its innovation and productivity. The result that is puzzling is the relatively low level of relating humility to the organization's stakeholders.

When assessing the usefulness of humility in managing an organization, the respondents decided on the following distribution of the suggested roles, cf. 1.

Table 1: The role of humility

Humility, among others		% of indications
1	allows one to better adapt to the new reality, to dynamically changing operating conditions, to overcoming crises	21
2.	opens up the space to look for other goals, it triggers mutual tolerance for emerging differences, it enables the approximation of positions	18
3.	creates a work environment conducive to increasing productivity	17
4.	enables the integration of efforts to achieve the organization's goals	13
5.	increases participation, allows the involvement of a wide range of people to achieve goals/tasks	11
6.	opens the door to success	11
7.	allows one to limit control, develops a sense of community and responsibility	9

Source: own study based on the results of the survey.

Thus, the respondents appreciate the role of humility in adjusting to the current operating conditions of companies the most. They also notice its necessity in improving productivity, accept it as a determinant of success.

At the same time, it was indicated what the risks of an organization that does not show humility, where it is not an important element of the management of this organization are. See table 2.

Table 2: Consequences of the lack of humility in an organization

	The lack of humility puts an organization at risk, for example	% of indications
1.	the inability to correct mistakes, falling into self-righteousness, „development stagnation“	24
2.	causing difficulties in resolving conflicts (orientation on proving certain reasons)	17
3.	feeding one’s ego, excessive self-presentation of the leader (management), preferring to think in terms of one’s own benefits (not the organization’s)	17
4.	taking impulsive, risky actions (result of arrogance)	16
5.	the lack of interest in teamwork (and obtaining a synergistic effect), lack of orientation towards „relations“ (relational capital)	15
6.	basing activities on the illusion of self-sufficiency, dealing with opposites	11

Source: own study based on the results of the survey.

In the next step, an attempt was made to determine which dimensions/components of humility are particularly important for its understanding in Polish enterprises by Polish managers. On the basis of the penetrated literature on the subject, a list of 12 dimensions of humility was generated. Based on the number/% of responses, a ranking of these dimensions was determined, at the same time assigning them importance (on a scale from 6 to 1). See table 3.

Table 3 shows that the first two dimensions were considered to be the most immanent for humility – more than 90% of the responses. The remaining ones, which received more than 50% of the responses, were the dimensions from 3 to 6. The results of these studies show a slightly different understanding of humility today in relation to the previously formed stereotype. In the light of the respondents’ statements, the essence of humility does not necessarily consist in accepting everything, being passive, not resisting difficulties, subordinating others, etc.

Being humble is related to the awareness of limitations, the ability to correct made mistakes, the ability to accept criticism, to learn from others, to appreciate them, to look for allies/associates, and the ability to make changes. This “pattern” of humility emerging from the study is consistent with the one presented on p. 6, but it certainly requires further in-depth verification.

As part of the study, using the 12-element “core” of humility, a self-assessment was also made, distinguishing the following 4 levels, and so

- almost a half (48%) stated that their humility is at an average level and the components with the highest share are: 2, 1, 3, 4.
- 22% of the respondents assessed their humility as above average, and the most characteristic manifestations (components) were: 1,2,4,3.
- 18% of the respondents stated that their humility is at the minimum level and it is mainly determined by the components 11 and 7.

On the other hand, 12% of the respondents assessed that their functioning in the organization is associated with a lack of humility and that it is mainly determined by the components 10 and 9.

Table 3: Ranking of the dimensions of humility

Dimensions of humility		Number of indications	%	Severity					
				6	5	4	3	2	1
				% of indications					
1	the ability to correct mistakes, the ability to „learn” and make appropriate changes	315	93	33	29	14	10	4	3
2	awareness of one’s own (individual and collective) limitations, allowing the possibility of making a mistake, the ability to accept criticism	308	92	37	25	11	9	6	4
3	the ability to listen to others, to empathize, trust others, the presence of a „culture of care”	300	89	15	15	25	20	9	5
4	recognizing the right of others to make a choice (making decisions), recognizing the dignity of others, showing them respect	287	85	11	17	19	19	12	7
5	focus on „looking through/out of the window” (looking for allies, associates)	242	72	9	7	13	8	18	17
6	willingness to serve others, help others (altruism)	233	69	8	5	9	12	17	18
7	lack of focus on personal successes (merits), realizing one’s own ambitions	131	39	2	3	5	7	10	12
8	not accepting the opinions of others, relying solely on one’s own judgments	87	26	3	2	3	4	7	7
9	orientation to „looking in the mirror” (manifestation of narcissism, emphasizing individualism, courage)	67	20	4	4	2	2	4	4
10	passivity, inability to act decisively, accepting „everything”, tolerance for drifting (actions without goal/goals)	65	20	2	1	2	3	4	8
11	failure to control the situation, submission to others, submissiveness, weakness	65	20	1	2	3	3	4	7
12	not resisting life’s necessities (difficulties), lack of flexibility in response to changing operating conditions	60	18	1	2	1	3	4	7

Source: own study based on the results of the survey.

As part of self-assessment, 73% of respondents admitted that their personified level of humility remains relatively constant, and only 27% assessed that their humility changes over time. The factors that cause an increase in humility include, among others, a sequence of various failures, increasing complexity and formalization of procedures (legal regulations), deteriorating health, accumulation of professional and personal experiences, a feeling of increasing dependence as a consequence of the expansion of the circle of colleagues/partners, etc. On the other hand, the factors that reduce the tendency to express humility include the relatively long period of good economic and financial condition, the inability to

anticipate threats in the environment, and treating humility as a brake for the realization of one's (ambitious) goals.

Among those who admitted the instability of their humility, 86% stated that changes in this level are the result of deliberately made choices, while the others admitted that these changes are caused/forced directly by factors related to the conditions of the environment or the interior of the organization.

The declarations of the respondents regarding their conscious control of the level of humility (tendency to humility) are consistent with their opinions about the possibility of shaping (developing) „competence” which is humility – 88% of the respondents indicated this possibility, while 12% were of the opinion that humility is a genetically encoded state and not subject to major revisions. Such a distribution of positions, despite everything, leaves room for looking for ways and tools to maintain a rationally justified level of humility in order to maintain a certain readiness in this area.

The chances for this result from the respondents' declarations of respect for humility as a determinant of the management of the organization's activities in the future, 81% of the survey participants declared such respect, bearing in mind that „we live in a world in which the ego attracts attention and humility brings results.” On the other hand, 19% of respondents refrained from making such a declaration, bearing in mind that „life is a struggle, constant competition, and so if you do not win, you lose”.

## 6. Conclusion

Humility has long been a subject of interest in philosophy, theology, psychology and, more recently, management. Subsequent empirical studies indicate the ambiguity of this concept and difficulties in reaching a consensus in understanding humility, which makes it difficult to formulate recommendations relating to its use, *inter alia*, in business. The results of the study confirmed the reevaluation of the understanding of humility that took place over the years and which bode well for the use of humility in changing the current model of development of organizations/economy. The results of the self-assessment of managers/entrepreneurs and their declarations of more humble management in the future are also promising.

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# THE IMPORTANCE OF EMPLOYEE COMMITMENT IN THE 21<sup>ST</sup> CENTURY<sup>1</sup>

## 1. Introduction

Scientific and popular – scientific papers differ in several respects related to commitment – there is no single definition, unambiguous answers regarding the determinants, or unambiguous measurement scales. Nevertheless, the fact is obvious that the commitment level of the employees is associated with their efficiency and satisfaction with their work, and thus with their company's results. The question is still crucial: whether or not the pandemic and the related organizational changes, e.g. telecommuting, may affect how the creation of commitment and its measurement are perceived.

## 2. Defining commitment

Attempts at defining the term of employee commitment in the literature have been undertaken in many studies, covering many aspects related both to the employee mood (Schaufeli W. B., Bakker A. B., 2004), and its effect on the environment, or the actual usefulness for their organization. However, despite numerous definitions, it is difficult to clearly specify the notion of commitment, and thus any uniform measurement method (Madhura B., Deepika P., 2014). Commitment is a notion associated not only with the business and economy, therefore, depending on the scientific field, different aspects are highlighted to determine what does it mean to be a committed employee. The definition shall have a different scope in psychological and social sciences than, for instance, in

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economic sciences, even if we still talk about the commitment of employees. It is because commitment affects both co-workers and the business environment, and the family and relatives of an employee, and also the personal mood and fulfillment. W.A. Kahn, regarded as a scientific authority figure and a pioneer in the field of commitment, describes the issue of the personal professional commitment in connection with the employees' sense of security, with finding their place in the environment in which they work, which makes it possible for them to be open, and thus to play a role that creates the same conditions in comparison with their co-workers (Kahn W.A., 1990). Therefore, the harder we try, the more we affect the others, and they, by giving their strength, give us a basis for our personal commitment. In his studies, he has strongly relied on the notion of one's own identity and role in the organization. A different approach is defining one's commitment as a positive state of mind associated with one's professional work (Schaufeli W.B., Salanova M., Gonzalez-Roma V., Bakker A.B., 2002), where three accompanying notions emerge: vigor, devotion, and focus on work. This definition indicates that a committed employee is one who has energy understood both as physical and psychological strength, who puts effort into what they do, since they have the impression that it makes sense and makes them proud, who is focused on their work, which makes it possible to perform it effectively. D. Robinson (Robinson D., Perryman S., Hayday S., 2004), adds that when defining commitment, it should also be emphasized that it is manifested when an employee is aware of their work improving the effectiveness of the organization. A.M. Saks (2006) introduces an additional notion of organizational commitment, which extends the previously accepted assumptions of employee commitment itself. A. B. Bakker (Bakker A.B., Albrecht S.L., Leiter M.P., 2011) points to one's commitment being a result of their own energy, sense of effectiveness, and identification with their work. M. Juchnowicz (2012) specifies that it is the mutual exchange of benefits between the employees and their employers. S. Borkowska (2014), differentiates between the passive commitment, being the same as the attachment to the organization, and the active commitment related to an employee's impact on the development of their company. The literature also includes the definition of one's commitment as the opposite of their professional burnout (Maslach C., Schaufeli W.B., Leiter M.P., 2001). The researchers also indicate the distinction between the notion of the commitment and of the satisfaction (Schaufeli W.B., Bakker A.B., 2010), which is an employee's evaluation of the work itself, rather than their experience of doing it. Another notion, often considered synonymous by managers, may be one's motivation, which, as a rule, is related more to satisfying needs than to one's attachment to the company (Kapera A., *bd*). Yet another notion is the organizational attachment based more on an employee's identification with the organization than on their actions (Kanste O.,



2011). The deliberations on the definition of commitment remain unresolved, and the literature contains discussions concerning the depth of this issue (Kulikowski K., 2015). Given the wide and ambiguous notion of commitment, it is justified to introduce its different categories. For example, M. Juchniewicz (2012) introduces the division into cognitive, emotional, physical, and identification commitment. S. Borkowska (2014) points to the distinction between passive commitment being the same as the attachment to the organization, and active commitment associated with the employee's impact on the company's development. Another classification is the specification of the three components of one's commitment: the affective, the normative, and the emotional component (Meyer J.P., Allen N.J., Smith C.A., 1993). This breakdown is the one most commonly mentioned in the literature (Bergman M.E., (2006), Kopera A, (bd), Lewicka D., (2013), Lochnicka D., (2015)).

The purpose of this paper is not to identify a single definition, or to fully classify the definitions and categories of commitment, but to indicate its multi-faceted nature, which also affects the ambiguity of other elements related to commitment, e.g. the measurement scale, the determinants, the effects, or the method of creating commitment. The definitions and classifications quoted should be regarded as examples, since the commitment-related literature is very voluminous. The influence of one's commitment on the effectiveness is obvious, and thus this is one of key elements in management.

### **3. Determinants of commitment**

Ordering the factors that determine commitment is another challenge. For instance, L. Górniak (2015) lists four critical elements that must be met in order to build an employee's commitment. These are: recognizing an action as important, this activity must make sense for the employee (in a broader context than the action itself), the employee must decide to undertake this activity, and the result of this activity must be noticeable in the form of an apparent change. These elements indicate the link between the commitment and the action, the performance of the activity, which means being involved in particular actions builds the employee's comprehensive commitment. The issue of the commitment determinants was discussed in more detail by AON Hewitt Consulting in their study on the factors that build commitment, where such elements appeared as: the possibility of being promoted/making a career, brand awareness, identify, HR practices, the organization's reputation, performance, the remuneration, or focusing on people. Interestingly, the studies have demonstrated that there are factors significant from the point of view of the employees e.g. in Europe, and they are less significant on other continents. R. Peters points out trust in employees

as one of the key factors of commitment (PetersD., Caldwell C., 2016). The list of the commitment factors indicated by Robinson (Robinson D., Perryman S., Hayday S., 2004) include career, development, evaluation, and performance, relations with the manager, fair treatment, remuneration and benefits, friendly atmosphere, cooperation, communication, and security. J. Smythe names relations with the manager as one of the key elements. A.B. Bakker and W.B. Schaufelli (2004) have found in their studies an evidence for a strong positive correlation between the feedback regarding performance, the support from the co-workers, and supervisory coaching, and the commitment to work.

In Polish reality, the significance of the commitment factors have been evaluated by A. Wojtczuk-Turek (2009). She sees as crucial such factors as the option of completing interesting tasks, own development, performing challenging tasks, having a clear goal, and being free in pursuing it.

K. Kulikowski (2015), when analyzing the job requirements and resources theory (JD-R), indicates elements crucial in being committed, such as social support, autonomy, feedback, positive organizational climate, the sense of personal effectiveness. M. Juchnowicz (2010), lists the following factors: organizing work, development options, remuneration, (also in the context of the rules), relations with co-workers, and cooperation with the manager. A. Kopera (bd), based on her own research and based on the studies by S. Borkowska, has divided the factors affecting the commitment into three blocks by the origin of a given factor – the first one are the elements directly connected with an employee's features (e.g. the age, gender, family status, assets etc.), and the second one are those resulting from the work (such as the nature of the job, the position, motivation systems), and the third situational one, e.g. the match with the organizational culture, stating that the employee's commitment in different circumstances and situations may vary, or in similar circumstances different employees may achieve equal commitment levels, depending on their personal premises. E. Bombiak has prepared a table, where particular commitment factors are presented in breakdown by the point of view of the employees and that of the managers. Though the first three factors are identical for both groups, and relate to tangible aspects (base remuneration, bonuses, sharing the profit), further ones include differences in the claims of the employees and those of the managers (Bombiak E., 2010).

To sum up, it may be assumed that there is no uniform list of commitment determinants. It depends on the situation of an employee, the organization, and further on a number of elements affecting the commitment, such as the remuneration, development options, benefits, working time etc., it is much easier to indicate elements, without which building an employee's commitment is not very realistic, and which must be taken into consideration in the management process. Thus, creating the commitment may be perceived not as focusing on

particular factors, but as caring for those listed to be observed and introduced depending on an employee's circumstances and needs.

#### **4. Commitment measurement scale**

Another aspect associated with employee commitment is defining the commitment scale itself. For instance, Hewitt has prepared an 18-item commitment measurement scale which makes it possible to determine the degree to which employees speak positively about the organization (say), how much they want to stay in it (stay), and the effort they put into the organization's business success (strive) (AON Hewitt, 2014). And the Gallup Institute has built a list of commitment determinants, where their assessment is a measure of commitment at the same time. The scale covers 23 issues that broadly define an employee's business environment – both in the scope of cooperating with colleagues, with the manager, the goodwill, or their own development. Scientific studies most often list the 18-degree Organization Attachment Scale authored by Meyer and Allen (Meyer J.P., Allen N.J., Smith C.A., 1993) which refers to the impressions relating to the employee – employer relationship, and the Utrecht Work Engagement Scale survey (UWES) by Schaufeli and Bakker, which includes 17 items, and which measures the vigor, focus, and attachment. Though both scales partially overlap, the opinion that both should be applied at the same time prevails, since they complement each other this way, and, when used at the same time, they indicate also certain variances in the areas (Stoeber J., Townley J., Davis Ch., 2013). The recommendation to apply both scales as complementary ones has resulted in an attempt to simplify the questionnaires. Currently, shorter forms of both surveys, consisting of nine items, are also in use. These scales also exist in different adaptations – for instance, the Organization Attachment Scale exists in its Polish adaptation authored by A. Bańka (Bańka A., Wołoska A., Bazińska R., 2002).

However, commitment measurement is an open area for further research (Stoeber J., Townley J., Davis Ch., 2013), and it is unlikely that a homogeneous, universal measure will be created, as organizations have their own specificity, culture, and climate, therefore any studies according to the typical scales should be a guideline for managers regarding areas to be improved rather than a comprehensive diagnosis (Łochnicka D, 2015).

#### **5. Importance of commitment**

The positive correlation between the efficiency and the commitment is highlighted by many researchers (Osborne S., Hammoud, M. S., 2017, Tripathi, J. P., Sharma S., 2016, Akbar M. R., 2013), and it seems impossible to find any

study indicating that a low commitment brings positive effects for the company. The deliberations of scientists relate to specifying new areas that are positively affected by commitment. For instance, it is noted that employee commitment increases customer satisfaction, and reduces employee turnover (Wardani L., Anwar S., 2019), positively affects the proactive approach (Salanova, S., Shaufeli W. B., 2008), the competitive advantage (Pfeffer J., 1998), the innovation level, achieving outstanding results, or solving difficult issues (Adamska-Chudzińska M., 2016).

At the same time, the commitment level of the employees, based on the studies, is evaluated as very low – for instance, in a study by the Gallup Institute in the United States, a high commitment is declared by 26% of the employees (Fleming J.H., Coffman C., Harter J.K., 2005), in a study by Towers Perrin (Towers Perrin, 2008), highly committed employees constitute only 21%, with 38% not being committed.

Thus, having the evidence for a positive influence of one's commitment on the business, and also an indication that at best every third employee is highly committed, it seems certain that the area of creating commitment will be one of key challenges in the field of management – both in business practice and in science.

Moreover, it might be expected that the employee commitment level will be studied not only in the economic sciences, but also in psychology or sociology, since being committed to work is also related to the notion of happiness (Cropanzano R., Wright T.A., 2001, Bakker A. B., Sanz-Vergel A. I., 2013). A key role in employee commitment is also the match between an employee's values and those of the company – in the Time4 study (Time4, 2021), it is demonstrated that even 96% of the employees claim that the match between their values and beliefs and the organization's culture significantly impacts their job satisfaction. This in turn leads to certain conclusions with regard to the correlation between commitment and social values – it seems impossible that a contemporary company wishing to create committed teams can separate itself from the social debates such as those on equal rights, ecology, or parity.

## **6. Commitment and the challenges of the 21st century**

The role of employee commitment in our century is one of the key topics in the field of management (Saks A.M., 2006, Robinson D., Perryman S., Hayday S., 2004). In this regard, science agrees with business practitioners-- the study carried out by Delloite Global Human Capital Trends in 2014 demonstrates that the vast majority of managers (78%) consider commitment a necessary element. In Poland, in a study conducted on a group of more than a thousand respondents, the percentage of highly committed employees was 28% (Juchnowicz M., 2010)

Due to the complexity of the issue of commitment and its significance in contemporary management, this subject still offers scientists and the business great possibilities of studying and applying in practice. According to HR Trends, the main directions of development for human resource departments are investing in human capital and in individual needs of employees. In practice, this means a closer association of an employee's self-evaluation and their personal premises with their professional life. In the light of the complexity of the definitions, varying determinants, and diverse measurement scales, developing a universal commitment building model seems unlikely, although many premises allow to indicate proper directions. Moreover, it is difficult to match even a specified model with selected groups, because even when we deal with employees of one company (the same environment, values), or even of the same department (the same boss, similar conditions), and even particularization down to the needs of a single person (development, individual needs, values), the studies show that the commitment level of one employee may change even daily as a result of different impulses and events (Xanthopoulou, D., Bakker, A. B., Heuven, E., Demerouti, E., & Schaufeli, W. B., 2008).

However, it is possible to define several universal areas to study commitment, and thus the methods of its creation, going beyond general statements, and, at the same time, making it possible to aggregate certain areas. One of such issues could be the issue of commitment vs. generational diversification, or in connection with the gender, or the type of the organization in which the employee works (the size, sector, nationalities etc.). With regard to generational diversification, the subject may be more significant since the studies show that the older generation is more committed than the younger one (Bakker, A.B., 2009), which results in the fact that without making significant changes in how commitment is being built, it could decrease as the Y and Z generations enter the market. One of the most interesting issues in recent years may also be defining the relationships between the commitment and the scope of telecommuting. That aspect is particularly interesting in the full telecommuting model, which, during the greatest Covid19 restrictions, increased from less than 6% to more than 70%, and more than 30% of the respondents expect to continue telecommuting after the pandemic, and the sum of the responses that imply teleworking exclusively and predominantly (1–2 days a week in stationary work) has exceeded 70% (own study A.Waszkiewicz, A. Dolot from July 2021). Moreover, the younger the respondents, the higher the expectation of telecommuting – for instance, slightly more than 27% of the X generation and 39% of the Y generation expect to telecommute. In general, more than 90% of those surveyed who have experienced this phenomenon prefer telecommuting and hybrid work. Therefore, it should be assumed that it will become a permanent element of the organizational models, and thus it is crucial to answer whether, or not, building commitment, particularly

the affective type (organization attachment), is to be implemented based on the same determinants which were demonstrated when the vast majority of the employees worked stationary.

## 7. Conclusion

Indisputable is the fact that the management process in the 21st century will be closely related to the creation of employee commitment and care for their comfort both in strictly professional terms and for a balance between the professional and the private life. The key importance of commitment has been proven by many studies and indicated by numerous researchers, therefore, the subject has been intensely studied in the scientific and popular science literature for at least 30 years. The period of the recent years, together with the technological development, social changes, the escalation of telecommuting being one of the effects of the Covid19 pandemic, the generational change, and a stronger association of social factors with business, put the commitment building issue in a completely new light, and confront managers with different challenges in this regard.

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# STRATEGIC VALUE-BASED MANAGEMENT WITH THE USE OF THE VALUE CHAIN<sup>1</sup>

## 1. Introduction

The concept of value-based management was developed in order to increase the effectiveness of enterprise value creation in the conditions of the domination of enterprise shareholding by institutional investors and the resulting common separation of enterprise ownership and management. Permanent focus of the management process on the strive for the growth of enterprise market value requires actions to be taken both in the operational and strategic approach. In this first approach, we deal with operational value-based management focused on the generation of partial effects of value creation and on their measurement and evaluation. The long-term reference of the above-mentioned activities is directly related to the implementation of the superior financial objective, which is the multiplication of the enterprise's market value. Therefore, we deal here with strategic value-based management, which is connected both with supporting the process of formulating the strategy of enterprise value creation and with stimulating activities related to the effectiveness and efficiency of implementing this strategy. Strategic value-based management concentrates on monitoring, analysing and evaluating long-term undertakings aimed at creating enterprise value and preventing its destruction (Woźniak-Sobczak, 2011). Enterprise value creation is a process which is implemented through the sequence of actions creating the enterprise's value chain. Therefore, it will be justified to present the

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scope and the conditions of using the value chain for the needs of strategic value-based management, which determines the basic aim of this chapter.

## 2. The enterprise value chain and its configuration

The idea of a value chain was formulated in the 1980s by M.E. Porter and owing to its high application value it quickly became one of the leading concepts of strategic management. The concept has its methodological roots in its approach to an enterprise as a system. It is based on the principle according to which all market undertakings are certain interrelated sequences of activities (Oblój & Trybuchowski, 2009). The concept was born out of the transformations of the market, economies and enterprises discussed in more detail in Chapter One, and above all the internationalisation of enterprises, the process of intensifying competition and technological progress, as well as wider opportunities to access information, both for business entities and their customers. As a result, the basic indicator of a firm's success, which until now was market share, has been replaced by the measure of creating value for customers. The most important premises that decided about the reorientation of the priorities of business entities' activities included (Stabryła, 2010):

- the widening group of the enterprise stakeholders – at present, this group is made not only by shareholders but also competitors, customers, employees, governmental and political institutions and environmental organisations,
- increasing expectations of stakeholders – due to a big group of stakeholders there is often a conflict of interest of the particular groups,
- a change in the sources of the origin of value – consisting in a change in the traditional approach to the creation of value the source of which used to be sales, and now it is most often achieved through expanding complementary services,
- a change in the sources and methods of collecting information and the technology of its processing – the most important aim within this scope becomes the integration of the internal and external source of information with the use of IT solutions,
- the shortening the product lifecycle – it forces enterprises to take innovative actions focused both on the modernisation of the product, technological processes, as well as logistic activities.

Taking the above conditions into consideration by the enterprise gives it an opportunity to achieve a strong market position. Achieving a competitive advantage is a challenge for every business operating in the current turbulent environment, as it is related to the nature of all functions performed by the business entity. Effective implementation of individual tasks ensures continuous

development of the enterprise and an increase in its value. Therefore, an important issue is to identify the sources of competitive advantage through a systematic analysis of all activities performed within a given enterprise and the identification of relationships that occur between individual processes. One of the most effective tools of such an analysis is the concept of a value chain, which is based on the separation of strategic tasks by means of an analysis of the functioning of the whole enterprise, allowing to understand the principles of cost formation and specifying current and potential sources of the advantage. Gaining a competitive advantage by a given business entity is conditioned by the implementation of one of its key tasks better or at a lower cost than its competitors (Porter, 2006).

The value chain concept assumes that individual activities making up the processes implemented by the enterprise should lead to the creation of value added for customers, and thus contribute to the implementation of value added for the enterprise (Blaik & Matwiejczuk, 2008). In general terms, a value chain represents the process of „adding” value to a product, starting with the activities related to the company’s purchase of raw materials, materials, semi-finished products, etc., necessary for the production process. Then, a value chain includes production, logistics, marketing activities and ends with the provision of additional services to customers. Thus, it becomes necessary to distinguish strategically important „carriers” of added value creation within the enterprise. These are successive activities related to the creation and delivery of value to the customer and the creation of value of the entire entity. Therefore, the value chain concept fits both into the strategic management stream, through its reference to the construction of strategic advantage and competitiveness of the enterprise, and has become one of the tools of enterprise value-based management, actively participating in this process (Rojek, 2014). The application of the value chain manifests itself in the separation of key tasks of strategic importance from the entirety of processes taking place in the enterprise. Owing to the application of the value chain concept, managers can learn and understand the specificity of costs, and, what follows, identify the existing and potential sources of their diversity. It should be remembered that the competitive advantage of enterprises is built by performing key tasks better or in a less capital-intensive way than their competitors. A value chain allows to present a certain sequence of activities grouped into characteristic processes, creating added value from the point of view of customers (the consequence of which is the creation of added value for enterprises) (Blaik & Matwiejczuk, 2008).

At present, a value chain is a term commonly defined in Polish and foreign literature. Various authors emphasise the following of its key attributes:

1. A value chain is a well-defined stream of different types of activities that are undertaken by enterprises thus creating a common value system. The chain

describes various processes aimed at maximising the value of a given enterprise's own products. In other words, a value chain is a sequential representation of elementary sets of functions performed in a company (from R&D, through production, to sales and warranty service). Each link in the chain generates additional value. The objective is to create value for the buyer, assuming that the value should exceed the costs incurred (Porter, 2006).

2. A value chain is a sequence of interlinked activities performed during the production of an end product or service, enabling the generation of added value (Rokita, 2005).
3. A value chain is based on the assumption that strategic capability is ultimately judged by consumers. It encompasses on an organisational scale the elements and functions that create value, from the shaping of production and the definition of technology, through material and logistic transformation processes, to servicing (Romanowska & Trocki, 2004).
4. A value chain is a sequence of interrelated activities carried out in the manufacturing process of an end product or service that enables the generation of added value (Wrycza, 2014).

The value chain concept implies viewing the enterprise as the totality of all tasks and activities that an economic entity performs in the conduct of its business activity. In light of this theory, an enterprise is a set of certain operations and undertakings related to the creation of projects, the production process, marketing activities, supplies and service (Porter, 2006).

Therefore, a value chain created in every organisation is unique and includes three groups of key processes (Szablewski & Tuzimek, 2008):

- innovation processes, which concentrate on market research, the identification of customer needs, designing product offers and their effective introduction to the market,
- operational processes, related to the production and delivery of products to customers and to the provision of services; the repeatability of those processes determines the existence of greater opportunities to achieve good results in this area,
- after-sales processes, concerning such activities as warranty services, handling returns and complaints, payment processing and debt recovery.

The value chain of an enterprise should first of all enable the creation and delivery of values expected by customers. In value creation, it is necessary to adopt the principle of the primacy of their interests, and their preferences and expectations should be the key criterion of management. This requires the precise identification of activities determining the delivery of basic utilities to customers. Thus, this imposes on the enterprise the need to define a "value proposition",

unique when compared to its competitors, which is ultimately offered to customers to solve their problems. The development of the value proposition should take into account not only customers' preferences and expectations, but also the firm's capabilities, arising from its resources and skills. These are necessary for the development of the market offer including a composition of logistic services to be presented in the market that is adequate to customers' expectations (Matwiejczuk, 2010).

A value chain is a proposal for a model of an enterprise as a system depicting its total value. The elementary units of this system are activities and the margin, defined as the surplus of revenues over the costs of activities necessary to achieve them (Czakon, 2004). The basic idea of the model is therefore to identify those forms of the enterprise activity that create pure value for the customer. In order to fully assess the value generated by an enterprise, which is the source of competitive advantage, the value generated by its individual departments, distinguished in the model, is analysed (Woźniak-Sobczak, 2007). The model is presented in Figure 1.

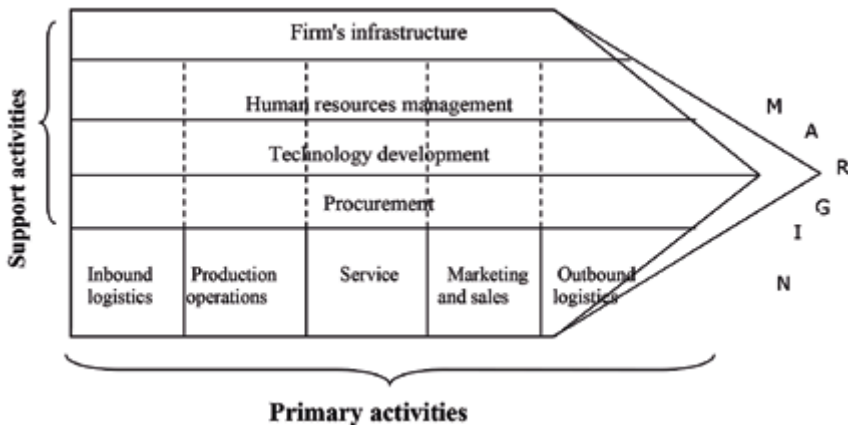


Figure 1: The value chain model

Source: (Porter, 2006).

Within the value chain, M.E. Porter isolated two types of activities which he defined as the primary processes, forming the value system, and support processes<sup>2</sup>. The share of these processes is not equal in the process of creating value for the buyer. Therefore, he isolates 3 groups of inbound activities within each of the nine types of activities. The first group includes activities directly creating value for the customer (e.g. assembly, sales, designing products, etc.).

<sup>2</sup> For more, see: (Chadam, 2012).

Another group are activities which create value indirectly and enable the constant implementation of direct activities (e.g. maintenance, administration, production planning, etc.). The third and last group comprises activities related to ensuring quality of the remaining activities (including monitoring, inspection, testing, control, etc.) (Porter, 2006).

It is worth noting that the presented division of activities is not universal, as it depends on the specificity of the activity of a given organisation and the conditions of its functioning. What follows is that the decomposition and classification of activities should take into account the individual characteristics of the business entity and each time this process proceeds according to different principles. Due to the fact that the implemented activities determine the success of the enterprise, their optimal location within the organisation should lead to the formation of the competitive advantage of the entity and as a result – to profit generation (Obłój, 2007). From this point of view, an important step is to identify the links between the above-mentioned activities. The links contribute to achieving the competitive advantage in two ways, namely through optimisation and coordination. By optimisation we understand the search for the best possible ways of performing activities in the adopted conditions, while coordination should consider cost reduction or contribute to the diversification of the offer. Coordination can be considered in the internal area (the so-called inter-functional coordination, which is aimed at the relationship between the activities of the enterprise) and the external area (the so-called vertical coordination, aimed at the relationship between the activities of the economic unit and its suppliers and customers) (Czakon, 2004).

Translating the above considerations into business practice, a value chain can be discussed in a broad context, which lets us take into account its three levels (Nita, 2008): the level of the economic path of the sector, the level of the enterprise value chain in the cross-section of processes and the level of activities. The economic path can be defined as a set of business entities, cooperating with each other to a various extent, who are suppliers, customers and distributors for each other. Each of the participants of this path influences the shaping of the value chain of other enterprises of the sector. It should also be borne in mind that selected business entities may comprise more than one link in the economic path. In contrast to the first level, the next level of a value chain focuses on individual enterprises which are a set of diverse processes. These processes can be understood as a sequence of activities that are performed in order to achieve a specific effect. The main task at this level is to ensure that the primary and support activities within the value chain are coordinated in such a way as to generate additional value. The next and at the same time the last level is created as a result of the disaggregation of processes into coordinated activities and

activities mutually connected by cause-effect relations. If an enterprise does not have the necessary resources to implement all activities at a high level, it should concentrate on those activities that provide the greatest value to the customer.

The primary activities of an enterprise that are related to value added fall into five categories (Figure 1). These are activities that are related to the procurement of raw materials and supplies, the physical manufacture of the product, its marketing, distribution to buyers, service, after-sales service. Each basic activity consumes outlays, human resources and technologies. In each of these activities, the enterprise also performs a number of separate activities that depend on the specific type of its activity (Porter, 2001). In this approach, the value chain should be regarded as a system of value-adding functions. The primary activities are primarily related to the physical processing of raw materials, materials and semi-finished products, and the delivery of manufactured products to customers, i.e. the entire transition from the acquisition of raw materials and materials to the delivery of the end product to the customer. These include (Figure 2) (Penc-Pietrzak, 2010):

- inbound logistics – planning transport from suppliers, acceptance, storage and distribution of raw materials, materials and components, stock control, preparing returns;
- production – processing raw materials and semi-finished products, including machining, assembly, testing and packing products, as well as maintenance of machines and devices;
- outbound logistics – storing and distributing products, as well as the provision of services, accepting and processing orders, planning supplies;
- marketing and sales – defining the assortment, pricing, choosing distribution channels, various forms of promotion, sales, settling invoices;
- after-sales services – service, installation, repairs, procurement of spare parts, training.

Support activities within the value chain concept concern mainly information processing, which accompanies the basic activity. Thus, we can consider the implementation of support activities as a broadly understood management process which is supposed to ensure the efficiency and effectiveness of primary activities, as well as the effectiveness of the organisation as a whole (Obłój, 2007). Support activities do not participate directly in value creation, but they perform the protective function for the progression of primary activities (Rokita, 2005). Support activities in the value chain include:

- supplies,
- development of technologies,
- human resources management,
- the enterprise infrastructure.

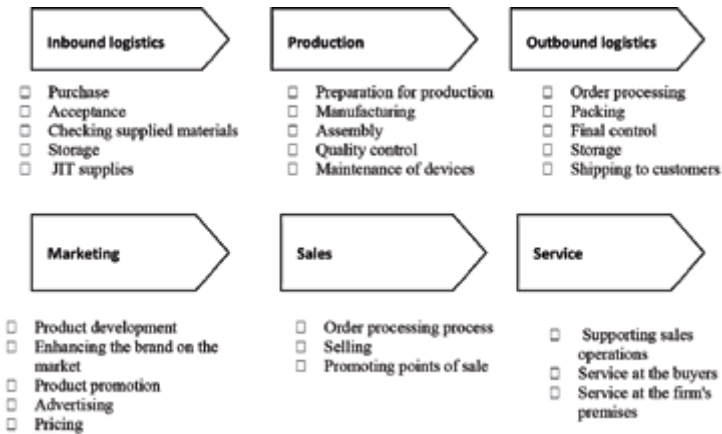


Figure 2: The primary activities in the value chain

Source: (Rokita, 2005).

Due to the fact that a value chain is a proposal of an enterprise model treated as a system, it is also subject to the management process which should, by definition, strive for the growth of effectiveness and the competitive advantage of the enterprise. An increase in the effectiveness of the value chain consists in achieving more beneficial economic results in time, and the efficient coordination of all activities undertaken in the chain. The coordination is achieved as a result of using generally applicable principles (routines) and formalised organisational procedures. J. Rokita (2005) pays attention to the fact that the growth of the effectiveness of the value chain is influenced by the following factors:

- economies of scale,
- the experience curve effect,
- the costs of acquiring key resources,
- links to other activities in the value chain,
- sharing opportunities,
- benefits from integration or outsourcing,
- timing benefits,
- high share of overhead costs in total costs,
- strategic choices and operational decisions.

### 3. The value chain analysis

In order to improve the effectiveness and rationality of the value chain management, it is analysed. It is a method to improve the sources of the effectiveness and efficiency of the enterprise, and first of all of the areas of



activities in which the enterprise has special manufacturing, technological, organisational, information, cooperation competences which can become the source of competitive advantage. Therefore, primary activities occurring in the value chain are of strategic importance to the enterprise, since as a result of their implementation value added is created. The key role assigned in the value chain to the spheres of R&D, production, marketing, logistics, as well as extra services provided to the customer, is related to creating specific types of utilities for the customer: the utility of form, the utility of time and place, as well as the utility of possession (Kotler, 2005).

Both in the theory and practice, the methodology of the value chain analysis is not unambiguously defined. Some authors express the view that such an analysis can be treated as an analysis of the system of cooperation between the links, which makes it possible to examine the activities carried out in the enterprise. It is complemented by an analysis of the costs and losses that arise at the level of all phases of the manufacturing process, as well as the suggestion of corrective actions that make up the competitive advantage strategy (Stabryła, 2007). Another approach to the discussed issue consists in distinguishing the following stages of the analysis (Gołębiowski, 2001):

1. The identification of important primary and support activities, as well as the formulation of the type and sources of a competitive advantage in these activities, the essence of which is defining the resources and skills determining the achievement of a competitive advantage with regard to costs or the diversification of the offer. When making the division (disaggregation) of the primary and support functions into individual groups of activities or activities, one should remember about the ability to isolate factors which contribute and maintain a competitive advantage and the influence of resources and skills on the value added creation. If an enterprise conducts diversified activity, the identification and analysis of the value chain must be performed for each product group or market separately;
2. The evaluation of the competitive position in every area of the activity of the business entity, which is based on defining the strengths and weaknesses of the functioning of a given enterprise against competition. From it conclusions should arise which will set the directions and ways of improving the effectiveness of the functioning within the value chains. Due to different sources of a competitive advantage (cost advantage and the offer diversification) in the process of the analysis of an organisation as a system of activities various techniques are used, however, in most cases, the prevailing importance of only one of them is noticed;
3. Drawing conclusion as for the directions and ways of improving the enterprise activity system.

The value chain analysis is used in the diagnostic procedures of enterprises due to the fact that enterprises, by engaging resources, create utility value for customers, the positive assessment of which forms the basis for generating revenues and surpluses, and at the same time the utility value for customers is created in a process in which the enterprise uses key skills that allow the greatest added value. To sum up, the value chain analysis allows organisations and their managers to assess the value-creating processes in the company, the degree of individual processes in the area of value creation and the processes that involve resources but do not contribute to value creation, while their correct implementation will cause an increase in value and chain efficiency (Urbanowska-Sojkin, Banaszyk & Witczak, 2001).

The use of the value chain analysis gives a possibility to make a division of the activity of the whole business entity into functions, both in the closer and further competitive environment. The performed decomposition may have a different level of detail, which allows to recognize the role of individual activities in increasing value for customers. Therefore, the value chain analysis has a lot of practical advantages. While making their synthesis we can mention the following ones (Stabryła & Wawak, 2012):

- it inclines to search for competitive advantages not only inside the entity but also in its nearest environment,
- it enables to build both resources and the skills of the enterprise,
- it puts pressure not only on accumulating resources and acquiring skills, but also on their innovative and efficient use,
- it allows for any level of detail – with the decomposition of each link of the chain into more detailed value chains, it gives the opportunity to reach specific teams and positions with the analysis,
- it allows for the professional analysis and the use of the analysis tools adjusted to the area of research, as a consequence enabling the synthesis of the results.

Contemporary strategic management treats gaining a competitive advantage as a challenge for every enterprise operating in the current turbulent environment, as it is related to the nature of all functions performed in the business entity. The effective implementation of individual tasks ensures continuous development of the company and the growth of its value. Therefore, it becomes important to identify the sources of a competitive advantage through a systematic analysis of all activities carried out within a given enterprise and the identification of relationships that occur between individual processes. One of the most effective tools for such an analysis is the concept of a value chain, which is based on the separation of strategic tasks through an analysis of the functioning of the

entire enterprise, allowing for understanding the principles of cost formation and specification of current and potential sources of advantage. To gain a competitive advantage by a business entity, an enterprise must perform one of its key tasks better or at a lower cost than its competitors (Porter, 2006).

The value chain concept refers to that of an economic path concept, enabling to trace a product from its raw material sources through all the economic links to the end user. Every enterprise is a link in a wider value chain, but it also creates an internal value chain itself. Using the value chain model, an enterprise can be presented in a simplified way as a sequence of activities, successive transformations of raw materials, materials, purchased technologies, services into end products, called core functions. These functions cannot be performed well without the existence of management and advisory activities called support functions. The integrated operation of the primary and support functions and their linking to the value chains of suppliers and buyers allows for profit making and the enterprise development. A very important benefit associated with the application of the value chain concept is an increase in revenues and profits of enterprises. Owing to efficient logistics and distribution, products are more available to meet customers' expectations. Proper sales service and marketing help to attract customers and provide them with incentives to purchase goods. The combination of reduced logistics and distribution costs and optimal, customer-oriented price levels contributes to the desired financial performance of companies.

#### **4. The business model in strategic value-based management**

Value chain management is therefore not a one-off act, but a process of improving the business model aimed at increasing value for the end user, while capturing the financial benefits of this to the greatest possible extent. Therefore, the configuration of the enterprise value chain must at the same time be closely linked to the business model, the adequacy of which implies the market success of the business identified with its permanent ability to compete, and the efficiency and effectiveness of its operation in terms of achieving its objectives. The business model is understood here as a unique configuration of different forms of economic resources of the enterprise and the ability to use them focused on the achievement of the desired objectives. The model reflects the logic of doing business along with exposing its originality in relation to competing entities and its ability to obtain a permanent competitive advantage. When explaining the nature and attributes of the business model one exposes the fact that it is a mechanism of creating and retaining value, achieving market success and exploiting business opportunities, as well as indicating the desired directions of enterprise development (Grabowska,

2015). The concepts of business models, changing over the decades, are the result of the process of evolution initiated as early as in the 1950s, which in the second decade of the present century led to the emergence of the issue of business model management as the key problem within this scope today, combining the theory and practice of managing organisations (Jabłoński, 2013).

The contemporary perspective of shaping business models orients them to the creation a permanent long-term ability to create value to the enterprise in the conditions of global competition and threats with crisis situations having their sources both in the economic zone (e.g. the global economic crisis of the first decade of the 21st century) and extra-economic one (the global crisis caused by the COVID-19 pandemic). In this context, a business model is perceived as the architecture of business activity focused on effective creation and delivery of value for a wide circle of the enterprise stakeholders (Brzóska & Jelonek, 2015). It is therefore no coincidence that when explaining the essence of the business model, its key importance is pointed out from the point of view of value creation, delivery and retention and the sustainability of the enterprise. Value generation thus becomes an essential attribute of the business model seen as a way to ensure the sustainability and stability of the enterprise and its ability to create value (Leviäkangas & Öörni, 2020). This way of understanding the essence of business model tasks exposes its strategic importance as an integrator of strategic choices, value networks and value creation and retention mechanisms. Such a trend in understanding the business model includes, among others, the definition formulated by M. Jabłoński. The author perceives a business model as a specific shape of relations between various resources and activities engaged in an enterprise, in which the logic of generating income is based on solid pillars thanks to a customer value proposition adequate to the market needs. It is supported by a strategy and an appropriately selected configuration of a value chain (Jabłoński, 2013).

At the same time, the experiences of recent crises show the need for the care for the creation of social and environmental value which are part of the idea of common value creation based on the concept of sustainable value-based management and a new imperative of value creation (Schoneveld, 2020). At the same time, it is a part of the postulate of the shaping of sustainable business models as hybrid, multi-paradigm models. Their foundation is a system megaparadigm, which together with a network paradigm describes the environment of the enterprise. The internal mechanism of the model functioning is based on the integration of the following paradigms: of sustainable business, corporate social responsibility, pro-value and financial one (Jabłoński, 2014). The sustainable business model is at the same time a holistic model, constructed based on the following driving forces (Jabłoński, 2014):

- conscious use of corporate social responsibility principles,
- economic sustainability of an enterprise,
- conscious use of corporate governance principles,
- influence of value creation and migration processes for stakeholders,
- consensualism in the relationship: management board – shareholders – stakeholders of the enterprise,
- implementation of sustainable strategy based on the BSC principles,
- balancing the enterprise intellectual capital,
- balancing the enterprise fixed assets,
- balancing the enterprise internal processes,
- management style based on the logic of conscious decision taking.

Improving a business model based on the concept of sustainable value-based management at the same time points to such a desired way of configuring the enterprise value chain which would favour the growth of benefits for a wide group of its stakeholders.

## 5. Conclusion

The use of the enterprise value chain for the needs of its value-based management bears a need for its linking to the recordable and non-recordable value drivers, as well as the enterprise value creation account. From the perspective of strategic value-based management it creates conditions to conduct a comprehensive analysis of the potential of the growth of enterprise value and on its basis indicating the scope of necessary actions focused on the activation of this potential in order to multiply the enterprise value. The integrative approach to the value chain, value drivers, as well as the account and strategy of enterprise value creation creates a framework structure for strategic value-based management using also such instruments as the analysis of enterprise value and value controlling (Jaki, 2017). In effect, it enables the identification and exemplification of complex mechanisms of enterprise value-based management.

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# CONTROLLING TOOLS IN SMALL AND MEDIUM-SIZED ENTERPRISE SECTOR<sup>1</sup>

## 1. Introduction

The concept of controlling was first recorded in 1242 (Konetzny, 2020). The word most likely came from the medieval method of checking accounts through a duplicate registry (Zvenyach, 2020). The main goal of controlling is the concept of providing management with tools and information in the management process of an entire enterprise, taking the coordination and course of the processes that are taking place in it into account (Brzezin, 2001).

Entrepreneurship is now recognized as the strongest economic force that has shaped the world. Over the past thirty years, Poland has undergone fundamental changes in its process of transition from a centrally controlled economy to a free market economy. This has led to the development of controlling tools that allow for the improved management of an enterprise; thus, this topic has become the subject of considerations in the entrepreneurial and scientific spheres. Therefore, it can be observed that the idea of controlling has spread to all of the significant sectors of the economy and areas of business activity (Steinhübel, 2020). Due to the challenges faced by businesses, the information demand of enterprises has significantly increased, and the implementation of tasks that are focused on an enterprise's result, its management process, and its supply of information facilitate controlling tasks (Krzemiński, 2017).

Since 1989, many studies have been carried out on controlling; these have focused primarily on describing methods and tools that are targeted at

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large enterprises. Meanwhile, small and medium-sized firms constitute the largest group of enterprises in the European Union. The concept of the small and medium-sized enterprise sector can be defined in a variety of ways in the literature on the subject. A. Bielawska believes that there are between 100 and 200 definitions of the small and medium-sized enterprise sector in specialist literature (Bielawska, 2015). The most common form of distinguishing small and medium-sized enterprises are size criteria such as the number of people employed or the net profit obtained within a specific time frame. Currently, the Polish sector of small and medium-sized enterprises is responsible for almost three-fourths of the country's share in generating GDP and creating more than half of its workplaces. Thus, this sector is of key importance for the Polish economy. At the same time, the research that has been undertaken in the area of controlling has very rarely concerned the indicated group, which results in deficiencies in the discussed area.

The aim of this work is to analyze the methods and tools of controlling in terms of their application in the sector of small and medium-sized enterprises. The main problem that was posed is related to the answer to the following question: What is the influence of the SME sector on the use of controlling tools? With reference to the main research problem, the following specific questions were identified:

- What is the impact on the size of an enterprise on its use of controlling tools?
- What is the main reason for the lack of using controlling tools in the SME sector?
- Is the use of controlling tools in the SME sector based on operational controlling tools?

In reference to the presented research problem, our main hypothesis was formulated: the size of an enterprise in the sector of small and medium-sized enterprises has a major impact on the types and forms of controlling tools that are used. Referring to the main hypothesis, the following detailed hypotheses were adopted:

- the size of an enterprise has a considerable influence on the use of controlling tools;
- the main reason for the lack of applying controlling tools in the sector of small and medium-sized enterprises is the lack of knowledge of the principles of controlling;
- the controlling tools that are used in the SME sector are mainly based on operational controlling.

In order to achieve the research goal, mixed methods were used; i.e., both qualitative and quantitative methodologies. The scope of this work covers those issues that are related to the use of controlling tools in the sector of small and medium-sized enterprises; we analyze them in a broader perspective (i.e., by taking other determinants that characterize an enterprise into account).

The subjective scope of the research covered 307 enterprises that are currently operating in Poland. The time scope of the research covered the months of January through June 2021.

The following methods of analysis were used in the work: studies of the literature on the subject, a theoretical analysis, a comparative analysis, and a statistical analysis. Secondary and primary data was used.

The primary data that was used in the study was collected by using an internet survey. The measurement tool was a questionnaire, and the obtained research results were supported by a simple in-depth statistical analysis. The statistical analysis of the results was performed with the use of IBM SPSS Statistics – Version 28.0.0.0 (190). The conducted analyses of the main components allowed us to isolate the artificial variables that are used to obtain homogeneous groups of enterprises (from the point of view of the presented tools).

As a result of the survey, the main hypothesis and detailed hypotheses were confirmed as part of the online survey questionnaire. The size of an enterprise in the sector of small and medium-sized enterprises had a significant impact on the types and forms of controlling tools that are used.

## 2. Materials and methods

The research goal was achieved through interviews that were the method of a diagnostic survey. The study was conducted by using a questionnaire as a data-collection method. The research period covered January through June 2021. The analyzed enterprises belonged to the sector of small and medium-sized enterprises and had their headquarters in Poland. The questionnaire was sent out in electronic form, and responses were obtained from 317 companies (10 of which provided missing or contradictory information, which resulted in their elimination from the pool of surveyed companies). Taking the above into account, the study covered 307 enterprises. The intention was to carry out research by using the random sampling method, which is presented in Table 1.

Table 1: Structure of analyzed enterprises and structure of sample

Description	Number of enterprises		Sample	
	Abundance	Group participation	Abundance	Group participation
Enterprises from SME sector	2,207,853	-	308	-
Type of enterprise				
Micro enterprises	2,144,162	97.11%	262	85.06%
Small enterprises	48,911	2.21%	34	11.03%
Medium-sized enterprises	14,780	0.66%	12	3.89%

Source: own study based on (Główny Urząd Statystyczny, 2020).

In order to analyze the data, the IBM SPSS Statistics program (Version 28.0.0.0 [190]) was used, in which the obtained test results were converted into cross-tables. On this basis, values such as the chi-square were calculated, which allowed for a comparison of the survey distribution with the theoretical distribution, the number of degrees the freedom (df) to observe the number of independent random variables, and the probability level (p) for the basic data control. The next step in the analysis was to check the correlation between the selected features, which was done by calculating the V. Cramér and contingency coefficients. These coefficients allowed us to determine the level of dependence between two nominal variables. The last point of analysis of the received data was to check the answers in terms of the size of the enterprise. This was done by analyzing the crosstabs obtained from IBM SPSS Statistics.

The data collected in the statistical software has been demonstrated in the form of a table (Table 2). The analysis of the probability level confirms that the presented results have statistically significant parameters, that permits for in-depth analysis by verifying the V. Cramér and contingency coefficients. Which allowed for the conclusion that the size of the surveyed enterprises had a large impact on having an implemented controlling system in the enterprise and an equally large impact on the awareness of what a controlling system is.

Table 2: Structure of analyzed enterprises and structure of sample

Question	Pearson's chi-squared test	df	p	Dependence	
				Cramér's V Coefficient	Contingency coefficient
The main activity of the enterprise	56.763	df = 4	p = <.001	0.304	0.395
The main industry of the enterprise	46.102	df = 26	p = 0.009	0.274	0.361
The main area of the company's activity	22.236	df = 6	p = 0.001	0.190	0.260
Competition in the company's core business	81.659	df = 4	p = <0.001	0.330	0.423
Type of enterprise	24.664	df = 2	p = <0.001	0.283	0.273
Number of employees in the enterprise	583.714	df = 6	p = <0.001	0.975	0.810
The period of operation of the enterprise	62.301	df = 10	p = <0.001	0.319	0.411
Does the company have an implemented controlling system	157.163	df = 4	p = <0.001	0.506	0.582
Do you know what a controlling system is	152.805	df = 4	p = <0.001	0.499	0.576

Source: own study.

Analyzing the correlation between the size of the surveyed enterprises and the awareness of what the controlling system is leads to the table presenting the categories of responses in terms of the size of the surveyed enterprise (Table 3). It shows that 92,3% micro, 7.7% small, and 0% medium-sized enterprises do not know what a controlling system is.

Table 3: Structure of analyzed enterprises and structure of sample

Specification		Do you know what a controlling system is?				In total	
		No		Yes			
		N	%	N	%	N	%
The size of the enterprise	Micro enterprise	227	92.3%	29	96.7%	256	92.8%
	Small enterprise	19	7.7%	0	0.0%	19	6.9%
	Medium enterprise	0	0.0%	1	3.3%	1	0.4%
In Total		246	100.0%	30	100.0%	276	100.0%

Source: own study.

The study consisted of 85.2% micro, 11.07% small, and 3.91% medium-sized enterprises (Table 4). This means that micro enterprises dominated the study, while small enterprises were represented to a much lesser extent; the number of medium-sized enterprises was marginal. Such a distribution of individual groups allowed us to keep a research sample that resembled the distribution of micro, small, and medium-sized enterprises in the Polish economy.

Table 4: Metrics of surveyed enterprises

Size of enterprise	Micro enterprises		Small enterprises		Medium-sized enterprises	
	85.2%		11.07%		3.91%	
Main activity	Trade		Production		Services	
	33.55%		20.52%		45.93%	
Competition	Small		Average		Big	
	31.60%		54.40%		13.01%	
Type of enterprise	Private			Public		
	99.67%			0.33%		
Basic area of activity	Sales of mass products (goods/services) to small number of customers		Selling mass products (goods/services) to multiple customers		Sale of special products (goods/services) to small number of customers	
	1.95%		46.91%		38.76%	
Period of activity on market	Up to 1 year	1–5 years	6–10 years	11–15 years	More than 15 years	
	24.10%	35.51%	21.82%	12.38%	6.19%	
Does company have implemented controlling system?	Yes		No		Unknown	
	9.77%		88.27%		1.95%	

Source: own study.

With regard to the main areas of activity, the responses of the respondents turned out to be in the order that occurs in the Polish economy; the largest number are services, then comes trade, and then production.

In the context of competition, 31.60% of the respondents indicated that they had little competition, while 54.40% marked an average amount, and 13.01% indicated that they had high competition. In terms of each company's core business:

- 46.91% – sales of mass products to many customers;
- 38.76% – special products to small numbers of customers;
- 12.38% – special products to many customers;
- 1.95% – mass products for small number of customers.

Regarding the period of each company's activity on the market, it should be noted that 24.10% of the companies were in their first year of operation. Taking such a short time horizon into account, this share is significant. Noteworthy was the high activity of entrepreneurs who started their activities on the market – 35.51% were enterprises that had been operating on the market for one to five years. The very large percentage of enterprises that had operated for fewer than five years can be confirmed by the statement that 80% of enterprises in Poland collapse within their first few years; thus, the share of enterprises that had operated on the market for up to several years was the highest. Enterprises that had operated on the market for 6 to 10 years accounted for 21.82% of the respondents, 11 to 15 years – 12.38%, and more than 15 years – 6.19%.

It is worth noting that, among the respondents, 88.27% of the enterprises did not have an implemented controlling system, 9.77% had an implemented controlling system, and 1.95% did not know whether they had an implemented controlling system or not.

### 3. Results

The following industries were analyzed during the course of the research:

- administration (4.23%);
- administration, electrotechnical, mining/quarrying (0.33%);
- construction (13.03%);
- construction, transport (0.33%);
- chemical (4.23%);
- electrotechnical (0.65%);
- energy/heating (0.33%);
- financial (11.40%);
- IT (12.70%);
- medical/pharmaceutical (5.54%);
- automotive (8.79%);
- consumer (27.04%);
- transport (4.89%);
- tourism/hospitality (6.51%).

The conducted research showed that, with an increase in the size of an enterprise, its use of controlling tools rises; this is due to the following factors:

- 1.53% of micro enterprises have implemented controlling system;
- 44.11% of small enterprises have implemented controlling system;
- 91.66% of medium-sized enterprises have implemented controlling system.

In order to examine the awareness of the principles and tools of controlling in the analyzed sector, those enterprises that did not have an implemented controlling system were asked about their knowledge of controlling systems (as shown in Figure 1).

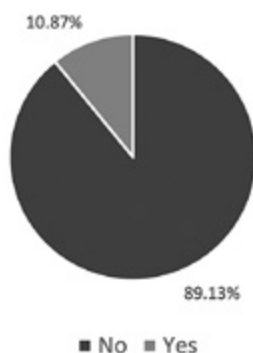


Figure 1: Do you know what a controlling system is?

Source: own study.

The conducted analyses showed that 10.87% of the surveyed enterprises knew what a controlling system was, while 89.13% of enterprises did not know it. This allows for the commencement of considerations regarding the promotion of methods and tools of controlling in the sector of small and medium-sized enterprises, with a strong emphasis on micro and small enterprises.

In the group of enterprises that decided not to implement controlling, 75% did not do it due to a lack of knowledge of the rules, 11% of the enterprises stated that they did not have adequate staffs, 6% indicated that they did not have sufficient financial resources, and 8% were not able to indicate the reason for their lack of implementing controlling systems in their enterprises (Figure 2).

In order to check whether enterprises that do not have implemented controlling systems encounter problems that could be significantly reduced or eliminated by said systems, a question was asked about the problems that had been encountered by the examined entities over the previous three months. The following responses were obtained:

- increased operating costs (65.7%);
- poor circulation of information in enterprise (25.6%);

- lack of detailed analysis of company's operations (27.1%);
- incorrect decisions issued by management (32.9%);
- no monitoring of revenues and/or costs (24.2%);
- low levels of employee involvement in achieving set goals (11.9%).

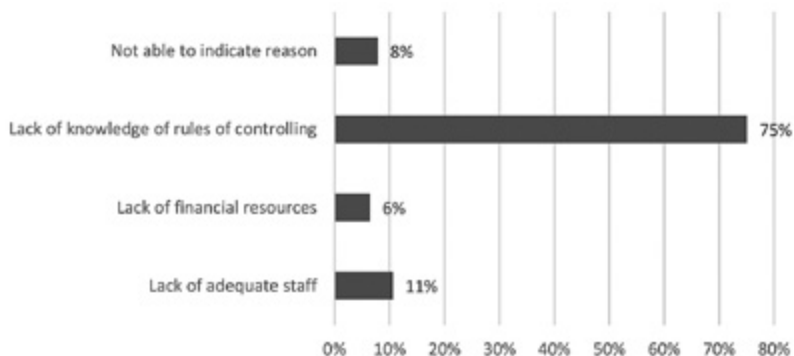


Figure 2: Why have enterprises not decided to use controlling methods?

Source: own study.

The presented structure allows us to show the significant impact that an implemented controlling system can have on firms from the sector of small and medium-sized enterprises.

With regard to those enterprises with an implemented controlling system, the following results were obtained (Figure 3):

- 20% of enterprises have had implemented controlling system for up to three years;
- 17% – for three to five years;
- 23% – for five to ten years;
- 40% – for more than ten years.

The surveyed companies mentioned the following controlling tools that they utilized:

- budgeting (100%);
- ABC analysis (54.54%);
- risk analysis (45.45%);
- kanban (9.09%);
- sales analysis (54.54%);
- benchmarking (27.27%);
- cash flow plan (27.27%).

The above-mentioned answers show that, among the main controlling tools in the sector of small and medium-sized enterprises, operational controlling tools are most often used.



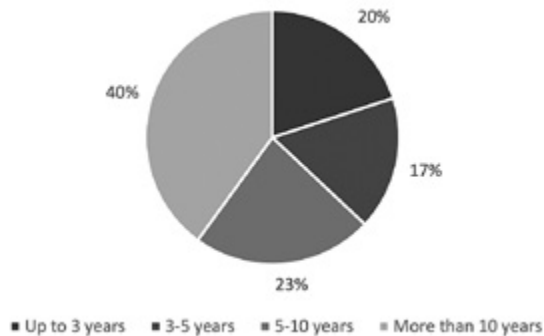


Figure 3: How long has the controlling system been implemented?

Source: own study.

In the area of satisfaction with the methods of controlling utilized (Figure 4), 50% of the respondents said that controlling rather met their expectations, 36.67% indicated that controlling definitely met their expectations, 3.33% had no opinion, 3.33% said that it rather did not meet their expectations, and 6.67% indicated that it definitely did not meet their expectations. This allows one to notice that 86.67% of the respondents were satisfied with their applied controlling systems to some extent.

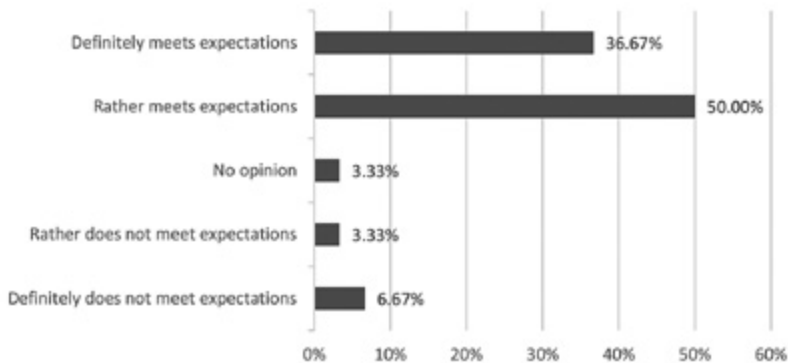


Figure 4: Does controlling meet the users' expectations?

Source: own study.

In the context of the planned development of controlling, 46.67% of the enterprises plan to further develop their controlling, 33.33% do not know whether they plan to further develop their controlling, and 20% do not plan any further development of their controlling (Figure 5).

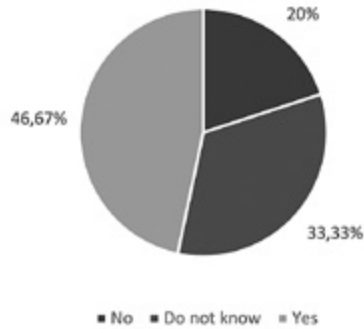


Figure 5: Do you plan to further develop controlling in the company?

Source: own study.

As a result of the conducted research, the main hypothesis was confirmed. The size of an enterprise has a significant influence on the types and forms of the controlling tools that are utilized. The detailed hypotheses were also confirmed: the size of an enterprise has a large impact on the controlling tools used, the main reason for the lack of using a controlling tool in the SME sector is a lack of knowledge of the principles of controlling, and the controlling tools that are used in the SME sector are mainly based on operational controlling.

#### 4. Discussion

There are a number of reasons for implementing controlling methods (including the following):

- providing complete and consistent information about company's operations;
- implementation of clear form of reporting;
- control over financial liquidity;
- improvement of planning in enterprise;
- warning about potential hazard;
- improvement of information flow in enterprise;
- improving effectiveness of management;
- having complete financial data and additional information;
- improved control over company's costs;
- improvement of company's operational activity;
- improvement of human resources organization;
- current tracking of trends.

Characterized by different structures, flat hierarchies, and short decision-making paths, the sector of small and medium-sized enterprises differs significantly from the sector of large enterprises; therefore, a controlling

system should be properly adapted to the needs of a company. In this regard, a controlling unit should take on a non-institutional form, and the functions of the controller should be performed by an owner, a cost specialist, or a chief accountant (depending on the size and human resources of a company).

The next issue is the controlling tools that are supposed to answer the problems that are faced by firms in the sector of small and medium-sized enterprises. In this case, it is worth paying attention to the division of controlling in terms of strategic, operational, and functional controlling. In order to not burden employees with additional tasks, strategic controlling tools should be used one time over a longer period of time, and operational and functional controlling tools should be utilized once a month.

Strategic controlling is extremely extensive in terms of its tasks and methods; it provides good support for the long-term planning and management of a company (especially during periods of uncertainty). The recommended tools for the SME sector include the following:

- A portfolio analysis that allows a company to formulate decisions regarding the offered assortment. This method allows a firm to define a competitive advantage and a potential threat, which result in a strong competitive advantage.
- Benchmarking based on a search for exemplary ways of proceeding by comparing the results of one's own activities and effectiveness with the results of competing companies that are considered to be the authorities to follow. This can help a firm gain a strong competitive advantage.
- A dashboard in its basic form that allows for an automatic analysis of indicators in such areas as customer satisfaction, management process, and human resource management.
- A company that decides to implement controlling tools should also consider business process re-engineering in order to transform its existing business processes. This allows for improved functioning.

Operational controlling is the foundation of dealing with all of a company's key business data and by acting largely internally, analyzing cash flows, and comparing plans to reality. The operational controlling tools that are recommended for the small and medium-sized enterprise sector include the following:

- Budgeting as the basic tool that should be used by an enterprise. By creating many budgets for individual units and one main budget, this allows a firm to compare its current state with a planned one as well as an analysis of any deviations. This is an important element of enterprise management.
- ABC analysis that allows for an analysis of the assortment that is offered by a company. This greatly facilitates management.
- Sales analysis that consists of collecting information on a firm's products or services that are sold as well as the various factors that determine its

increase or decrease in sales. This allows for reaching selected groups of customers better with one's offered products or services.

- Break-even point analysis (which means one's sales volume is equal to one's production volume). A firm's break-even point can be analyzed in terms of the amount of revenue that is required from the sale of products or services to cover its total costs.

Functional controlling should be adapted to the main activity of an enterprise; this allows for its overall coordination through analyses of a firm's individual results. In addition, this should respond to the problems of a given company by matching issues such as a high turnover of employees with personnel controlling or high logistics costs with logistics controlling.

It is also worth considering methods that are aimed at popularizing controlling among the small and medium-sized enterprises sector; this can be done by the following:

- organizing webinars by specialists that are aimed at sector of small and medium-sized enterprises;
- publishing scientific articles on controlling tools that are aimed at sector of small and medium-sized enterprises;
- publishing compendiums on controlling in sector of small and medium-sized enterprises;
- promoting controlling in sector of small and medium-sized enterprises as part of talks and discussions;
- making people aware of existence of controlling tools during talks and discussions;
- organizing courses on application of controlling in sector of small and medium-sized enterprises.

On the basis of the presented methods and tools of controlling, its organization in the structure of a company, and the ways to promote it, it can be seen that controlling can be used in the sector of small and medium-sized enterprises. This can significantly change the market functioning of these enterprises and providing a lot of information that will allow them to make the right decisions that support their development.

## 5. Conclusion

The conducted research allowed us to indicate the use of controlling tools in the sector of small and medium-sized enterprises. The aim of the work was to analyze the methods and tools of controlling in terms of their application in the sector of small and medium-sized enterprises. As a result of the survey, the main hypothesis and detailed hypotheses were confirmed as part of an internet

questionnaire that was conducted on a group of 307 enterprises from the small and medium-sized enterprise sector who do their business in Poland. The size of an enterprise in the sector of small and medium-sized enterprises has a significant impact on the types and forms of controlling tools that are used. Additionally, all of the detailed hypotheses were confirmed:

- The size of an enterprise has a great influence on the use of controlling tools.
- The main reason for the lack of the application of controlling tools in the sector of small and medium-sized enterprises is a lack of knowledge of the principles of controlling.
- The controlling tools that are used in the SME sector are mainly based on operational controlling.

Enterprises that do not have an implemented controlling system encounter numerous problems that can be solved by controlling tools and methods. Additionally, the main reason for not using controlling methods is a lack of knowledge of its rules.

It is advantageous that 46.67% of the studied companies that have implemented controlling are planning for their further development. Additionally, among the 50% of those enterprises with an implemented controlling system, they believe that it rather meets their expectations, and 36.67% of them believe that controlling definitely meets their expectations.

A negative aspect that is worth paying attention to is that 89.13% of the studied enterprises do not know what controlling is; this shows how important the issue of promoting controlling is in the small and medium-sized enterprises sector. This is especially true in the group of micro enterprises, where only 1.53% of these studied firms have an implemented controlling system.

Therefore, taking measures to promote controlling in firms from the small and medium-sized enterprise sector is recommended; this would make it easier to solve some of the problems that they encounter. For this purpose, it might be worth preparing a training system in the area of controlling. Conducting research on improving the results of enterprises that have decided to implement a controlling system would also be worthy of consideration.

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# CONTROLLING AND THE VUCA WORLD – A FEW REFLECTIONS

## 1. Introduction

It is a natural state of affairs for human nature to establish cognitive contact with the surrounding reality. These relations are not only cognitive in a receptive sense, but above all should be reflective. It has all the hallmarks of the so-called cognition doubly reflected on the cognitive axis, the subject of the cognition (Krapiec, 1998). Cognition of this nature is, in its immanent nature, to answer the question why. It is supposed to lead not only to the discovery of mechanisms and processes leading to the existing state, but also to anticipate the reality *pro futura*. In the history of mankind, many different types of real entities (machines, devices) and mental concepts have been created to help in the description of reality and anticipate what may happen in the future. One of such emanations of the anthropogenic and anthropomorphic architecture of the contemporary reality of cognition is the world of organization and the concept of managing them. Organizations understood as human creations, both in the private and public sectors, defined as enterprises.

The history of management shows many vicissitudes related to a specific struggle for both survival and development. Speaking in the language of cybernetics, constant counteracting the entropy of systems, in this case created by man (Kępiński, 2015). Management has in its range many different methods and concepts that are designed to properly guide the organization towards development. One of them is controlling, which fulfilled its tasks quite well in the retrospective perspective. The 21st century, whose specific rather dramatic beginning was the COVID-19 pandemic in figurative terms, led to a breakthrough, especially in the sphere of mental understanding of the world

and a re-evaluation of the quality of the processes occurring in it. It turned out that the contemporary anthropogenic world is characterized not only by changeability and unpredictability, but also by a large volume of chaos. Some incorporation is the VUCA concept, which has largely led to the so-called agile thinking properly in all social areas, including management. With regard to the concept of management, which is controlling, it can be said that the pandemic has implied a significant exposure of petrified and not very mobile thinking about the organization. It turns out that there are no and there will be no universal concepts, everything is in a specific *statu nascendi*. From the perspective of cardinal principles, one can ask whether the world has changed and complicated so much, preventing its perception or eroding human thinking, which prevents the correct reception and processing of information. The study is an attempt to refer to the issue of the changing world of the organization in the context of controlling and the concept of agility (Beck et al, 2001).

## 2. Substantive and formal structure of the study

The study is of an overview character. It concerns the issue of controlling in the perspective of contemporary changes in management, which is exemplified by the concept of agility. The text does not explain the primary concepts related to controlling. It is limited to explaining the controlling way of thinking about the enterprise to the extent that is needed to maintain the decorum of the study. In order to maintain the consistency of the text, a semantic field has been outlined in terms of the clue of the issues raised. The problem of the variability of the contemporary world in the context of the problems that arise from it is explained. In addition, one of the most important ways of dealing with the disadvantages of redundancy and variability has been explored. This problem was explained in the context of the VUCA model and such so-called agile methods such as Cynefin Framework. The role of revolution 4.0 and the COVID -19 pandemic, which seems to have become an accelerator of these transformations, was also emphasized. The topic relates to the issue of controlling in relation to the hyper volatility of the world. The author tried to emphasize the flexibility of the concept of the controlling way of thinking about the organization in a broad sense. The problem of controlling and agile methods was also highlighted in the context of cybernetics and metacybernetics, which, being a science of control at its core, bears the features of agility, although they are expressed in other terms (Huber, 2015).

The text was prepared on the basis of his own reflections, which were preceded by a query of literature sources from a fairly wide conceptual range. It is an expression of the author's interest, which focus on the area of modern management methods, in which controlling appears to be one of the most



universal methods supporting and directing the organization to the optimal solution of management problems.

### **3. Controlling and the variability of the surrounding world**

Controlling is part of a management concept that is characterized by an extraordinary degree of plasticity and flexibility. Attributes that are inscribed in the essence of the organization are the cloud of controlling. These features are: volatility, agility and striving for optimal use of available resources. One of the main arguments confirming this thesis is the functioning of controlling in organizations of different origins, practically from the beginnings of modern management science. A certain recapitulation in this area is the definition of controlling in a metacybernetic perspective, which is based not only on the concept of cybernetics, but also on a deeper conceptualization of the issue. As far as the concept of controlling is concerned, this seems to be the most accurate essence of this management concept. The metacybernetic relations in this respect can be made concrete that the present states do not depend only on the present states, but on the past and future states of reality (Kossecki, 2005). This is most visualized in the phenomenon of feedback and feed forward loops, which are the basis for dynamic and projective thinking in controlling terms (Lehman et al 2021).

The modern world is characterized by an extraordinary degree of volatility. Heraclitus of Ephesus, who is considered to be the progenitor of reflection on the changeability of the world, could be proud of his thoughts observing what is happening at the present time.

The recent time, undoubtedly related to the COVID -19 pandemic and its consequences, has introduced a lot of turbulence into the broadly understood world of social life. The organizational dimension is one of those areas in which thinking has been reformatted. For many years, controller circles have been wondering about the transformations in terms of the essence of controlling and its role in the enterprise. Taking into account the two main approaches in this regard, i.e. the narrow American one and the broad German one, it has been channeled into the issue of digitization. The digitization of the surrounding reality branches off into many areas and one can risk a thesis that it has a comprehensive character. The currently fashionable subject of revolution 4.0 takes up the subject of the breadth and depth of digitization of the modern world. The argument for the holistic process of phenomena related to digitization is provided by retrospection and experiences related to earlier revolutions. Similar problems occurred in the era of the second industrial revolution in the field of electrification. As it turned out, in order for the entire system to function

relatively well, the processes of implementing electric current had to occur in all areas of the broadly understood socio-economic system.

In terms of controlling, a significant crisis occurred in many levels of this concept. One can observe the transformation of traditional controlling from a business partner to controlling as a permanent element of the company's business (Weber, 2021). In traditional controlling, there is a belief that the controller is a kind of economic conscience of the organization, but is generally an "objective" advisor. J. Nesterak, who calls Weber's concept management or participatory controlling, has a similar reference to contemporary controlling (Nesterak 2015).

#### 4. The concept of agility in the organization and VUCA controlling

One of the most important determinants of an organization's ability to adapt to volatility is organizational agility. The concept of management agility is not new. However, this is not a term originally derived from the sciences of organization and management. The idea of agility is an original construction on the provenance of computer science. It was assumed that the so-called *Agile Manifesto*, *Manifesto for agile software development*, was created in February 2001 at the Snowbird center in Utah during a meeting of IT specialists. Programmers participating in the meeting discussed alternative methods in terms of new alternative programming concepts in relation to the cascade creation of computer programs.

It should be noted that the *Agility Manifesto* is about computer software development. It is a set of many programming methods, the common denominator of which is the departure from schematic thinking in principles (Beck, Kent, et al, 2001). From the model point of view, the concept of agility in an organization does not differ much from the essence from the original defined by the developer community. It can be stated that in relation to the enterprise and controlling, the agility concept focuses on flexibility and departure from petrified thinking towards the most effective use of the creative potential of the organization. However, the most important clou of the new concept is the action that is to react quickly to changes (Kałkowska, et al, 2013).

As it seems, the whole concept of agile is a derivative of adapting to the prevailing conditions in the environment of the organization. In the literature, there is the so-called The VUCA model that describes the conditions in which organizations operate quite well. VUCA is an acronym for Volatility, Uncertainty, Complexity and Ambiguity.

This concept is, in fact, to show the internal and external conditions in which modern organizations operate. In other words, in the VUCA model there is a fairly constructive synthesis of the quite often used phrase about the turbulence

and unpredictability of the organization's environment. For controlling and the aspect of agility treated holistically, it is important to be aware that each plan and, as a rule, each operating model is characterized by a high degree of uncertainty and temporality. It is also impossible to treat the reality of the enterprise in an extremely agnostic way. The surrounding world has, in its nature, an inherent fractality, i.e. a certain type of repetition based on a greater or lesser similarity. This means that you can define a certain area of similar factors of circumstances by adjusting the appropriate activities in the management of the organization. As is often the case in management sciences, the VUCA model is not an original concept in the field of management. The concept of VUCA, which was to describe the world of organizations in the early twenty-first century, was taken from the military. The term VUCA is the idea of the US Army War College from the 1990s to describe the world situation in the context of geopolitics after the end of the Cold War (U.S. Army Heritage...) The authors of this concept are the theorists of military leadership W. Bennis and B. Nanus, who used the term for the first time in 1987. The authors of this concept assumed that it is difficult to deny it by observing the world that one needs to adequately sense actions in a world based on unpredictability and the associated risk taking. To use a more subtle term, the implication of VUCA is called Profiling uncertainty both in the operational, tactical and strategic dimensions. The description of individual elements of the VUCA model is presented in figure 1.



Figure 1: The VUCA Model (Concept) Framework

Source: Bennett N., Lemoine G.J. (2014), Harvard Business Review, Vol. 92, No. 1/2, p. 27.

Volatility – defines the pace and speed of changes that the company experiences in the surrounding environment. These are, for example, changes

taking place in the market, including rising or falling prices for products and services that may occur at unpredictable times. Such changes require quick decision-making and immediate action (O. Mack et al. 2016, pp. 5–6). Uncertainty – the inability to predict situations and events that may occur. It is caused by the variability of the environment or the lack of sufficient knowledge to assess the consequences of events. The key in this case is the information resources possessed, which the company must constantly expand in order to be able to create patterns that can contribute to determining the consequences of the situation (Bennett, Lemoine 2014). Complexity – along with variability and uncertainty, there is complexity regarding the functioning of the environment. It consists of a network of information and procedures, a variety of problems that may occur and the absence of a cause-and-effect effect. Complexity can be defined as the situation where different companies may obtain different results despite using the same procedures. When it comes to making decisions, it is important to take into account many factors (Mack et al. 2016). Ambiguity – is associated with a disturbed sequence of cause and effect, which causes a disturbance in the perception of reality, its incorrect understanding

It is not difficult to guess that 20 years after the Agile Manifesto was published, the topic has been thoroughly worked out in all areas of science, including the area of organization and management. The variability of the surrounding world, expressed by the VUCA model, forces controlling of appropriate adaptive reactions (Schäffer and Weber, 2019). It is understandable that in the area of controlling also the issue of agility is quite widely discussed and analyzed. This applies not only to the implementation of terminology, but also to the real and authentic implementation of the agility concept in the area of controlling. Controlling, which is especially in the German perspective, a holistic sum of an enterprise, an organization, had to react to the factors resulting from VUCA. It is a huge challenge for controlling and for the entire organization, the effects of which are felt for all elements of the enterprise system (Scheaffer, Webber, 2019). In the case of controlling, in order to face the problems resulting from VUCA, it seems necessary to use all available tools to optimally achieve the goals of the organization.

Author of many bestsellers in the field of management, Bob Johansen in the work entitled *Leaders Make the Future: Ten New Leadership Skills for an Uncertain World* formulated a fairly practical response to VUCA. This concept was referred to by Johansen as VUCA prime (Johansen 2012). In the literal sense, the author of this concept contrasts each element of VUCA with, or rather gives some kind of algorithm, how to overcome quite pejorative factors resulting from VUCA. These are: Vision, Understanding, Clarity, and Agility. Recapitulating Johansen's thought, it can be concluded that the proposed concept is an action aimed at

giving meaning to the activities of the organization in the contemporary world. It is not difficult to guess that in most organizations, and generally in the minds of management, as a result of information redundancy, there exists and develops cognitive dissonance. Johansen’s concept is essentially to lead to:

1. creating conditions for the creation of such a vision of the organization’s operation that is realistic in the given conditions,
2. improving the functioning of information channels in the organization, both vertically and horizontally
3. creating such mechanisms and models of operation within the organization that will lead to the optimal functioning of the pro futura.

Another, apart from Johansen’s concept, is the Snowden model known as Cynefin model or Cynefin framework. Colloquially in managerial circles it is called the method of sensing reality, especially the world of the organization. From a theoretical point of view, Snowden’s concept is an eclectic synthesis of complexity theory, system theory, learning theory, network theory and many others from the field of sociology and management psychology (Snowden, 2007). Graphically, the concept of Snowden is shown in Figure 2.

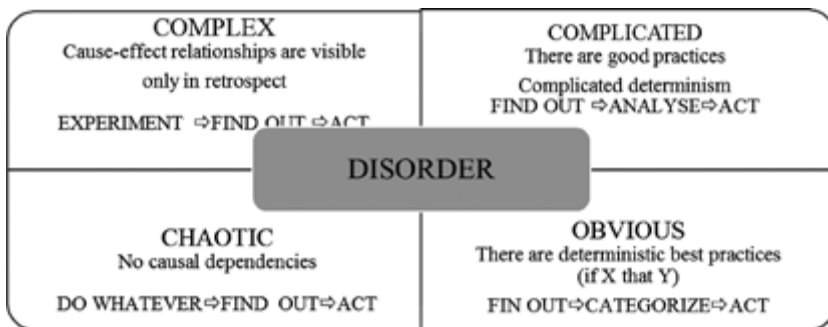


Figure 2: The Cynefin-Framework (Model)

Source: D J. Snowden, M E. Boone., (2007), *A Leader’s Framework for Decision Making*, 85 (11): pp. 68–76

The concept of Cynefin assumes that people are by nature quite unpredictable, they are guided in the decision-making process by emotions rather than rational premises. The decision makers believe that the choices are dictated by the ratio. As a consequence, it leads to the so-called rationalizing actions, but after the decisions made and the consequences of certain choices.

The first square concerns the simplest things by nature, because the classic cause-effect principle applies here. If the problem is defined as simple, it can be logically solved in this way. It is an open question, however, what will happen if the obstacle is categorized as easy and in fact it turns out to be completely different. This plane is guided by the slogan “best practices”

Another area is the complication dimension. This plane is naturally characterized by complete determinism, while the enormity of the issues and factors of influence is very large. In such a situation, it is necessary to take into account the many variants of solving the problem.

The next square is related to complex problems where the cause-effect relationship is exposed as much as possible, but it is only visible from the perspective of retrospect. There are many factors related to the problem, they overlap in time and space. Real-time observation does not give a clear insight into the situation. Conclusions come to mind only after some time of reflection how and why something happened

The last fourth element, that is the aspect of chaos, is very often associated with the concept of the so-called “Black Swan” of Nassim Taleb. This concept assumes the possibility of the emergence of such a factor that, although inherently irrelevant in the given conditions, may become the dominant feature of the entire system. Most importantly, the probability of the occurrence of such a factor is very small. In retrospect, it seems that N. Taleb’s concept is not really unusual. However, it gives a quite significant impulse for a holistic rethinking of all aspects of planning. Using the terminology of cybernetics and controlling, he reformats the aspect of *feedback* quite thoroughly. Fundament in controlling thinking. Taleb’s thought can be concluded pejoratively that the future cannot be predicted in any rational way. Going beyond the scientific discourse, one can give a grotesque answer to the question of what in the public space, even at the level of serious state services, function “court” dream readers, or clairvoyants.

## 5. Conclusion

The founder of the Polish school of cybernetics, M. Mazur, used to say about all theories and concepts created by man that they are all characterized by error, and what differs them is the level of error. The concepts of agile management in connection with controlling presented in the study are also subject to this conclusion. This means that the problems that arise from managing an organization with an emphasis on psychological and social aspects can only be solved to some extent by the described methods of the Cynefin framework, VUCA Prime or by controlling in genere. In the world functioning in many areas on the verge of chaos, the creator of the Cynefin D. Snowden method himself stated that the concept he invented is not some intellectual perpetual motion machine for all problems in the world. It is an instrument that can help in solving many problems. However, it requires, first of all, a good understanding of the rules of its functioning and, most importantly, the most difficult applications at the right moment in strictly defined conditions. Controlling, which after the first wave of

the pandemic met, to put it simply, all the criteria of the post-traumatic shock syndrome to a large extent had to collide with the reality, perhaps not new, but quite specific. This difference consisted in the quite unexpected use of the Taleb's term of the appearance of the „Black Swan” (Taleb, 2007). There were statements in the press as to whether controlling was dead or still alive. However, this was not a designation referring only to controlling, because the entire anthropogenic and anthropomorphic reality was under the influence of the stressor in the form of the first-pass effect of the COVID-19 pandemic. The organizational system supported by controlling reacted, as empirical evidence shows, in a natural and typical manner. *Primo loco*, the oldest mechanisms, phylogenetically oriented towards survival, were activated. Maintain liquidity at all selling prices despite broken supply chains. The second stage, which can also be observed in time, is reflection on everything that happened and reflections for the future parameterized by the reformatted reality. Controllers, especially in the area of holistic controlling (German), may feel somewhat disgusted, because the COVID-19 pandemic has exposed, not only in this area, quite conservative behavior of the controllers. Speaking colloquially, a lot was said and even anticipated, but it did not translate into appropriate actions in real time. A kind of recapitulation of the issue is the conclusion that in terms of the basic matter of controlling, which is focused on the future. The main problem lies in the operationalization of controlling. One can get the impression that controlling is a management method that thought nothing new, but assimilates operationalization from other areas. Quite risky saying that he is simply stealing ideas from other areas of knowledge and empiricism. Controlling, especially in the holistic (German) approach, has largely petrified, which was revealed by the COVID-19 pandemic, becoming a kind of fetish for many narcissistic entrepreneurs. The present state of the matter underlines that what should be changed is the way of thinking about agility. Controllers should focus on changing the posture from a self-righteous and uncritical belief in their abilities towards a humble recognition of the handicaps of their nature, careful observation of reality, flexibly using all generated opportunities. Directly speaking, it is a shift towards agile thinking.

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# MANAGEMENT INFORMATION SYSTEM IN CONTROLLING AS EXEMPLIFIED BY EUROBENT SP. Z O.O.

## 1. Introduction

The main task of management information is to support the management in effective decision-making. The most important features of good information are: being up to date, usefulness, flexible structure, variety and use for the company's own purposes. The fundamental issue for management information is the method of accounting for costs and revenues, since it is the main factor responsible for collecting key data. Well-designed recording methods should indicate the issues that should be given special attention. The essential features of management information are the usefulness of its content and being up to date. These should be in symbiosis. The fact that the information is up to date allows you to quickly rectify any irregularities observed, which in turn will increase the probability of making the right decision. In order to keep all management information up-to-date, the entire information exchange system in the company should be optimized. In modern world, this boils down to the requirements for the functionality of the IT system.

The purpose of the publication is to present the design of the management accounting system, whose quality is the basis for reliable management reporting. Adequate preparation, determined by management controlling standards,

supports the process of making the right decisions in management. The paper uses the example of a production company where the solution presented herein was implemented. It is based on the authors' own experience, supported by the analysis of the available literature on the subject.

## **2. The management information system in management controlling**

Typically, a standard chart of accounts in financial accounting has two dimensions. In the first one, costs are recorded according to their generic characteristics. The second dimension allows for functional recording: by type of activity (primary, auxiliary, management, etc.) and cost centres (departments, divisions and others). However, the requirements of modern controlling tools are much bigger and it is necessary to introduce serious modifications both directly in the chart of accounts and in the manner of recording. A number of new cost classifiers should be designed, such as process, project, order, funding source, and more. Significant structural changes must be made to the set of five costs. The traditional, tree-like chart of accounts does not allow for multi-dimensional cost analysis. The dimension (feature, attribute) for the cost was a branch, department, project, source of financing, type of cost and others. This information should not be on separate accounting accounts. For this reason, the majority of information systems form the so-called dictionaries. They are additional tables where the information about the company's organizational structure, projects, processes and others is stored. When assigning a cost document, the information system allows you to provide these additional "features" for the amount recorded. Such a solution does not interfere with the basic accounting functions resulting from the Accounting Act, but provides additional information as regards the management controlling system (figure 1). There is a peer-to-peer rule between segments not connected with a "pause". Between the segments connected with "pause", the rule "only with parent" applies, just as in synthesis and analytics.

Certain companies advanced in management accounting decide on the radical solution of ceasing to record costs in the team. At the same time, they assume that conducting generic analytics in team 5 is sufficient to prepare a profit and loss account using the comparative method and to create statements for the needs of settlements resulting from public law. The immediate benefit of such a solution is the simplification of the assignment process. The costs are immediately posted to team 5, without the need to post them in the team and then settle them to team 5. It is not a solution recommended by management controlling standards.

Having a transparent system for calculating the cost of a product, service or product is a prerequisite for creating effective result control mechanisms,

which is the basis for controlling. The decomposition of the unit cost allows you to determine the price on the basis of the so-called cost margins. The issue concerns mainly indirect costs for which distribution lists should be developed for individual cost objects (products, goods and services). The priority task is to design the system so that it is able to generate reliable information on the total unit cost and on the structure of the product, service or goods. Thus, by setting the price, the manager of the responsibility centre acquires knowledge about the level of profit that he has generated for the company or about what part of the costs has been covered by him.

ACCOUNT FORMATION COSTS																
ACTIVITY TYPE			DEPARTMENT / BRANCH			TASK			COST TYPE			COST ANALYTICS				
5						0	0	1	4		-			-		

DICTIONARIES	
--------------	--

NUMBER	TYPE OF ACTIVITY	
5 0 1	Costs of core activities	
5 0 2	Costs of core production activities	
5 0 3	Costs of core services	
5 0 4	Cost of core trading activities	
5 1 0	Costs by department	
5 2 0	Purchasing costs	
5 3 0	Sale costs	
5 4 0	Trading costs	
5 5 0	Costs of auxiliary activities	
5 8 0	Costs of management	
5 9 0	Costs of business activity	
5 --	---	

NUMBER	DEPARTMENT / DIVISION	
1 0 0	Management	
2 1 0	Department 1	
2 2 0	Department 2	
2 3 0	Department 5	
2 4 0	Department ...	
2 0 0	Mechanical workshop 1	
2 1 0	Mechanical workshop 2	
3 0 0	Property Management Department	
3 5 0	Construction Teams Department	
4 0 0	Renovation Department 1	
4 1 0	Renovation Department 2	
9 --	---	

NUMBER	TASK	DEPARTMENT
0 0 1	Name of the task 1	210
0 0 2	Name of the task 2	210
0 --	Name of the task ...	210
0 0 1	Name of the task 1	350
0 0 2	Name of the task 2	410
0 --	Name of the task ...	---

ACCOUNT FORMATION REVENUES																
TYPE OF ACTIVITY			DEPARTMENT / BRANCH			TASK										
7						0	0	1								

DICTIONARIES	
--------------	--

NUMBER	TYPE OF ACTIVITY	
7 0 1	Sale of core activities	
7 0 2	Sale of production activities	
7 0 3	Sale of services	
7 0 4	Sale of trading activities	
7 1 0	Sale of other operating activities	
7 --	---	

NUMBER	TASK	DEPARTMENT
1 0 0	Management	
2 1 0	Department 1	
2 2 0	Department 2	
3 3 0	Project 1	
3 4 0	Project 2	
8 --	---	

NUMBER	TASK	DEPARTMENT
0 0 1	Name of task 1	210
0 0 2	Name of task 2	210
0 --	Name of task ...	210
0 0 1	Name of task 1	350
0 --	Name of task ...	---

Figure 1: Account formation project for controlling purposes  
 Source: Nesterak 2015, p. 144.

### 3. Process-based approach as a determinant of reliable management information

The evolution of controlling shows the way in which controlling tasks carried out in an organization are modified by internal and external factors (Kalmar 2017). Thus, controllers can be assigned the task of continuous monitoring of the course of business processes in order to better understand the financial dependencies occurring within the enterprise. The role of the business process and related knowledge is also crucial in risk analysis and monitoring (Bedard at al., 2008; Serafin, 2015). Stanik and Kiedrowicz (2017) present a methodology for identifying and estimating risk in business processes, where the first component is business process mapping, including identification and grouping of business processes. That is why it seems so important to address the issue of Business Process Management (Dumas at al., 2013; Weske 2007; van der Aalst at al., 2016) with educational programs aimed at controllers (Buh et al. 2015).

The process-based approach is the foundation of the mechanism for calculating a reliable unit cost and forces the need to assign each generated cost to the appropriate responsibility centre and to a specific process or project it concerns. It is also important to detail the type system of costs. Without such changes, it is rather impossible to obtain reliable information, and this is required by management controlling. The *Activity Based Costing* (ABC) method is currently the most popular concept on the market for calculating not only the unit cost, but also monitoring the costs of processes and activities in the enterprise (Figure 2), which is recommended by management controlling and process approach in management.

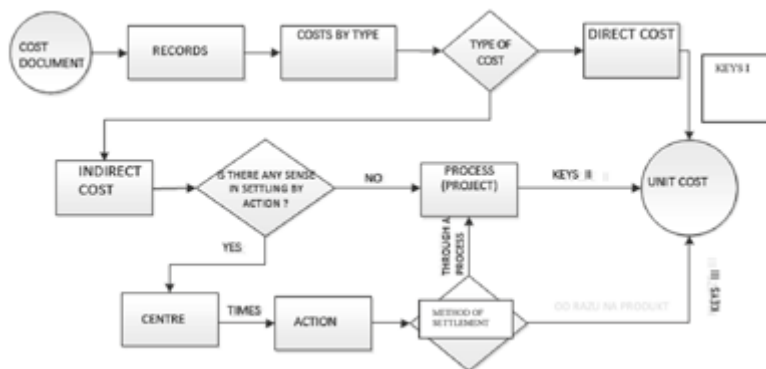


Figure 2: The methodology of the ABC model for the purposes of management controlling  
Source: Nesterak 2015, p. 145.

#### **4. Information flow system in management controlling**

Another important element of an efficient management information system is the document flow mechanism. It serves three basic functions: it ensures a smooth exchange of up-to-date information, organizes documents and protects against their loss (archiving), and automates the work related to document management (*workflow*). Schemes and procedures for the circulation of documents and information within the enterprise are created. At the same time, the responsibility of individual employees for the preparation and delivery of the required documents is defined and specified.

In a company where management controlling works efficiently, the information circulation and exchange system should be based on the philosophy of process management. On one hand, such a move guarantees considerable benefits, on the other hand, it requires devoting a very large number of hours of work to the proper construction of such a system during the design period. Each business process that has been identified during the work on the process map has been written out in the form of procedures. In turn, each procedure consists of activities that inform about the workflow within the process.

Designing an information exchange system has many potential benefits:

- precise and optimized document flow,
- high standards of the company's operations,
- determining the scope of duties and decision-making competences,
- developing the foundations for the implementation of other management tools.

An IT system can be an effective link in the structure of internal communication. Efficiently operating system allows employees to have a faster and more structured flow of information. Every user, depending on the profile of the responsibility centre, has access to specific modules of the IT system. This reduces the possibility of errors in addressing information or documents. The implementation of electronic document circulation prevents a large number of traditional hard-copy documents. At the same time, the role of e-mail is growing. Every employee is assigned a personal e-mail address, which allows for documenting specific events and more discipline in carrying out the orders of their superiors. Electronic correspondence should be treated as a traditional document.

#### **5. Management information system in the controlling of Eurobent**

The main profile of the Company's activity is the production of bentonite mats, geo-synthetic sealing barriers made on the basis of bentonite (a clay mineral with an unusual swelling capacity). The main application of the manufactured product is:

- primary and surface sealing of landfills,
- retention channels and reservoirs,
- tank warehouses,
- composting plants,
- biotopes,
- sealing tunnels and buildings,
- filtering and retention tanks,
- communication routes running through protected areas.

The products offered by the company also include sand, rubber and cement-sand (also known as concrete) mats. Both bentonite and sand mats have their own trade names, many trade names are reserved for the group of target customers, depending on the country, product, application or project name. The company offers its products to over 500 recipients. The vast majority of sales are exported. The company regularly sells its products to customers operating not only in the European Union but also globally.

Managing a production company involves continuous decision making, often complicated and based on many unknowns, therefore having factual information plays a key role. The role of management information is significant in the effective management of any business, in particular the production business. The long-term aim of the project of implementing a management information system should be not only to improve profitability and increase sales revenues, but also to obtain fuller and more accurate information about all processes taking place within the enterprise (Implementation materials of the Eurobent Company).

### **5.1. Analysis of business processes**

The basis for building the management information system was a thorough analysis of business processes. The reporting system should be based on and fully reflect the course of business processes. Then the obtained management information is intuitive, in line with the business logic and can actually support decision-making at individual stages of the process.

Six essential meta processes have been identified within the company:

1. Direct production processes,
2. Production support processes,
3. Transport processes,
4. Sales processes,
5. Operational support processes,
6. Management and administrative processes.

The direct production processes relate to the production on two main production lines: a needle punching line and a gluing line as well as the processes of collecting and moving materials.

The areas of production support include the processes of direct supervision over the production, processes implemented by the laboratory, such as verification of the supply of raw materials and quality testing of finished products, maintenance processes, warehouse processes and those related to the maintenance of production hall infrastructure.

The transportation processes constitute an important item as far as the company's costs are concerned. In the majority of cases, they are directly related to an order and concern the delivery of finished products to the customer. Commercial processes are carried out by the company's employees directly as well as by foreign trade partners, promotion and marketing processes. Operational support processes involve activities carried out by project managers, by the production director responsible, e.g. for the preparation of production plans and supervision over the production process, by the logistics department responsible e.g. for the preparation of purchase plans for raw materials for production and delivery schedules for finished products to end users, processes related to invoicing, customer service, preparation of technical product sheets and their translations as well as processes related to development of new products.

## **5.2. The dimensions of the information in the management information system**

The analysis of the company's processes, the analysis of the cost structure, information needs of managers and key decision variables made it possible to distinguish the key dimensions of information for the management information system.

There are three basic dimensions of management information:

- cost type,
- cost location,
- production order.

These dimensions are identified whenever possible at the level of accounting document assignment or supplemented in the course of realized cost settlements, which is presented in detail in subchapter 3.3 of cost settlements.

The three essential dimensions of a management information system are closely related to the attribute system, which involve:

- For a generic account:
  - management hierarchy of costs by type (generic cost accounting).

The hierarchy contains two generic cost grouping nodes for management purposes. The hierarchy in management reports replaces the traditional, generic accounting system. This layout better reflects the business logic in any subject cost grouping entity. The same management system is used at each level of management reporting. In addition, thanks to the introduction of a management hierarchy of types of costs, it is

possible to quickly identify costs of a given type, such as personnel costs, transport costs, IT costs, taking into account all cost elements assigned to a given category. As a result, matrix cost management is possible. For example: regardless of the fact that the costs are managed by the director of a division or organizational unit, they are subject to monitoring and supervision by the head of a given area across the Company (e.g. personnel costs by the HR director, fleet costs by the head of administration, etc.).

In addition, for generic accounts, an attribute is maintained that allows for grouping costs into a classic, accounting layout resulting from the profit and loss account formula in an intermediate layout.

— For cost centres

The location of cost centres aspect includes both classic organizational units as well as assets such as production lines, company cars and separate objects of subjective grouping of costs for special needs, for example, the costs of implementing new products. Taking into account the indicated assumptions, the following attributes have been distinguished:

- type of cost centre – indicating the organizational unit, car, project, others,
- leading cost centre – attribute that defines the hierarchy and dependencies between cost centres,
- responsible person,
- assignment of cost centres to the main process of the enterprise.

— For a production order

The construction of the production order is crucial for the management information system. The order dimension records, in the form adopted in the enterprise, two additional essential aspects of information, which are crucial for management: the product and the customer.

For each production order, information about the production line on which it was produced, the time of execution in a month, the volume of production expressed in m<sup>2</sup>, the normative cost of production is collected in the management information system.

For each client, information on grouping clients according to market segmentation and client management method is collected. The country in which the client operates is assigned to each client, then the countries are grouped into the following segments: Poland, EU, outside the EU.

For products maintained in the management information system, there are a number of attributes that allow for obtaining key information for the enterprise. The company groups products into three main product lines: bentonite mats, cement mats and sand mats. For each product group,



product lines are defined relating to the main assortment lines, additional individual ranges within them, usually denoting products separated for commercial reasons. Additionally, an important piece of information for the company is the size of the mats produced. Therefore, products are additionally grouped according to the dimensions of the mats. A separate attribute is the classification of products into products with and without foil, which is important in terms of management for the enterprise.

The system of attributes together with the essential dimensions creates a total of about 20 cross-sections of management information and enables its multidimensional analysis.

### **5.3. Cost settlements in the management information system**

The management information system provides full flexibility in cost accounting. Settlements of indirect costs are carried out in the management reporting system on dedicated types of accounts visible only on the side of management reporting, neutral for accounting records. Cost settlements allow you to move costs along the indicated dimension structure of management information. For example, they allow you to indicate the order dimension for transportation costs. As a result, by analysing the profitability of orders, individual clients or products, the company gets a complete overview necessary to correctly determine profitability. The basis for cost accounting and an integral element of the management information system are business data collected in the company's information system. For example, the transportation data are collected in the logistics department and indicate in detail the information necessary to allocate the costs of carriers to individual production orders and then customers or products. Costs will be settled by reducing costs at the sending facility and increasing costs at the receiving facility.

The following settlements are made in the company's management information system:

- settlement of costs of direct materials for production orders,
- settlement of electricity costs on Production lines,
- settlement of employees' costs on Production lines,
- settlement of the cost of lease of space on production lines, warehouse, maintenance, other cost centres,
- settlement of maintenance costs in Production lines,
- settlement of the costs of production lines per order (LOT),
- settlement of laboratory costs per order (LOT),
- settlement of costs of transport costs per order (LOT),
- settlement of the costs of commercial commissions per order (LOT),

- overheads of indirect warehouse costs,
- surcharges over indirect costs of departmental costs,
- surcharges for indirect selling costs.

#### **5.4. Sources of information from the management accounting system**

The company uses the following systems for the recording of economic events:

- Financial-Accounting – REWIZOR / Producer: InSert Wrocław
- Storage – SUBIEKT / Producer: InSert Wrocław
- HR and payroll – RAKS 2000 / Producer Raks Sp. z o. o. Warsaw
- and GRATYFIKANT / Producer: InSert Wrocław
- ZUS declarations – Płatnik / Producer: ZUS

Settlement of business trips – a calculator on a paid internet platform – Delegacje krajowe i zagraniczne / Producer: TaxNet Sp. z o.o.

In addition, the basis of the management information system is business data collected in internal summaries, which are imported and maintained in the management accounting system. Business data includes:

- production reports with the time of execution of individual orders,
- list of transports,
- list of orders with an indication of the customer and product,
- use of space by organizational units,
- use of energy by production lines.

## **6. Conclusion**

A properly designed management information system is a key element of the implementation of management controlling. A properly designed management information system enables comprehensive reporting, analyzing cost information, its further processing, and applying cost accounting techniques and tools. Such a system provides the possibility of obtaining management information and formulating conclusions and decisions for implementation based on it.

A key element of the management information system is the proper identification of the necessary dimensions of information. These dimensions should be identified through an analysis of the company's business processes and information needs. Supplementing the dimensions with appropriate attributes completes the management information system. When implementing a management information system, one must not forget about the proper information flow system. Even the best-designed system will be worthless if the procedures for assigning attributes to the source accounting documents are not implemented.

In the analyzed company, the implementation of the information system was based on three main dimensions of cost information: the type of cost, the cost location, and the production order. The production order allows for the identification of the product and the customer. The system has been supplemented with a dozen or so attributes describing the dimensions features, including mainly the features of products and customers. Identification of dimensions is performed in the information flow system, using domain systems and maintaining dedicated registers. The implemented information system allows for the application of cost accounting techniques. As a result, the company obtains complete management information, the possibility of a multi-dimensional profitability analysis at the level of products, individual types of products, customers and sales markets. The management information system allows to successfully implement the assumptions of management controlling.

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**Part IV** **FINANCIAL ASPECTS OF THE FUNCTIONING  
AND DEVELOPMENT OF ENTERPRISES**



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# FACTORS OF INFLUENCE OF STATE REGULATION ON INVESTMENT ACTIVITY IN AGRICULTURE OF UKRAINE

## 1. Introduction

Agriculture operates and develops in accordance with natural laws, the achieved level of technology and public relations. Despite the fact that it is affected by the general situation of the market of goods and services, it is still characterized by certain patterns of development, dictated by the influence of a number of historical and cultural, climatic, infrastructural, labor and other factors. In this regard, the sphere of state regulation of investment activity acquires certain features that are formed depending on the specifics of agricultural development in different countries and economic regions.

Improving state regulation of investment activity of agricultural enterprises is based on both the general theoretical and practical principles of strategic directions of state investment policy and regional investment initiatives. The Ukrainian economy has some historical experience in the development of means to stimulate investment activity, but its results cannot be considered relevant given the leveling of a number of positive effects of corruption, weak structure and systemic decisions by relevant government agencies. In addition, state regulation of investment activity in agriculture in Ukraine is in a relatively unstable state, caused by both fluctuations in macroeconomic indicators and frequent changes in the priorities of state regulation. Therefore, quite relevant issues are the theoretical and methodological justification of the process of state regulation of investment processes, which involves the development of certain standards and approaches to the introduction of investment incentives; development of directions of improvement of organizational and institutional bases of the state regulation of investment activity in agriculture.

The main problematic issues that hinder the implementation of promising areas of development of investment activities in agriculture include:

- the lack of a clearly defined strategy for agricultural development, which reproduces the general state of economic policy of the state, including the uncertainty of its investment aspect;
- low level of regulatory and legal support for investment activities, complemented by the lack of an adequate level of protection of private rights of investors;
- poor coordination of public administration and local government in the field of investment relations;
- improper development of sources of funds for project financing of agricultural production;
- lack of a system to stimulate the development of entrepreneurial initiatives in agriculture.

Thus, the purpose of this study is to determine the main factors of state regulation that affect the efficiency of investment activities in agriculture of Ukraine.

## 2. Literature review

Issues of development and improvement of state regulation of investment activities, including in the field of agriculture, have become the subject of research by a number of authors.

The main aspects of the regulation of investments in agricultural sector of EU are shaped in “Policy framework for Investment in Agriculture” (OECD documents, 2013).

The Impact of government policies on private R&D investment in agriculture is discussed in article (Haiyan Deng, Ruifa Hu and other, 2019). The results of analysis of main aspects and issues of the government regulation of agricultural sphere are represented in work (Polushkina, Kochetkova and others, 2016)

I. Bezpyata (2016) studied the peculiarities of attracting foreign investment in the agricultural sector of the economy. She considered the main factors that allow to form the preconditions for increasing the level of investment attractiveness of the regions of Ukraine. The author considers the implementation of European initiatives in the field of agricultural policy to be an important area of state support for the development of investments in the agricultural sector.

D. Dukov (2016) explored areas for improving the integrated mechanism of public investment management in the regional paradigm. Important issues raised by the author were the prerequisites for providing investment support to farmers at the local level in addition to the above issues.



O. Fedorchak (2017) studied the preconditions for the development of the system of institutional support for innovation and investment activities in Ukraine.

The main aspects of the regulation of investments in agricultural sector of EU are shaped in “Policy framework for Investment in Agriculture” (OECD documents, 2013). Analysing this document, you should underling the key role of privat investments, that should be supported by regulators: “Private investment is essential if agriculture is to fulfil its vital function of contributing to economic development, poverty reduction and food security. Agricultural production needs to increase by at least 60% over the next 40 years to meet the rising demand for food resulting from world population growth, higher income levels and lifestyle changes. Given the limited scope for net area expansion, agricultural growth will rely mainly on new increases in productivity, supported in particular by private investment in physical, human and knowledge capital. Agricultural investment can help contain upward pressure on food prices in a context of rising land and water scarcity, thereby enhancing global food security.

Tsehay Wasihun Muluneh (Muluneh, 2021) concentrated on digital aspects of the agricultural development: application of digital technologies (modern ICT’s) are to transform internal functioning of rural institutions, the delivery of agricultural goods and services, and the interaction between government and the rural public with enhanced transparency, accountability, regulation and contract enforcement, and active participation of all involved stakeholders aiming to ensure growth and development of the agricultural sector.

The main trends in governance of the agricultural sector in the age of globalization are discussed in the book (Higgins, Lawrence, 2005).

The Impact of government policies on private R&D investment in agriculture is discussed in article (Haiyan Deng, Ruifa Hu and other, 2019). This study undertakes this research by examining the relationship between government policies and biotechnology research by agribusiness firms in China, using a unique survey dataset of 103 Chinese agribusiness firms in the chemical and seed industries. The results provide support for the argument that government policies can induce private investment in biotechnology R&D. This most basic policy change required to encourage R&D is government approval of new GM traits for cultivation and GM traits for consumption.

### **3. Methodology**

It is necessary to study the influence of state regulation on investment activity in agriculture inseparably from the analysis of the basic preconditions of formation of the agricultural sphere of economy and factors of influence on

it. For the analysis, informational support was used, which was formed on the basis of open statistical data of the State Statistics Service of Ukraine, the State Treasury Service of Ukraine, the Ministry of Economic Development, Trade and Agriculture of Ukraine. The methodological basis of the study were the methods of economic-statistical and correlation-regression analysis.

The study period covers the interval from 2010 to 2019. This time interval can be divided into three time intervals, each of them reflects a certain direction of public investment policy in agriculture:

- 2010–2013 – a period of relative stability, which was associated with the implementation of economic policy aimed at increasing exports to the markets of the CIS countries;
- 2014–2015 – a period of financial, economic and political crisis, characterized by a sharp decline in key indicators of socio-economic development;
- 2016–2019 – post-crisis period of gradual recovery of Ukraine's economy, its adaptation to new economic conditions.

In order to obtain a complete picture of the impact of instruments of state regulation on investment processes in agriculture, a factor analysis has been performed. To this end, it is necessary to identify the features of the impact of various instruments of state regulation on investment in the agricultural sector. We will perform the assessment using the method of correlation-regression analysis, because there are no direct linear relationships between the analyzed indicators. The impact of economic instruments of state regulation on the volume of investment in agriculture was studied by the following indicators:

- state budget expenditures to support state regulators of the agricultural sector;
- the amount of the state budget for financial assistance to farmers;
- the amount of VAT refunds to farmers for exports;
- volumes of public procurement from agricultural enterprises.

#### **4. Results of the research**

Obtaining objective results of the assessment should provide for the leveling of the impact of the devaluation of the hryvnia in 2014–2015. Therefore, all indicators used for regression analysis are reduced to the currency equivalent (USD) at the average annual rate of the NBU. The initial data for evaluation and symbols of indicators are provided in table 1.

The international software product Stata was used to calculate regression. The results of the regression calculation in the Stata program were normalized (a natural logarithm was found for the values for each indicator for greater

objectivity of the evaluation results). The results of starting regressions are provided in table 2.

Table 1: Indicators for the analysis of the dependence of the volume of investments in agriculture on the use of various instruments of state regulation in 2010–2019

Indicators	Legend	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Investments in agriculture (capital and foreign direct), mln.USD	Y	2066	2791	3083	2996	2356	1833	2429	2974	2929	2709
Expenditures to support state regulators of the agricultural sector, mln.USD	$x_1$	-	12	16	9	7	5	6	8	7	8
Financial assistance to farmers, million dollars	$x_2$	-	152	129	165	64	31	14	190	167	172
VAT refund on exports, USD million	$x_3$	847	895	954	1071	696	455	595	741	578	575
Public procurement of agricultural products, million USD	$x_4$	4170	3600	3256	1768	1409	596	1117	1020	1061	1131

Source: calculated and constructed by the author according to the State Statistics Committee of Ukraine

Table 2: The results of the regression analysis of the volume of investment in agriculture dependence on the use of various instruments of state regulation in 2010–2019

Regression parameters	Regression variations				
	Plural	Y від $X_1$	Y від $X_2$	Y від $X_3$	Y від $X_4$
$R^2$	0,8974	0,6526	0,5403	0,5463	0,1136
Fisher criteria	4,37 $F_{\min} = 4.2$	9,39 $F_{\min} = 1.6$	5,88 $F_{\min} = 1.6$	7,22 $F_{\min} = 1.6$	0,77 $F_{\min} = 1.6$
Coefficients for variables, $b^1 - b^4$	$X_1: b^1 = 0,348$ $X_2: b^2 = -0,039$ $X_3: b^3 = 0,663$ $X_4: b^4 = -0,215$	$X_1:$ $b^1 = 0,359$	$X_2:$ $b^2 = 0,137$	$X_3:$ $b^3 = 0,508$	$X_4:$ $b^4 = 0,092$
Probability of error, $p^1 - p^4$	$X_1: p^1 = 0,360$ $X_2: p^2 = 0,676$ $X_3: p^3 = 0,197$ $X_4: p^4 = 0,397$	$X_1:$ $p^1 = 0,028$	$X_2:$ $p^2 = 0,060$	$X_3:$ $p^3 = 0,036$	$X_4:$ $p^4 = 0,414$

Source: calculated and developed by the author according to the State Statistics Committee of Ukraine

The performed regression analysis gives grounds to assert a high density of the relationship between the indicators in the framework of multiple regression. The value of  $R^2$  is 0.8974 and is close to 1. This indicates that the relationship between the volume of investment in agriculture and instruments of government regulation is high. In this case, based on the data of the Fisher test (F-test), it is also possible to conclude that there is a stable relationship between the indicators, as its actual value is 4.37, which exceeds the minimum allowable value (4.2).

It is important to pay attention to the obtained values of the coefficients for each variable. They express the value of the coefficient of elasticity of investment under the influence of each instrument of government regulation. As shown in table. 2. data, in general, the growth of expenditures to support the state regulatory authorities of the agricultural sector had a positive effect on the increase in investment within both multiple and pairwise regression (in x1). There was a directly proportional relationship between the indicators.

It can also be stated that the state financial support of farmers had an ambiguous nature of the impact on the volume of investments. Within the multiple regression, the growth of financial support led to a decrease in investment (inversely proportional dependence), and within the pairwise regression (in x2) the dependence was directly proportional. This can be explained as follows:

- 1) state financial support of the agricultural sector itself (in the absence of the influence of other factors) is an instrument of state regulation, which has a positive effect on investment in agriculture;
- 2) the positive effects of state financial support are offset by the influence of other factors, which, as it turned out as a result of the launch of regressions, had a greater degree of influence. That is, in this aspect, the state policy of VAT refunds and public procurement in 2010–2019 offset the positive impact of state financial assistance. Based on this, it is possible to make assumptions about the insufficient efficiency of the use of the above instruments of state regulation of investment activity in agriculture of Ukraine.

VAT refunds on exports had a positive effect on investment in agriculture, which confirms the results of multiple and pairwise (in x3) regressions. Instead, the impact of public procurement is quite controversial. The results of multiple and pairwise (in x4) regressions show that the positive effects of public procurement are offset by the influence of other factors. That is, the implementation of public procurement from farmers together with the use of other instruments of state regulation of investment in agriculture does not give significant positive consequences.

Thus, based on the results of the study of the main economic instruments of state regulation of investment activity in agriculture of Ukraine, the following conclusions can be drawn:

1. The number of agricultural enterprises has a stable upward trend. Therefore, the policy of state regulation in the direction of increasing the level of taxation of economic entities in agriculture did not have a significant impact compared to other sectors of the economy. The dynamics of the number of agricultural enterprises largely depended on macroeconomic dynamics.

The share of agricultural production has been constantly increasing, which positively characterizes the reforms carried out in the agricultural sector over the past 9 years.

2. The reduction in investment occurred due to the withdraw of capital from Ukraine during the economic crisis. During 2016–2019, the opposite trend was observed. Characterizing the dynamics of the share of investment in GDP and gross investment in the economy of Ukraine, it should be noted that there is a tendency to its gradual growth in 2015–2019. The share of investment in GDP generated in the agricultural sector increased significantly between 2015 and 2019. This trend can be explained by the fact that after the economic crisis, Ukraine began to export more agricultural raw materials to world markets, reducing the share of high value-added products. Therefore, the investment attractiveness of agriculture in the new economic conditions has become much higher compared to other sectors of the economy.
3. The weakness of state regulation of investment activity in agriculture is the lack of a balanced long-term policy of economic development, which turns Ukraine into an agrarian state. The balance of payments deficit has been covered in recent years (2015–2019) due to exports of low value-added agricultural raw materials. Taking into account the fact that the world food market is constantly growing shortage of quality products, Ukraine has prospects to become a developed agro-industrial country in terms of stimulating investment in the processing of agricultural raw materials.
4. The pace of dynamics of foreign direct investment in agriculture is sharper than in the economy as a whole. This may indicate that foreign direct investment in the agricultural sector is quite resilient to changing economic conditions and the political situation in Ukraine, and therefore agriculture largely needs economic stabilization and a balanced policy of state regulation.
5. During 2010–2019, the state policy of regulating investment activity in agriculture showed less interest in the fundamental and infrastructural principles of agricultural sector development. Instead, the main efforts of public authorities in recent years have begun to focus on targeted subsidy funding programs for agricultural producers. Measures of state regulation of investment activity in agriculture did not contribute to increasing the economic potential of agricultural enterprises. Instead, the indicators of production capacity and book value of biological assets decreased, thus reducing the level of investment attractiveness of the agricultural sector.
6. The growth of expenditures to support the state regulatory authorities of the agricultural sector had a positive effect on the increase in investment

within both multiple and pairwise regression (in  $x_1$ ). There was a directly proportional relationship between the indicators. The state financial support of farmers had an ambiguous nature of the impact on the volume of investments.

7. The state policy of VAT and public procurement reimbursement in 2010–2019 offset the positive impact of state financial assistance. Based on this, it is possible to make assumptions about the inefficiency of the use of the above instruments of state regulation of investment activity in agriculture. In turn, the implementation of public procurement by farmers compared to the use of other instruments of state regulation of investment activities in agriculture, has no significant positive consequences.

In order to deepen the analysis of the effectiveness of state regulation of investment activities in agriculture, a correlation-regression analysis of the relationship between the following indicators:

- the resulting indicator: investment in agriculture (capital and foreign direct);
- factor indicators: these are the indicators shown in Fig. 2.23–2.26

The initial data for the construction of the regression model are provided in table 3.

Table 3: Indicators for the analysis of the dependence of the return on investment in agriculture on the effectiveness of their state regulation in 2012–2019

Indicators	Legend	2012	2013	2014	2015	2016	2017	2018	2019
Investments in agriculture (capital and foreign direct), mln USD	$Y$	3083	2996	2356	1833	2429	2974	2929	2709
Investment efficiency ratio, Carey	$x_1$	0,82	1,88	0,99	1,09	1,08	0,87	1,12	0,90
Coefficient of efficiency of financial stimulation of investment development of agrarians, Kesi	$x_2$	1,30	1,14	0,93	0,91	1,56	1,44	1,16	1,09
Coefficient of investment efficiency of VAT refund to farmers, Efficiency	$x_3$	1,04	0,87	1,21	1,19	1,01	0,98	1,26	0,93
Coefficient of investment efficiency of public procurement	$x_4$	1,28	1,24	1,20	0,82	3,09	0,66	0,85	0,96

Source: calculated and developed by the author according to the State Statistics Committee of Ukraine

The results of the regression calculation in the Stata program. All data are presented in a panel view. The results of starting regressions are provided in table 4.

The performed regression analysis gives grounds to indicate the average level of probability of the relationship between the indicators in the framework of multiple regression. The value of  $R^2$  is 0.5252. This indicates that the relationship

between the level of return on investment in agriculture and the effectiveness of certain means of state regulation of investment activity is high. In this case, based on the data of Fisher's criterion (F-criterion), it is also possible to conclude that there is a stable relationship between the indicators, as its actual value is 19.92, which exceeds the minimum allowable value (4.22).

Table 4: The results of the regression analysis of the dependence of the return on investment in agriculture on the effectiveness of their state regulation

Regression Parametres	Regression variations				
	Plural	Y від X <sub>1</sub>	Y від X <sub>2</sub>	Y від X <sub>3</sub>	Y від X <sub>4</sub>
R <sup>2</sup>	0,5252	0,4069	0,3587	0,3056	0,2680
Fisher criteria	19,92 F <sub>min</sub> = 4,22	17,15 F <sub>min</sub> = 1,25	13,98 F <sub>min</sub> = 1,25	11,00 F <sub>min</sub> = 1,25	9,15 F <sub>min</sub> = 1,25
Coefficients for variables, b <sup>1</sup> – b <sup>4</sup>	X <sub>1</sub> : b <sup>1</sup> = 0,918 X <sub>2</sub> : b <sup>2</sup> = 1,229 X <sub>3</sub> : b <sup>3</sup> = 4,140 X <sub>4</sub> : b <sup>4</sup> = -0,126	X <sub>1</sub> : b <sup>1</sup> = 0,995	X <sub>2</sub> : b <sup>2</sup> = 0,405	X <sub>3</sub> : b <sup>3</sup> = 2,501	X <sub>4</sub> : b <sup>4</sup> = 0,261
Probability of error, P <sup>1</sup> – P <sup>4</sup>	X <sub>1</sub> : P <sup>1</sup> = 0,356 X <sub>2</sub> : P <sup>2</sup> = 0,236 X <sub>3</sub> : P <sup>3</sup> = 0,345 X <sub>4</sub> : P <sup>4</sup> = 0,582	X <sub>1</sub> : P <sup>1</sup> = 0,000	X <sub>2</sub> : P <sup>2</sup> = 0,001	X <sub>3</sub> : P <sup>3</sup> = 0,003	X <sub>4</sub> : P <sup>4</sup> = 0,006

Source: developed by the author according to the State Statistics Committee of Ukraine

Let's analyze the obtained values of the coefficients for each variable. As shown in table 3 data, the level of impact of the effectiveness of state regulation using such means as financing of investment management bodies and financial incentives for investment development, is the highest compared to the effectiveness of other instruments of state regulation. Rising government spending on investment management and financial assistance to farmers has a positive impact on the dynamics of return on investment in agriculture.

According to the results of the values of multiple regression coefficients, we can say that the decline in investment efficiency of public procurement in general had a negative impact on the level of return on investment in agriculture. This may indicate the limited use of public procurement to stimulate investment processes in agriculture in the current macroeconomic dynamics.

However, a significant risk in this direction is the high level of corruption in public authorities. The problem of corruption in Ukraine is a systemic phenomenon that is very difficult to fight. Overcoming it requires significant investment of resources and time. Foreign investors understand this situation, and therefore are often ready to work in Ukraine with the expectation of improving the business climate in the future.

## 5. Conclusion

Thus, summarizing the results of the study, the effectiveness of state regulation of investment activities in agriculture was assessed. Indicators of the ratio (performance of agricultural enterprises to indicators of investment and public financial assistance to farmers) have been declining during 2015–2019. This indicates a decrease in the level of efficiency of public investment policy in agriculture. According to the results of correlation-regression analysis, we can say that the relationship between the level of return on investment in agriculture and the effectiveness of certain means of state regulation of investment activity is high. The level of impact of the effectiveness of state regulation with the use of such tools as financing of investment management bodies and financial incentives for investment development is the highest compared to the effectiveness of other instruments of state regulation. Rising government spending on investment management and financial assistance to farmers has a positive impact on the dynamics of return on investment in agriculture.

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# CHALLENGES AND OBJECTIVES OF FINANCIAL SUPPORT FOR INNOVATION PROJECTS: ANALYSIS AND INTERNATIONAL COMPARISON

## 1. Introduction

In the conditions of uneven economic development of the countries there are differences in problems of innovative transformations realisation. The differences in the problems of national economies, as well as national and transnational enterprises in the respective areas determine the diversity of objectives of financial support for innovative projects. This necessitates the study of the causes of problems and consequences of the choice of certain goals for governments in order to ensure the innovative development of national economies. It is the goals that determine the choice of methods of financial security. In some cases, you can limit yourself to state and local budgets. If budget funds are insufficient or limited, private business should be encouraged to innovate. The lack of national financial resources forces us to turn to international sources, which can be both budget transfers of foreign countries and funds of international financial institutions, private funds, transnational corporations, etc.

Instead, to begin research and determine the steps of future financial activities for the financial support of innovative projects, should be an analysis of problems in innovation and the formulation of goals of innovative projects. It is well known that the analysis of foreign experience is extremely useful and necessary. The results of such an analysis can help avoid risks and errors.

The research objective is to study the peculiarities of innovative projects financing in the context of the international experience, to generalise the typology

of problems concerning financial support of innovative projects and identify the typology of research goals of financial support of innovative projects by countries and regions.

## **2. Literature review**

The study of publications of recent years has shown certain areas of research in the field of financial support of innovative projects in different countries. According to the problems and goals of research, they can be divided into different groups. The examples we have chosen relate to the innovation policy of countries in general and individual regions in particular. As for the countries, we took as examples of the study of Kazakhstan (Kaliyeva, Arystanbaeva... & Orazbaeva, 2018), Canada (A Canadian Approach to Innovative Financing for Sustainable Development), China (Zhu, Zhang & Sun, 2021; Piao & Lin, 2020), Poland (Krawczyk-Sokołowska & Łukomska-Szarek, 2017), Singapore (Innovation & Enterprise Cluster Fund, 2020). In terms of regions, the study of Brazil (Schmidt & Hoffmann, 2010), the Western Balkans (Western Balkans Enterprise Development & Innovation Facility), Chile (Romani & Atienza, 2005), as well as a comparative study of Poland and Ukraine (Gernego, Petrenko, Dyba & Tsarov, 2020) are taken as examples. For Ukraine as a region, publications are considered in terms of research tools used (Iermakova, 2020) and index assessment (Bogatyrov, Baula, Liutak & Galaziuk, 2021).

## **3. Methodological approach**

The research methodology is structured as follows. The method of analysis was used to study the content of problems and goals in each country. Systems analysis is used to compare goals as a basis for a method of comparing the goals of financial security in different countries. Publications of recent years have been selected for the study. Economically developed countries, such as Canada, are selected, which have sufficient financial resources and experience to support innovation projects and can act as consultants and donors for investment in innovation development projects abroad. Other countries have some problems with raising their own funds and are forced to seek funding and advice on their implementation to ensure innovative projects.

## **4. Conducting research and results**

Research of the literature sources devoted to financing of innovative projects allows to compare experience of different countries. At the same time,

it is important to obtain results both for the analysis of problems and goals at the level of policy of state and regional authorities and management, and for the assessment of these aspects at the level of enterprises and multinational corporations. Formation of a typology of problems and on this basis a typology of the purposes of research of financial maintenance on the countries or regions is important for conclusions concerning the further purposefulness of activity of the state, regional, corporate financial bodies and services.

From the standpoint of our study it is important to see the direction of innovation. According to the Law of Ukraine “On Innovation Activity”, innovative activities – the activities directed to use and commercialisation of results of research and development and causing release on the market of new competitive goods and services. The innovative project – the set of documents determining the procedure and complex of all necessary measures (including investment) on creation and realisation of innovative product and (or) innovative products [Law of Ukraine “On Innovation Activity”, Art. 1]. Of course, the vast majority of innovative projects are developed and implemented at the enterprise level. Instead, tasks to overcome technological backwardness are often set at higher levels of government. After all, the innovative project of an individual enterprise provides competitive advantages to a specific manufacturer. For a country or its region, competitive advantages are determined by entire industries – types of economic activity. To do this, there is a common practice in the world of creating clusters. However, such levels of decision are made by state or regional authorities and management. That is why it was important to build the table in such a way as to see at the same time the objects of innovation implementation, problems in determining the objectives of research on financial support of innovative projects, research objectives of financial support of innovative projects, and countries (regions) for which these aspects are relevant. Our proposed typology of problems and the corresponding goals for their solution are summarised in table 1.

The identified objectives of research on the financial support of innovation projects should be useful for further management decisions at the appropriate levels of government to achieve innovation, both individual enterprises and regions and countries. Table 2 shows our proposed typology of the objectives of such studies.

Table 1: Generalised typology of problems concerning financial support of innovative projects

The object of implementation of innovative projects	Problems in determining the objectives of research on financial support of innovative projects	Objectives of research on financial support of innovative projects	Country or region
Micro, small and medium enterprises	The problem of determining guarantees for financial institutions	Focus on financing innovations in micro, small and medium enterprises	Brazil
	The problem is the ability of SMEs to obtain the necessary financial resources for innovative projects		Western Balkans region
	The problem of determining the potential of these enterprises, their ability to implement innovative projects		Chile, Antafagasta region
Enterprises of various scales and types of economic activity, including IT-sphere	Influence of different methods of financing on technological innovative behavior of private enterprises	Ensuring the efficiency of financing innovative projects	China, private enterprises
	The impact of innovation funding on the effectiveness of technological innovation of Internet companies		China: IT companies
	Evaluation of financing sources for enterprises' innovative activity		Poland
Joint innovation clusters	Problems of forming the necessary infrastructural environment for innovative projects	Creating a network of clusters to support innovative projects of enterprises through the cluster funding	Singapore
Public authorities and private capital	The problem of cooperation between public authorities and private capital in the process of financing the innovative development of the national economy	The need to convince government officials to cooperate with private capital investors for the innovative development of the national economy	Kazakhstan
Government of Canada	The problem of implementing the feminist policy of the Government of Canada at the international level	Implementing a government's feminist policy on international aid and sustainable development goals	Canada
Interstate creative projects	The problem of the study is to determine the potential of crowdfunding support to bridge the gap between creative projects in different countries	Implementation of national programs of financial support of creative innovative projects	Poland-Ukrainian
Regional level in Ukraine	The problem of forming organizational and economic mechanisms to support innovative development at the regional level and identify the source of forming their financial support	Developing organizational and economic mechanisms to support innovative development at the regional level and identifying the source of their financial support	Ukraine
Economic system of Ukraine	The problem of improving the financial mechanism for ensuring innovation processes in the economic system of Ukraine	Overcoming bottlenecks in the economic system of the state in order to realize the existing potential innovation opportunities	Ukraine

Source: own research

Table 2: Typology of research goals of financial support of innovative projects by countries and regions

Countries or regions	Objectives of the study in the respective country
Brazil: extreme south	Identifying the types of <u>guarantees that financial institutions need</u> to lend to innovation in micro, small and medium enterprises (SMEs) [Schmidt & Hoffmann, 2010].
Canada	Investigate <u>innovative financial instruments</u> to support the achievement of the goals of the government's Canadian feminist policy on international aid and the goals of sustainable development [A Canadian Approach to Innovative Financing for Sustainable Development].
Chile: Antofagasta region	The aim of this work is to analyze the <u>innovation potential of small and medium enterprises (SMEs)</u> in the Antofagasta region (Chile), to assess the ability of local SMEs to create or modify products or processes and introduce them to the market [Romani & Atienza, 2005].
China: private enterprises	The purpose of the publication is to study the impact of different <u>methods of financing</u> on technological innovation behavior of private enterprises [Zhu, Zhang & Sun, 2021].
China: IT companies	Empirically investigate <u>the impact of innovation funding</u> on the effectiveness of technological innovation of individual Internet companies that were associated with China between 2008 and 2017 [Piao & Lin, 2020].
Kazakhstan	Proving the need for cooperation between public authorities and private capital in the process of <u>financing the innovative development</u> of the national economy [Kaliyeva, Arystanbaeva... & Orazbaeva, 2018].
Poland	The purpose of the study is to <u>assess the sources of funding for innovation of enterprises</u> [Krawczyk-Sokolowska & Łukomska-Szarek, 2017].
Singapore	The purpose of the publication is to show <u>the role of the cluster fund of innovations and enterprises</u> in the process of forming new clusters to support joint innovation projects [Innovation & Enterprise Cluster Fund, 2020].
Western Balkans	<u>The World Bank program</u> aims to improve access to finance for small and medium-sized enterprises (SMEs) in the Western Balkans by promoting regional venture capital markets and supporting access to <u>finance for SMEs</u> through <u>financial engineering tools</u> [Western Balkans Enterprise Development & Innovation Facility].
Ukraine-Poland	The aim of the study is to elucidate the possibilities of the <u>crowdfunding platform</u> to provide the preconditions for mitigating interstate differences in project financing [Gernego, Petrenko, Dyba & Tsarov, 2020].
Ukraine: regional aspect	The purpose of the publication is to develop organizational and economic mechanisms to support <u>innovative development at the regional level</u> and to identify the source of formation of their financial support [Iermakova, 2020].
Economic system of Ukraine	The purpose of the publication is to overcome <u>the bottlenecks in the economic system of the state</u> in order to realise the existing potential innovation opportunities [Bogatyrov, Baula, Liutak & Galaziuk, 2021].

Source: own generalisation according to literary sources

Analysing the goals of research conducted in different countries, we can note several features. A common feature for all countries is the desire to innovate and effectively fund this process. Instead, there are some differences that are specific to either one country or several countries in the sample.

Thus, three out of nine countries are characterised by a focus on financing innovation in small and medium-sized enterprises. This applies to Brazil, Chile, the Western Balkans. Here, attention should also be paid to the involvement of banks

in innovative projects in SMEs. Of course, there is some difference between the World Bank's requirements for the Western Balkans and the concerns of Brazilian financial institutions about the types of SMEs lending. The World Bank sees a problem in the ability of SMEs to obtain the necessary financial resources for innovative projects. The solution to this problem is seen by World Bank experts in the development of regional venture capital markets and the use of financial engineering tools. The problem of the region of the extreme south of Brazil is somewhat different, where banks seek to insure themselves when lending to innovative projects with sufficiently reliable guarantees. From the point of view of the interest of SMEs in the Antafagasta region in Chile, the problem is quite different. In research for SMEs in this region, the key problem is to determine the potential of these enterprises themselves, their ability to implement innovative projects.

Problems of financing innovative projects exist not only for small and medium enterprises. Chinese experts have studied the problems of innovative projects for privately owned enterprises. In particular, the impact of different financing methods on the technological innovation behavior of private enterprises was problematic.

Special emphasis should be placed on the problem of the impact of innovation funding on the effectiveness of technological innovation of Internet companies that were associated with China between 2008 and 2017. Summarizing the goals of research by Chinese experts, we can say that they have focused on the effectiveness of funding innovative projects.

Polish researchers studied the evaluation of sources of funding for innovative activities of enterprises. Of course, it is possible to consider the assessment of funding sources for some previous stage as an assessment of the effectiveness of innovative projects. After all, the ability to carry out large-scale and long-term innovative projects depends on the sources of financial resources.

A separate problem, as shown by studies of experts from Singapore, is the formation of the necessary infrastructural environment of sources of funding for innovative projects. In particular, such an environment can be created from a number of clusters. The cluster fund of innovations should play a leading role in creating such a cluster environment.

In Kazakhstan, studies have shown the need to convince government officials to cooperate with private capital in the process of financing the innovative development of the national economy. In other words, scientists have considered the problem of innovative development of the state as a whole. That is, research has already moved from the level of enterprises to the level of the national economy.

Canadian researchers explore innovative financial instruments to support Canadian government's feminist policy on international aid and sustainable



development. It can be argued that the financial capacity of the Government of Canada allows not only to formulate the problem of supporting women's innovative business, but also to promote certain financial instruments in this process.

Ukrainian researchers explore possibilities of crowdfunding platform to provide preconditions for mitigating interstate differences in project financing on the example of Poland and Ukraine. They found that in Ukraine there is a high rate of concentration of efforts for creative projects that commercialise material and physical goods: product design and gadgets. In Poland, the main concentration of efforts falls on the field of intangible intellectual products: board and video games. The conclusion is made about the digital platform, which is a reflection of the relationship between intangible and tangible values in economies.

For the regional level, in one of the studies, Ukrainian scientists identified the goal of developing organisational and economic mechanisms to support innovative development at the regional level and identify the source of their financial support.

For the level of the economic system of the state, Ukrainian scientists have studied the problem of improving the financial mechanism for innovation processes. The study of foreign experience of state support for innovation allowed the authors to state the existence of direct funding for research, and for private business – tax incentives.

## 5. Conclusion

The results of our study allow us to formulate in a more general way the definition of problems that determine the objectives of research on financial support of innovative projects by countries (regions), corporations and international organizations. In the publications that were studied, we also identified certain goals of financial support for innovative projects. This made it possible to formulate and set certain goals in line with the problems. It should be noted that both, the problems and the goals, are presented in our interpretation, as the purpose of our study does not fully coincide with the goals of the researched publications. We've also identified objects that meet our concerns and goals. To better understand the problems and goals we have formulated, the countries and regions, where foreign and Ukrainian researchers have studied the issues of innovative development and its financing, are indicated.

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# DEBT RATE IN CONSTRUCTION SECTOR ENTERPRISES IN POLAND (2010–2017)<sup>1</sup>

## 1. Introduction

The specificity of activities and different operating conditions translate to shaping the capital structure of enterprises. Capital structure theories are intended to explain how decisions are made in the area of financing a company's operations. The concept of capital structure is defined in various ways. It is generally defined as the proportion of the division of equity and foreign capital in the financing of an entity's operations (Myers S.C., 2001; Jerzemowska M. 2018; Tsolas I.E. 2021). At the same time, it should be noted that, according to a different approach, these relationships determine the structure of a company's financing sources. Capital structure should be understood as the relationship between long-term debt and equity; therefore, it is part of the structure of one's financing sources (Janasz, 2007; Stradomski, 2004).

The basis for formulating a strategy that indicates the main orientation toward the direction of a company's operations and is a guideline for the management of the entity is the maximization of the company's market value. This creation is possible thanks to the close connection with the sphere of an individual's finances, among others (Jaki, 2011). Taking the above information into account, it is reasonable to adopt a value-creation measure that allows one to objectively assess the financial condition of an enterprise and check whether the postulate of maximizing value for the owner(s) is being realized. It is assumed that such a measure is economic value added (EVA). The essence of the EVA concept is based on the assumption that the value of an enterprise corresponds

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to the sum of its invested capital that is increased by a premium, which means the current value of the surplus by which the value of the enterprise will increase over a given period (Kruk, 2018).

The subject of interest in the work is the issue of shaping capital structure, which has been analyzed for a group of enterprises that are grouped under the WIG-construction index. The aim of the considerations was to examine the level of indebtedness of the surveyed enterprises and to attempt to determine the relationship between their capital structure and economic added value. The aim of the work as well as the objective and time scope determined the adoption of the following research methods: methods of economic analysis, tabular and graphical methods, and a linear regression analysis.

## 2. Review of literature

The fact there is no common understanding of capital structure definition has already been acknowledged. S.C. Myers pointed out that most research in the area of capital structure focuses on the debt-to-equity ratio, which is reflected on the right side of the balance sheet (Myers, 2001). S. Orlova, J.T. Harper and L. Sun claim that capital structure is usually presented in the context of a choice between debt and equity (Orlova S., Harper J.T. and Sun L., 2020). A. Kavous defines the capital structure as a mixture of debt and equity (Kavous A., 2017). A. Ripamonti indicates that capital structure is represented by the average debt-equity ratio of companies (Ripamonti A., 2020). According to W. Khémiri and H. Noubbigh, the capital structure is the optimal combination of equity and long-term debt (Khémiri W. & Noubbigh H., 2018). According to another view, it is necessary to distinguish between the concepts of financial structure and capital structure. In this context, financial structure indicates how the enterprise is financed, therefore it will be reflected in the liabilities of the balance sheet. On the other hand, the structure of capital is understood as equity derived from from the issue of shares, privileged capital and long-term debt (Gajdka, 2002). K. Janasz defines the structure of capital as the ratio of equity to foreign capital (Janasz, 2011). M. Jerzemowska states that it is the proportion of equity and foreign capital in financing the company's operations (Jerzemowska, 2018). J. Gajdka notes that the most appropriate approach to capital structure in Poland is to include equity and "permanently" interest-bearing external capital (which consists of long-term liabilities) and some short-term interest liabilities (the occurrence of which being relatively permanent) (Gajdka, 2002).

A. Damodaran notes that the area of corporate finance is related to three basic groups of problems in the area of financial decisions, including aspects that are related to the types of assets in which funds should be invested, the

method of financing the investments, and disposing of the surplus. The value of an enterprise depends on how these decisions are made; therefore, the following concepts should be considered (Damodaran, 2017):

- enterprises should invest in assets only when expected rate of return exceeds minimum expected rate of return;
- structure of investment financing (share of debt and equity) should maximize value of this investment;
- if enterprise cannot find investment that meets minimum acceptable rate of return, it should return any excess cash that is generated to its owners.

It is assumed that the aim of the theory of enterprise finance is to maximize its value, so any decision (both the investment and financing structure or a dividend payment) that increases an enterprise's value is considered to be good, and a decision that reduces the enterprise's value is considered to be bad. P. Thippayana, J. Gajdka and M. Szymański point out that decisions regarding the structure of capital belong to the group of the most important in the area of financial management (Gajdka J. and Szymański M., 2019), which influence the maximization of a company's value (Thippayana, 2014). Moreover, decisions that are related to capital structure affect the level of the cost of the capital and the decisions that are related to capital budgeting. It should be noted that D. Ding and R.C. Sickles mention that a company's performance is related to its ability to allocate capital and take risks (Ding & Sickles, 2018).

Financing an enterprise with debt brings tax benefits, as financial costs reduce the tax base. According to P. Thippayana, enterprises favor financing with external capital because of the benefits that are related to the tax-shield effect. At the same time, he draws attention to the fact that a greater share of foreign capital is conducive to financial problems and the likelihood of bankruptcy. In addition, agency costs speak against increasing debt, as managers of indebted companies tend to transfer risk if the companies have free cash flows. Therefore, they choose riskier projects at the expense of their shareholders' benefits (Thippayana, 2014). On the other hand, debt financing disciplines managers to make thoughtful decisions according to A. Damodaran. Under the "shield and sword" concept, managers will not be concerned with maximizing shareholder wealth unless forced to do so (and debt forces them to implement remediation projects and optimize enterprise management) (Damodaran, 2017; Vo M.T., 2021). Additionally, excessive indebtedness will dissuade managers from taking risks, as this could lead to bankruptcy. As a consequence, even good projects can be rejected (Damodaran, 2017). The negative aspects of debt financing include the following (Damodaran, 2017):

- higher indebtedness causes higher risk of bankruptcy as result of outstanding liabilities;

- increased debt creates room for conflict between lenders and owners;
- increased debt worsens financial flexibility.

### 3. Methodology and scope of conducted empirical research

This research covered companies from the WIG-construction index on July 3, 2018. The analysis was carried out for the following 39 entities: Atrem SA, Budemex SA, Centrum Nowoczesnych Technologii SA, Decora SA, Dekpol SA, Elektrobudowa SA, Elektrotim SA, Enegroaparatura SA, Erbud SA, ES-System SA, Ferro SA, Herkules SA, Instal-Kraków SA, Lentex SA, Libet SA, MDI Energia SA, Mercor SA, MFO SA, Mirbud SA, Mostostal Płock SA, Mostostal Warszawa SA, Ceramika Nowa Gala SA, P. A. Nowa SA, Poznańska Korporacja Budowlana Pekabex SA, Polimex-Mostostal SA, Pozbud T&R SA, Prochem SA, Projprzem Makrum SA, Rafako SA, Przedsiębiorstwo Modernizacji Urządzeń Energetycznych REMAK SA, Zakłady Magnezytowe Ropczyce SA, Seleno FM SA, Fabryka Farb i Lakierów Śnieżka SA, Tesgas SA, Torpol SA, Trakcja PRKiI SA, Ulma Construcccion Polska SA, Unibep SA, and ZUE SA. There was no available data for the following companies:

- MDI Energia SA (for years preceding 2012);
- MFO SA (for 2017);
- Pekabex SA (during period of 2010–2016);
- Torpol SA (during period of 2009–2012).

The following research questions were posed:

- What is the debt ratio in the surveyed enterprises?
- What is the capital structure in the surveyed entities?
- Does higher profitability lead to lower debt according to the pecking order theory?
- Does a high level of indebtedness indicate the good financial condition of an enterprise according to the signaling theory?
- What is the share of long-term debt in total debt?
- Is there a correlation between the debt ratio and the level of economic value added?

Information on the level of the debt ratio of each company was taken from the Notoria OnLine database. The balance sheet structure of equity and foreign capital was adopted for the research. The debt ratio was determined as the share of long- and short-term liabilities in the balance sheet total. The share of long-term debt in the total debt was established as a percentage share of the long-term liabilities in the total amount of liabilities.

#### 4. Synthetic presentation of capital structure in analyzed companies (2010–2017)

The average level of debt in the surveyed enterprises is presented in Fig. 1. When it is analyzing, it can be seen that it was at a level of 48.37% during most of the analyzed periods. Its lowest value was demonstrated in 2010 (44.24%); however, it systematically increased over the following years to reach a level that exceeded 50% in 2014. Over the following years, it gradually decreased to show a value of 48.43% in 2017. During the considered period, the highest levels of debt (exceeding 80%) were reported by Polimex-Mostostal S.A., Remak S.A., Mostostal Warszawa S.A., and Budimex S.A. The lowest levels of debt during the indicated period were reported by Pekabex S.A., ES-System S.A., Lentex S.A., Novagala S.A., and Panova S.A. (Notoria Serwis, 2018).

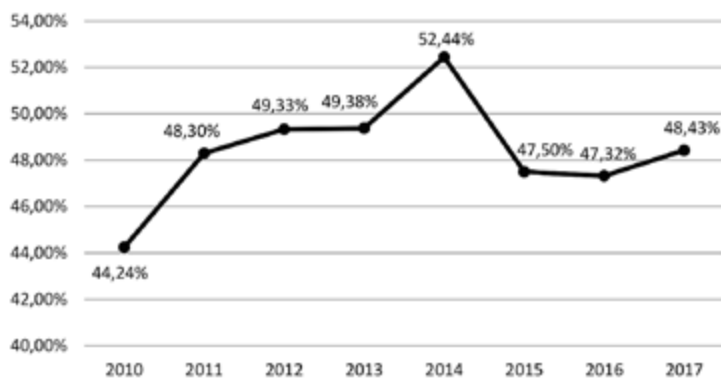


Figure 1: Average debt ratio in enterprises grouped under WIG-construction index during period of 2010–2017

Source: own study based on (Notoria Serwis, 2018).

When interpreting the obtained results, it should be noted that equity during each of the indicated periods had a dominant share in the structure of liabilities. The so-called “golden rule” of financing indicates that a company should not be more than 50% indebted; thus, its equity should finance about half of the value of its assets. It should be emphasized that a greater share of equity in the structure of liabilities provides a company with greater independence from the environment and ensures creditor solvency, which strengthens their tendencies to provide capital. A significant share of equity, however, limits the possibility of using the positive effect of financial leverage, which is manifested

in an increase in the return on equity (ROE) along with an increase in debt. However, this dependence will appear only in a situation where the interest rate on foreign capital will be lower than the profitability of the assets that are measured by a company's operating profit.

Therefore, it becomes necessary to take the aspect of financial risk into account. The involvement of foreign capital of an interest nature charges an enterprise with financial costs. As a consequence, fluctuations in the net profit per share will be more than proportional to fluctuations in the operating profit per share. This means that an increase or decrease in the net profit per share will be higher than the increase or decrease in the operating profit per share. This increases financial risk and leverage. Fig. 2 presents the levels of the return on equity of the surveyed enterprises.

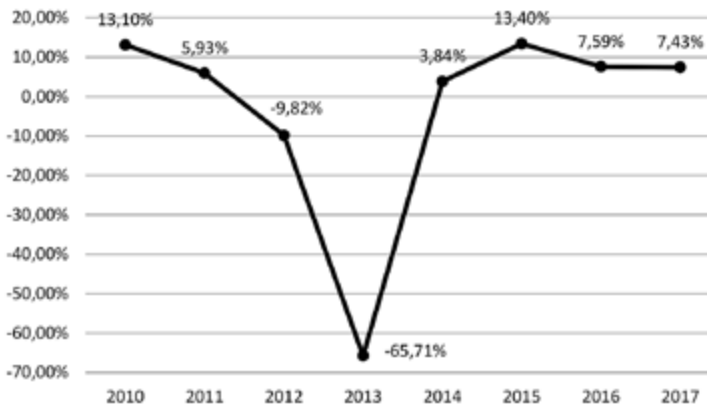


Figure 2: Rate of return on equity in enterprises grouped under WIG-construction index during period of 2010–2017

Source: own study based on (Notoria Serwis, 2018).

The rate of the return on equity was determined as the ratio of the net profit to the average value of the equity. A comparison of the changes in the average debt ratio with the ROE indicates the existence of an inverse relationship between the analyzed variables. In all of the analyzed periods, changes in the ROE during one period preceded changes in the debt ratio in the opposite direction during the next period; therefore, enterprises responded to the change in the rate of return on the capital employed by increasing or decreasing the debt. This is particularly visible in 2013, when the average deficit in equity amounted to 65.71%; in 2014, the debt ratio increased significantly. Summing up, the increase in the profitability of the entities led to a reduction in debt, which can be justified



by the fact that a greater number of investment projects could be financed from the profit. This is in line with the assumptions of the pecking order theory.

On the other hand, a high level of indebtedness indicates the good financial condition of an enterprise according to the signaling theory; this may imply that highly profitable entities show a high share of debt in their capital structures (Gajdka, 2002). In order to test the indicated theory, information on the levels of debt and profitability (measured as the rate of return on equity) was compiled. Fig. 3 presents the average levels of the rates of return on equity and the average levels of the debt ratio of the surveyed enterprises during the period of 2010–2017.

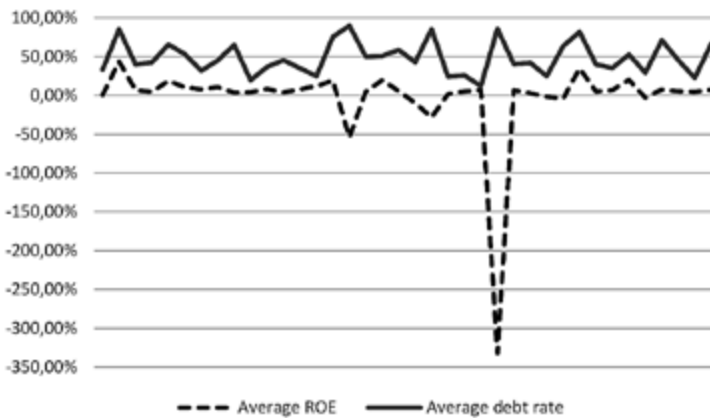


Figure 3: Rate of return on equity and debt rate of enterprises grouped in WIG-construction index during period of 2010–2017 (values in percentages)

Source: own study based on (Notoria Serwis, 2018).

The conducted analysis did not show a complete relationship between the level of debt and the profitability in the analyzed group of enterprises. There is no visible correlation between the debt ratio and the ROE; therefore, the signaling theory is not reflected for the examined group of entities.

The share of long-term debt in the total debt is presented in Fig. 4. Regarding LIBET SA, there was debt that was only comprised of short-term debt in 2009 (which constituted 19.35% of its balance sheet total). With regard to MDI Energia SA, no long-term liabilities were recorded in 2012 nor 2013. Selena FM SA did not report any long-term liabilities during the years of 2009 and 2010. In the context of the deliberations on debt and the rate of return on equity, reference should be made to the share of short-term foreign capital in the total debt. The performed calculations showed that the sharp decline in the ROE in 2013 was not related to the change in the area of short-term debt. The share

of long-term debt in the total debt remained at a stable level during each of the analyzed periods (averaging 23.04%).

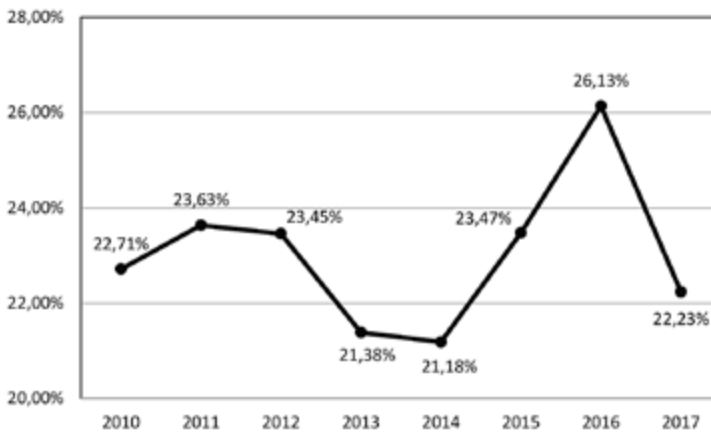


Figure 4: Share of long-term debt in total debt in WIG-construction index companies during period of 2010–2017 (values in percentages)

Source: own study based on (Notoria Serwis, 2018).

In 2012, there was a significant deterioration in the economic situation of the construction section, which undoubtedly translated into a decrease in the obtained results and resulted in a significant decrease in the profitability of the equity (Główny Urząd Statystyczny, 2015). This results from the considerations that the enterprises that are grouped under the WIG-construction index mainly finance their activities with equity (followed by short-term liabilities). Their share slightly exceeded the share of long-term liabilities (52.42%). Short-term liabilities usually have a lower cost of acquisition than long-term liabilities do. As the share of short-term liabilities translates into the level of financial liquidity, the ability to pay the liabilities of the surveyed enterprises in a timely manner during the analyzed period was checked. The current liquidity ratio was calculated as the ratio of the current assets to the short-term liabilities, while the quick liquidity ratio was determined as the ratio of the current assets reduced by the inventories to short-term liabilities – Tab. 1.

Table 1: Average level of financial liquidity in enterprises grouped under WIG-construction index from 2010 through 2017

Description	2010	2011	2012	2013	2014	2015	2016	2017
Current ratio	2.80	1.56	1.55	1.59	1.49	1.76	1.74	1.51
Quick ratio	2.46	1.26	1.26	1.29	1.21	1.43	1.40	1.21

Source: own study based on (Notoria Serwis, 2018).

After interpreting the levels of financial liquidity ratios, it can be stated that these enterprises maintained their abilities to settle their liabilities on time in the average perspective. There were no significant discrepancies between the current ratio and the quick ratio, which means that the analyzed entities did not keep large amounts of funds in their inventories. A very high level of financial liquidity was observed in 2010 as a result of the exceptionally high level of financial liquidity in Selena FM SA. During the indicated period, this entity had a very large share of loans and other receivables as well as financial assets. If this entity were to be excluded from the study, the current ratio for the analyzed group of entities would reach a level of 1.80 in average terms. In 2015, however, a higher level of liquidity was demonstrated by Pekabex S.A., which had a large amount of cash during the indicated period. Summing up, it should be stated that the levels of the financial liquidity ratios implies that the ability to pay liabilities on time was maintained and was at a stable level in the analyzed group of entities.

## **5. Determining relationship between capital structure and economic added value in analyzed entities**

For those companies that are grouped under the WIG-construction index, whether the change in the amount of debt translated into an analogous change in the amount of economic value added was checked during the analyzed period. A regression analysis was performed using Statistica v.13.1. The level of economic added value was presented by Kruk (2018). The EVA was adopted as a dependent variable, and the debt rate in an enterprise was adopted as an independent variable. The results of the analyses are presented in Tab. 2 (statistically significant relationships are presented against gray backgrounds).

These calculations show that there was a relationship between the debt rate and the economic value added during four of the eight analyzed periods; the relationship was positive in two of the mentioned periods, and negative in the other two. Therefore, it is not possible to clearly determine the nature of the relationship between the debt rate and the economic added value on the basis of the research (this will require further study).

The conducted observations showed that an increase or decrease in the debt was preceded by an increase or decrease in the EVA during the next period, respectively, in 117 out of 227 cases (51.54%). In the course of further considerations, it was decided to check whether the changes in the debt during a given period was reflected in the changes in the EVA during the same period and whether the changes in the debt ratio from one period was reflected in the changes in the economic value added in the following one. The EVA was adopted as the dependent variable, and the debt rate was the independent variable. The

conducted research (in which the linear regression analysis was carried out) did not show any relationships between the changes in the debt rate and the changes in the economic value added during any of the analyzed periods. Due to the size of the work, these results were omitted.

Table 2: Evaluation of parameters of linear EVA model

Description	Parameter	Standard error	T(33)	p-value
<b>2010</b>				
<b>Intercept</b>	-30,885.4	11,022.13	-2.80212	0.008430
<b>DEBT</b>	100,214.0	23,288.37	4.30318	0.000141
<b>R<sup>2</sup></b>	0.35943914			
<b>2011</b>				
<b>Intercept</b>	15,850.8	29,270.60	0.541527	0.591782
<b>DEBT</b>	-38,210.4	56,827.59	-0.672393	0.506015
<b>R<sup>2</sup></b>	0.01351519			
<b>2012</b>				
<b>Intercept</b>	93,606	54,282.3	1.72443	0.093713
<b>DEBT</b>	-236,201	101,726.3	-2.32193	0.026361
<b>R<sup>2</sup></b>	0.13686665			
<b>2013</b>				
<b>Intercept</b>	31,646.8	16,390.38	1.93082	0.061638
<b>DEBT</b>	-89,123.5	30,697.20	-2.90331	0.006353
<b>R<sup>2</sup></b>	0.19409078			
<b>2014</b>				
<b>Intercept</b>	11,654.1	24,091.59	0.483739	0.631500
<b>DEBT</b>	-36,204.2	40,154.28	-0.901628	0.373248
<b>R<sup>2</sup></b>	0.02208280			
<b>2015</b>				
<b>Intercept</b>	-16,981.2	11,201.26	-1.51600	0.138016
<b>DEBT</b>	54,661.0	21,324.84	2.56326	0.014569
<b>R<sup>2</sup></b>	0.15079742			
<b>2016</b>				
<b>Intercept</b>	64,367	100,766.5	0.63877	0.526906
<b>DEBT</b>	-209,775	193,263.6	-1.08544	0.284750
<b>R<sup>2</sup></b>	0.03085980			
<b>2017</b>				
<b>Intercept</b>	1,063,973	1,127,424	0.94372	0.351604
<b>DEBT</b>	-3,102,285	2,150,652	-1.44249	0.157810
<b>R<sup>2</sup></b>	0.05464086			

Source: own study based on own research.

Since the research was conducted for a specific sector to confirm or negate the results of the analyses, it would be reasonable to conduct analogous research

on the relationship between the debt rate and the level of economic added value for another sector (preferably for all of the companies that are listed on the Warsaw Stock Exchange). It also seems reasonable to carry out similar studies with the assumption that capital structure is understood as equity increased by interest liabilities.

## 6. Conclusion

This study presents the levels of debt in enterprises that were grouped under the WIG-construction index during the period of 2010–2017 and an attempt to show the relationship between capital structure and economic added value. The key findings include the following:

- In the analyzed enterprises, the share of debt fluctuated below 50% in average terms during all of the analyzed periods; therefore, equity had the dominant share. The share of foreign capital was significant and stable, which implies that these enterprises deliberately shaped their capital structures. This translates to maintaining a stable level of financial flexibility that is understood as access to various sources of financing and the ability to choose between them.
- During the analyzed period, a change in the rate of return on equity preceded a change in the debt ratio in the opposite direction during the following period, so it can be concluded that enterprises responded to changes in their ROEs by reducing or increasing their levels of debt accordingly.
- In the analyzed group of entities, the pecking order theory is reflected, while the signaling theory is not.
- During the analyzed period, the share of long-term liabilities and the share of short-term liabilities were at a similar level in the structure of the liabilities and provisions for the liabilities. It should be noted that the analyzed enterprises had the ability to settle their liabilities on time; at the same time, it should be emphasized that they did not keep large amounts of cash in their inventories;
- The studies showed that an increase or decrease in debt was preceded by an increase or decrease in economic value added, respectively, in 51.54% of the cases.
- On the basis of the conducted research, it is not possible to clearly define the relationship between the debt ratio and the EVA.

The conducted analyses should be treated as a contribution to further research in the area of capital structure, as the fact that capital structure affects the value of an enterprise has not been ruled out.

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# DEBT FINANCING OF BUSINESS ENTITIES: CURRENT STATUS AND FEATURES

## 1. Introduction

Business financing is a topical issue at every stage of business development: both at the time of creation, during the implementation of operating activities, and when deciding on the expansion or reorientation of activities. Business entities have only two opportunities to attract financial resources – 1) forming equity, 2) attracting debt financing. And the choice always depends on the conditions and criteria for deciding on business financing. However, own funds are not always enough, especially when entering new markets, especially when it comes to business expansion, entering new markets. In this case, debt financing comes first because the opportunities for borrowing capital are broad.

It is not always the case that companies can cover all their financial liabilities with liquid assets. Especially in crisis times, this can be an issue, as the coronavirus (COVID-19) pandemic has shown. Companies need financial resources, among others, to cover the costs of running the business, fund their debts, modernize technologies, or expand the activity to new products or markets.

## 2. Literature review

In the scientific literature, debt financing issues are often studied. The authors consider various aspects of the debt financing of business entities. General theoretical research reveals the essence of different types of debt (Yu, Johnson & Hsieh, 2008), the role of debt financing (Amjad, 2021; Bedratenko, 2012; Oliynyk, Zufan & Adamenko, 2016), peculiarities of debt financing (Shevchenko & Lutsenko), principles and prospects of debt financing (Yereshko,

Friedman & Milko, 2016), the relationship between private debt and economic growth (Shkvarchuk & Slavyuk, 2021), the relationship between debt finance and profitability in the emerging market (Nyamwanza et al., 2020), factors that influence decision-making on attracting debt financing (Nyamita, Nyamita & Dorasamy, 2014), debt financing models (Oliynyk, Oliynyk & Adamenko, 2015), directions of debt financing improvement (Makedon, 2013).

Special attention is paid to debt financing by J. Cameron and M. E. Hoque, who analyze major challenges for SME owners working in the emerging market (Cameron & Hoque, 2016). During the crisis, the need for business entities for debt financing is constantly growing (Polishchuk et al., 2020). N. Petru and A. Tomaskova determine the priority of using different types of financing by family businesses (Petru & Tomaskova, 2020), and O. Oliynyk and I. Sidelnikova consider Eurobonds as a tool for mobilizing debt financing on the international capital market (Oliynyk & Sidelnikova, 2014).

As business entities actively involve debt financing, the development of debt financing instruments is also the subject of research (Lyubich & Svistun, 2020; Ganechko, 2011; Germanenko & Baraban, 2016; Pavlyuk & Cherkezyuk, 2014; Yaroshevich, Chubka & Bondarenko, 2018). The possibility of using various debt financing instruments largely depends on the level of development of the financial market in general and the stock market as its part in particular. Because of these V. Romanyshyn and O. Bulavynets interpret the debt market as an alternative source of financing for enterprises (Romanyshyn & Bulavynets, 2014).

The comprehensiveness of research on debt financing in the scientific literature indicates the relevance of the chosen topic and the need for its development in own research.

### **3. Types of debt financing of business entities**

Businesses can involve funds by issuing equity or using debt. Many business entities prefer to use debt to support their activity and growth rather than equity. Debt financing is an easier way to expand the business because owners don't want to involve new business partners when they see the real possibility to earn more. The business needs funds regularly, and the entire requirement is challenging to meet with equity financing. So, debt financing acts as a helping hand to fulfil the business entities in funds involvement.

The main reasons why businesses entities use debt financing include:

- debt does not provide an ownership stake;
- debt can be a cheaper capital growth source if the business entity is growing at a higher rate than the interest rate on debt financing;
- the interest rate on debt financing is a part of business expenses and let reduce taxation, making debt a more cost-effective form of financing.

Debt financing can be used for different needs: to finance working capital, to finance capital expenditures, to obtain other companies, etc. For business entities, debt financing has a fixed cost and interest rate. For the investors, debt financing provides fixed investment income.

Businesses can obtain debt financing from several different sources: banks and credit unions, online or alternative lenders, nonprofit lenders, merchant cash advance companies, friends, and relatives. Types of debt financing can see in Table 1.

Table 1: Types of debt financing

Types of debt financing	Explanation
Loans	It is the most popular type of debt financing. Business entities borrow money from commercial lenders like banks. Loans are for a fixed period and with a regular interest rate. Loans can be for short, intermediate, or long-term depending upon the financial requirements of the business entities.
Trade Credit	It is an arrangement in which the business entity can purchase the goods now and pay for them later. This way the business entity can get debt financing for the short term.
Instalment Purchase	It comprises buying an asset and making pre-determined payments. The business entity can get debt financing for the long term.
Bonds	It is a source of long-term debt capital for a business entity. The business entity can raise funds by selling bonds to different buyers and sharing profits on the projects for which bonds are issued.

Source: formed by the author on the basis of (Lyubich & Svistun, 2020; Oliynyk, Oliynyk & Adamenko, 2015; Petru & Tomaskova, 2020; Yaroshevych, Chubka & Bondarenko, 2018; Yu, Johnson & Hsieh, 2008)

So, there are two main types of corporate debt:

- loans;
- bonds.

In the case of a loan, a company borrows an agreed amount of money from a bank or other financial institution, with an agreed interest rate payable until the loan is fully repaid. In this sense, corporate loans operate fundamentally in the same way as consumer loans. Importantly, loans cannot be openly traded on financial markets. Bonds can be thought of as a promise to repay a fixed amount of money on a certain date that is sold to investors.

Figure 1 presents the advantages and disadvantages of debt financing for business entities.

Each time choosing the sources of business financing, each business entity weighs the existing advantages and disadvantages of using debt financing and decides on the appropriateness of its involvement.

Next, let's analyze the current state of debt financing.

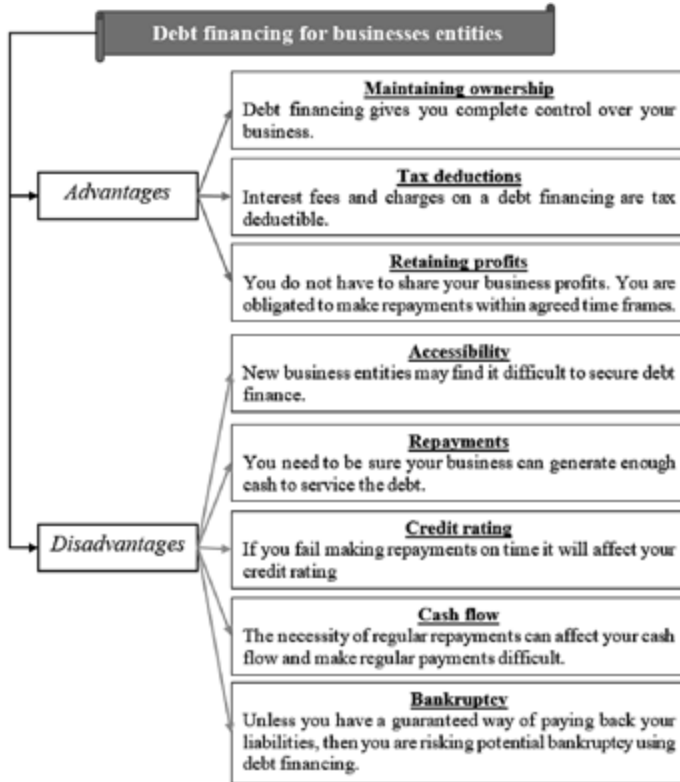


Figure 1: Advantages and disadvantages of debt financing for business entities

Source: formed by the author on the basis of (Amjad, 2021; Oliynyk, Oliynyk & Adamenko, 2015, Shevchenko & Lutsenko, 2019; Yu, Johnson & Hsieh, 2008)

#### 4. Current status of private debt financing

Total external debt shown in the International Debt Statistics (IDS) is the sum of long-term external debt, short-term debt, and IMF credit. It represents the total debt owed to non-resident creditors and is repayable in both foreign and domestic currency. Also, external debt is divided by creditors for private and public debt. Private nonguaranteed debt comprises the external obligations of private debtors that are not guaranteed for repayment by a public entity in the debtor country.

According to statistical data, we can analyze debt dynamics of 6 regional groups: East Asia & Pacific; Europe & Central Asia; Latin America & the Caribbean; the Middle East & North Africa; South Asia; Sub-Saharan Africa (International Debt Statistics 2022, 2021). Also, it is possible to analyze debt dynamics according to the countries income group.

Ukraine is a Middle-income country and in Europe and Central Asia Regional Groups. Since the object of the research is the debt financing of business entities, ie private debt financing, for further analysis we selected only those indicators that characterize the dynamics of private debt.

We have compared private debt dynamics in terms of different indicators for Ukraine, Europe & Central Asia, as well as for Middle-income countries (Figure 2).

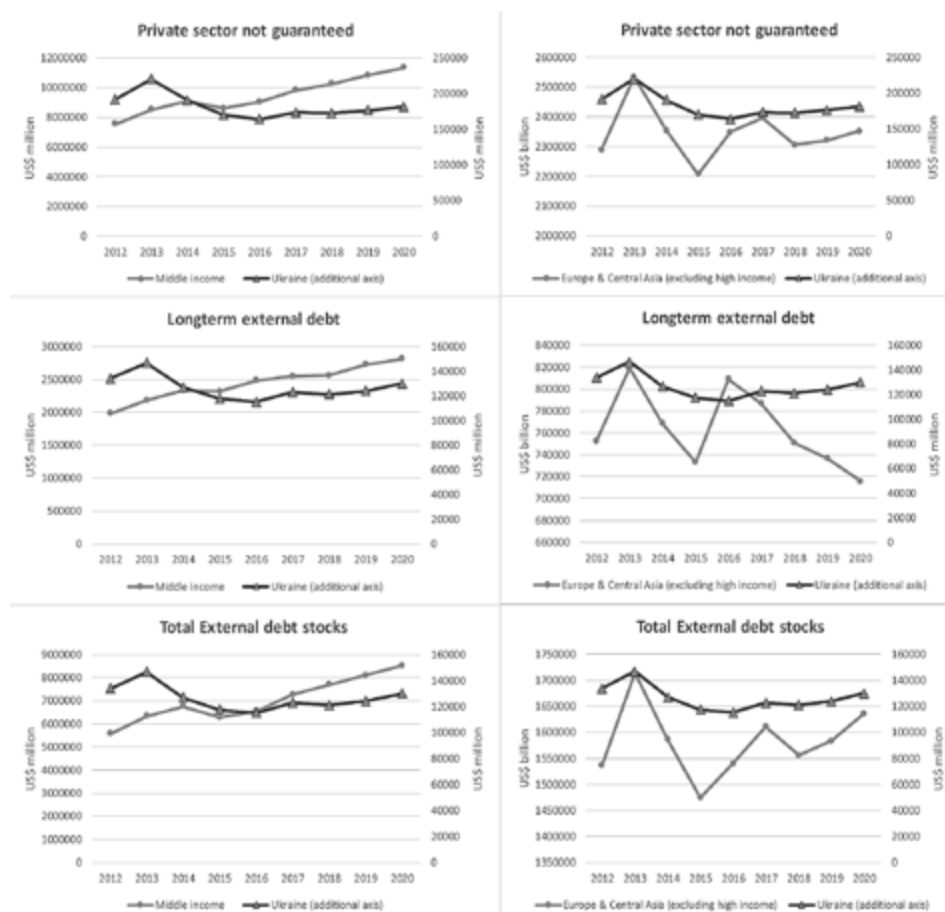


Figure 2: Dynamics of private debt in terms of private sector not guaranteed debt, longterm external debt and total external debt stocks in 2012–2020

Source: formed by the author on the basis of (International Debt Statistics 2022, 2021)

If we compare the dynamics of the private sector not guaranteed debt, we see that for Middle-income countries, there is a constant gradual growth of this indicator (the increase was 50.28% in 2012–2020), for Ukraine the dynamics

were not so linear: there was an increase of 15.04% in 2012–2013, the value of the indicator decreased by 25.63% in 2013–2016, and since 2016 there has been a slight increase (by 10.86% in 2016–2020), but the level of 2012 was not reached. Regarding the Europe & Central Asia countries, the dynamics of the indicator were abrupt, reaching their maximum in 2013 and remained highly volatile during the analyzed period.

Long-term external debt and total external debt stocks for Ukraine and Middle-income countries showed similar dynamics as the indicator “Private sector not guaranteed debt”. In particular, the total growth of long-term external debt for Middle-income countries amounted to 42.22% in 2013–2020, and total external debt stocks increased by 53.14%. For Europe & Central Asia countries, the dynamics of these indicators were slightly different from the dynamics of the private sector not guaranteed debt. In particular, Long-term external debt showed a declining trend during 2016–2020, although it was quite volatile until then. The decrease of this indicator was 11.52% in 2016–2020, and in general, the reduction was 4.83% in 2012–2020. On the other hand, total external debt stocks for Europe & Central Asia countries increased by 10.97% in 2015–2020 and also showed significant volatility during the analyzed period.

Differences in the dynamics of different indicators for Europe & Central Asia countries are due primarily to the peculiarities of development and economic situation in those countries that are part of this region. Thus, the financial crisis, military conflict, political upheavals, and other emergencies cause a reorientation of business, a change in business propensity to risk, and attracting financial resources.

Figure 3 shows us the debt dynamics in terms of private creditors for analyzed regions and Ukraine in 2012–2020.

Bondholders’ debt as a debt of private creditors grew in all analyzed regions during 2012–2020: in Europe & Central Asia the growth rate was 115.40%, in the Middle-income countries it was 150.55%, and in Ukraine – 79.99%. Despite the identity of the dynamics, Ukraine has real prospects for developing debt financing through the issuance and placement of bonds because in the regions to which it belongs, this segment of debt financing is growing much faster.

The debt of commercial banks and other private creditors began to grow in Ukraine rapidly since 2017, although in 2013 compared to 2012 it decreased by 96.21% to the minimum level for the analyzed period of US\$ 40 million. The growth rate of this indicator was 4889% in 2013–2020. In Europe & Central Asia, on the other hand, the debt of commercial banks and other private creditors decreased by 44.23% in 2013–2020, and in Middle-income countries – by 5.41%. That is, in general, in the regions to which Ukraine belongs, there is a decrease in the banks’ share in debt financing and a reorientation to the use of other debt financing instruments, in particular using bonds.

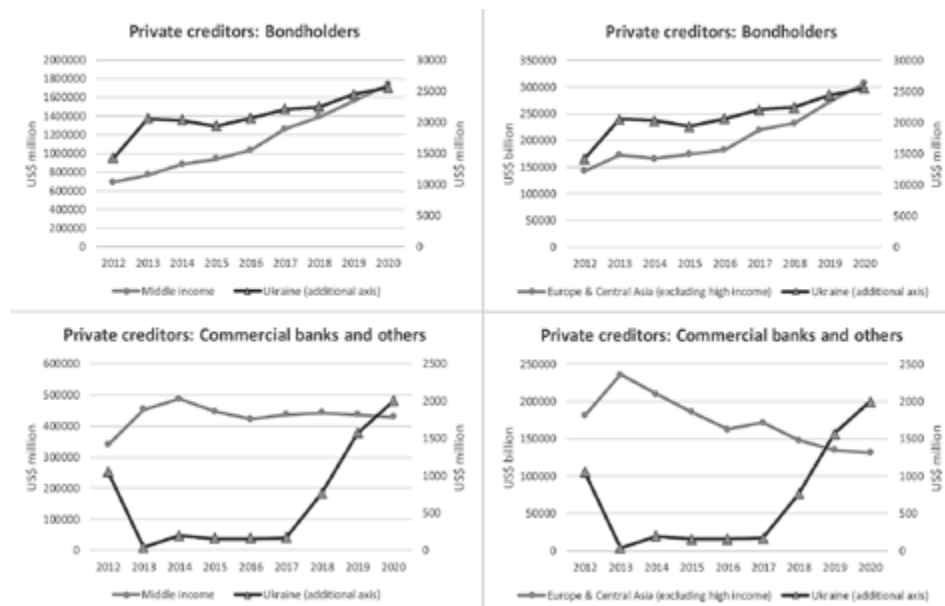


Figure 3: Dynamics of debt in terms of private creditors in 2012–2020

Source: formed by the author on the basis of (International Debt Statistics 2022, 2021)

Figure 4 shows us the dynamics of private nonguaranteed debt for analyzed regions and Ukraine in 2012–2020.

Private nonguaranteed debt from bondholders in Middle-income countries gradually increased during 2012–2020 and did not decrease in any year. The total increase was 132.98%. The trend was similar in Europe & Central Asia countries – growth was 104.94%. At the same time, since 2013 in Ukraine there has been a significant reduction in private nonguaranteed debt from bondholders (by 60.79% in 2016–2016) and further stabilization of its volume at about US\$ 47 billion.

Private nonguaranteed debt from commercial banks and others in Middle-income countries gradually increased during 2012–2020 – the overall growth rate was 26.57%. However, in Ukraine and Europe & Central Asia countries, there was a reduction of this component of debt: in Ukraine – by 7.61%, in Europe & Central Asia – by 12.12% in 2012–2020 (if we take into account that the maximum peak values were in 2013, the reduction in Ukraine was by 25.95% in 2013–2020, in Europe & Central Asia – by 17.80%).

The share of private nonguaranteed debt from bondholders in Europe & Central Asia increased from 6.23% to 13.41% in 2012–2020, in Middle-income countries – from 14.71% to 24.10%, and in Ukraine – decreased from 11.35% to 8.56%. Given Ukraine’s membership in both groups, it is necessary to increase the

share of private nonguaranteed debt from bondholders in the debt financing of the economy. In fact, the real prospect of increasing the amount of debt financing by business entities is the intensification of work with bonds.

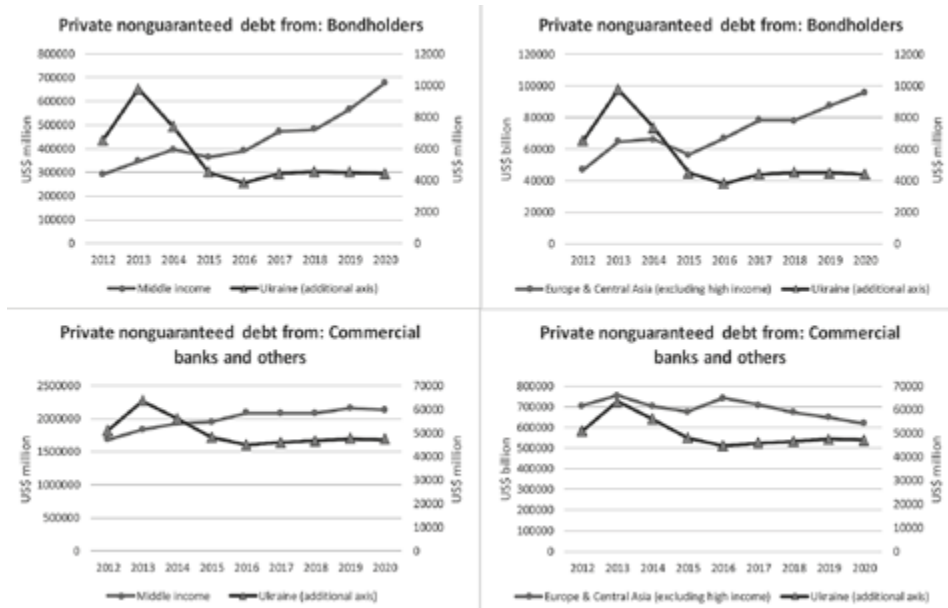


Figure 4: The dynamics of private nonguaranteed debt for analyzed regions and Ukraine in 2012–2020  
 Source: formed by the author on the basis of (International Debt Statistics 2022, 2021)

### 5. Use of bonds for debt financing of business entities

Bonds is one of the promising tools for the development of debt financing of business entities not only in Ukraine but also in Europe and the world. In essence, bonds are debt securities that provide for the payment of a coupon to their holder and repayment of the debt in a timely manner. By their nature, bonds are little different from loans, but debt financing is possible not only through financial institutions, the main of which are banks but also through individuals, other enterprises. When business entities are unable to get a bank loan, bonds solve the problem by allowing alternative investors to become lenders.

While bonds are the most common financing instrument in the United States, in China and the Euro area, today, the overwhelming majority of corporate debt is in the form of loans. Loans are the main debt financing tool in Low- and Middle-income countries (Szmigiera, 2021). But we have new trends in bonds usage. For example, Chinese entities issued bonds in 2020 for 24% more than in 2019 (Debt Report 2021, 2021). Bond issuance by Low- and



Middle-income countries rose 3% in 2020 and totalled US\$ 388 billion. Totally in 2020, bond issuance by private sector entities rose 23% and totalled US\$ 159 billion. Bond issuance by Low and Middle-income countries, other than China, fell on average 14% in 2020 to US\$ 210 billion, but like China were characterized by increased issuance by private sector entities, up 21% over the 2019 level (Debt Report 2021, 2021).

Figure 5 shows us bond issuance by Low- and Middle-income countries (LMICs) by debtor type in 2018–2020.

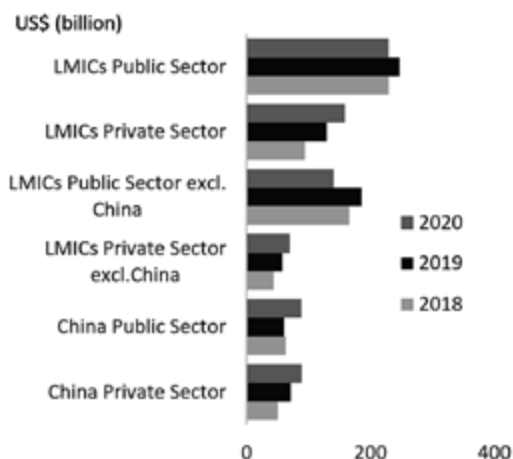


Figure 5: Bond issuance by Low- and Middle-income countries by debtor type in 2018–2020

Source: (Debt Report 2021, 2021)

As we can see, debt financing of business entities through the issuance of bonds increases from year to year. The COVID-19 pandemic crisis did not cause a decrease in debt financing by bonds. Therefore, it can be argued that the development of debt financing instruments is a necessary condition for economic growth in the future. After all, different debt instruments allow you to choose the most appropriate option for attracting debt financing for the business.

Figure 6 shows us the regional distribution of bond issuance by Low- and Middle-income countries in 2018–2020.

As we can see but bond issuance fell in all regions except Latin America and the Caribbean. These countries issued US\$ 100 billion in bonds in 2020. The increase in 22% was provoked by a 57% jump in bond issuance by private business entities. Bond issuance by private business entities in 2020 was dominated in Brazil and Mexico, and bond issuance totalled around US\$ 14.5 billion in 2020. Europe & Central Asia countries showed the sharpest decrease in bond issuance in 2020. It fell 42% in 2020. It was provoked by the

downturn in the non-resident bond purchase and the steep reduction in bond issuance of the Russian Federation (Debt Report 2021, 2021).

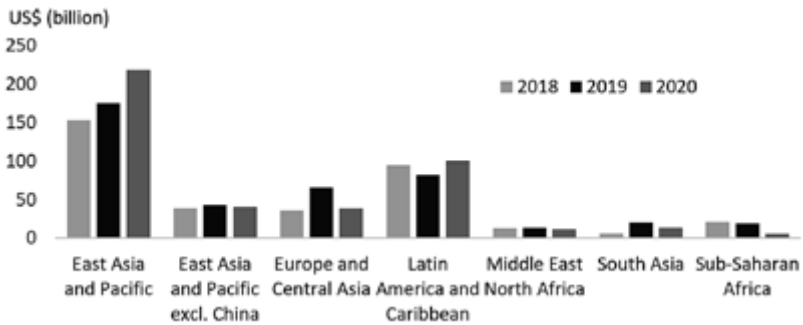
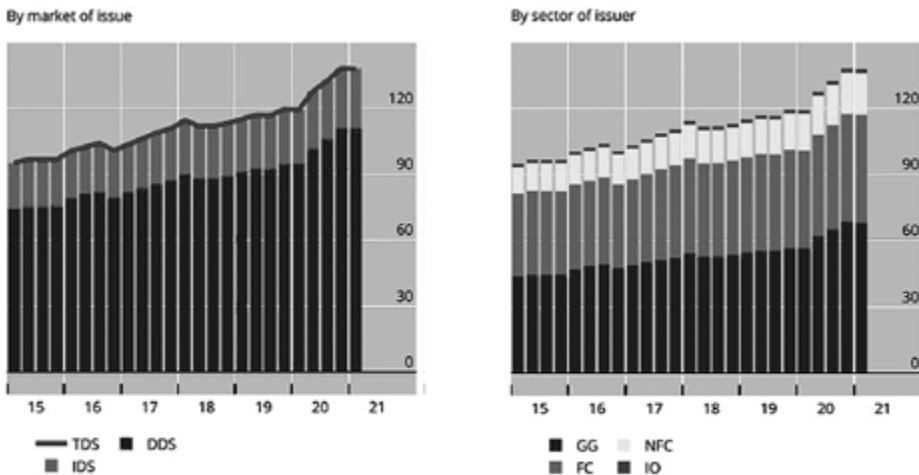


Figure 6: Regional distribution of bond issuance by Low- and Middle-income countries in 2018–2020  
Source: (Debt Report 2021, 2021)

Figure 7 shows us the dynamics of the global debt security market in 2015–2021.

As we can see, the global debt security market is growing during 2015–2021, and in 2020–2021 the growth rate became higher, which indicates a lack of own funds to finance business and the growing need to attract debt financing among businesses entities.



Notes: DDS – domestic debt securities; IDS – international debt securities; TDS – total debt securities; FC – financial corporations; GG – general government; IO – international organizations; NFC – non-financial corporations-

Figure 7. Dynamics of global debt security market in 2015–2021 (in US\$ trillions)  
Source: (Debt Report 2021, 2021)

Thus, the share of debt securities created by non-financial corporations in the total global debt security market is about 20%. However, the volume of debt securities of non-financial corporations increased from US\$ 12.23 trillion to US\$ 18.88 trillion from the 1st quarter of 2015 to the 1st quarter of 2021 (by 54.37%). And this growth in percentage terms was the highest compared to other sectors of debt securities issuers.

## 6. Debt-Financing-Management Information System

In order to generalize and systematize information on the debt financing of business entities, it is advisable to form an information system that would improve the management of debt financing for business entities. Building an information system involves the formation of an information database that will be used in the future to make decisions when choosing a business financing scheme. Therefore, we assume that the debt financing database should contain information on potential instruments for attracting such financing (Table 2).

Basic information on debt financing should be available for all stakeholders. Data on the purpose or the end-use of the borrowed funds are also important for analyzing debt financing details.

Table 2: Information on debt financing

Type of Information	Description
I. Details of debt financing	Purpose of borrowing
	Type of debt financing instrument
	Participants of debt financing (borrower, implementing agency, creditor, disbursement agency, creditor insurer)
	Economic sector receiving borrowing
II. Terms of debt financing	Interest (type, period, basis for calculation)
	Fee (Commitment fee, penalty fees, others)
	Disbursement terms (period, method)

Source: formed by the author

In addition to the above, details on the terms of debt financing should be compiled, especially the grace period and the maturity dates, interest rates and fees that are to be paid, and the dates for payments of interest and the type of repayment profile of principal. In the case of bonds, information such as the issue price and the yield would need to be captured as well. Data on disbursements can be obtained on an instrument-by-instrument basis or for groups of instruments. All data on debt financing need to be compiled on a regular and timely basis. This will allow the formation of the business financing scheme using relevant

information and choosing a real prospect of rising debt. Information should be stored in an efficient and comprehensive computer-based debt management system that can undertake a number of tasks and so support both operational and policy functions. Table 3 sets out the typical tasks that a Debt-Financing-Management System should be able to undertake.

Table 3: Tasks of a Debt-Financing-Management System

Task	Requirements to realize the task
System have to be able to maintain a comprehensive inventory of debt financing information	<ul style="list-style-type: none"> <li>– Details of debt financing</li> <li>– Terms of debt financing</li> <li>– Actual debt-service charges</li> </ul>
System have to be flexible to produce a variety of debt financing reports	<ul style="list-style-type: none"> <li>– Reports on selection criteria of details of debt financing</li> <li>– Reports on selection criteria of terms of debt financing</li> <li>– Reports on debt-service profile (historical and forecast) based on selection criteria</li> </ul>
System have to be able to perform basic debt financing analysis	<ul style="list-style-type: none"> <li>– Portfolio analysis</li> <li>– Analysis on the impact of new debt offers</li> <li>– Economic simulations using macroeconomic data</li> <li>– Risk modelling</li> </ul>
System have to be flexible to interface with other systems	<ul style="list-style-type: none"> <li>– Export debt data</li> <li>– Import debt data</li> <li>– Interface with integrated financial management systems</li> </ul>

Source: formed by the author

Performing such tasks will allow us to quickly manage debt financing, redistribute debt funds between entities and sectors of the economy, because the ability to maintain a comprehensive inventory of debt financing information, flexibility to produce a variety of debt financing reports, ability to perform basic debt financing analysis and flexibility to interface with other systems will ensure the efficiency of the Debt-Financing-Management System and the possibility of its integration into the financial information systems of enterprises.

## 7. Conclusion

Summarizing the results of the research, it should be noted that the existing benefits and potential of attracting the required amount of financial resources make debt financing particularly attractive. This is an opportunity to rebuild and develop a business in case there are not enough own funds.

The basis of debt financing of business entities is loans and bonds. Given the impact of COVID-19 pandemic crises on businesses, including financial institutions, debt financing through the issuance of bonds is actively developing. For Ukraine, this is a promising area of business financing and bringing it out of

the crisis, especially given the difficulties of stimulating lending to the economy by banks. Thus, bonds are an instrument of debt financing for medium and large businesses, but for small businesses, bank loans continue to be the main way to attract credit resources.

In order to stimulate the development of debt financing of business entities through the issuance of bonds, we propose to implement a Debt-Financing-Management System that will systematize information on instruments and conditions of debt financing, promote transparency and openness of debt financing, and become an information-analytical platform to substantiate decisions on the issuance of debt instruments for individual businesses.

In further research, it is advisable to focus on information technology for decision-making on the use of debt financing in the business entities' activities, which will be based on Data Mining systems, modelling, and Data Science methods in the financing of business entities.

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**Ryszard Węgrzyn**

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# USAGE OF DERIVATIVE INSTRUMENTS BY POLISH NON-FINANCIAL ENTERPRISES<sup>1</sup>

## 1. Introduction

Derivative instruments are important financial market instruments that have been widely used for many years in developed market economies, in particular by financial institutions. Following these institutions, they also became the subject of interest of non-financial enterprises. The derivative market, albeit with a long delay, also began to develop in Poland. In 1998, the first futures on the WIG20 index and the USD/PLN exchange rate appeared on the Warsaw Stock Exchange. Therefore, it is worth paying attention to the use of derivatives by Polish non-financial enterprises.

The main objective of the paper is to assess the use of derivative instruments by Polish non-financial enterprises in the context of the development of derivative market.

First, the development of the world derivative market was assessed and the changes on the Polish derivative market were analyzed. Then, the balance sheet data of Polish non-financial enterprises that used derivatives were analyzed. The use of derivatives was assessed on the basis of, inter alia, data provided by the World Federation of Exchanges, International Swaps and Derivatives Association and the Statistics Poland.

## 2. Development of the derivative markets in 2010–2020

The development of the global derivative market, which started in the 1970s, continued, despite temporary slowdowns, for the next decades. The main

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motives for entering into derivative transactions were: hedging, speculation and arbitrage. The main economic function of derivative instruments, with which their development is also related, is the possibility of effective transfer of risk by entities showing risk aversion to entities willing to take over this risk in the hope of making a profit (Tarczyński, 2003).

The scale of using derivative instruments can be assessed, *inter alia*, on the basis of the market turnover in these instruments. Trading volumes are particularly useful in this regard, for which the fluctuating value of the underlying instrument does not affect their level. Taking into account the volume of trading on the world market, it can be noticed that the derivative market has been developing at the fast pace for many years and even the financial crisis of 2008 did not cause its decline (Węgrzyn, 2017a, 2017b).

The deep decline in the volume of trading took place in 2012, when 21 billion derivative contracts were concluded on stock exchanges around the world, compared to 25 billion contracts in 2011. This decrease concerned all classes of derivatives, except for commodity derivatives, and all regions of the world. These changes were associated with the decline in activity on the spot market, the low volatility and low interest rates, as well as the transfer of some activity from equity derivatives to commodity derivatives. From 2015, however, another upward trend was clearly visible (see Figure 1).

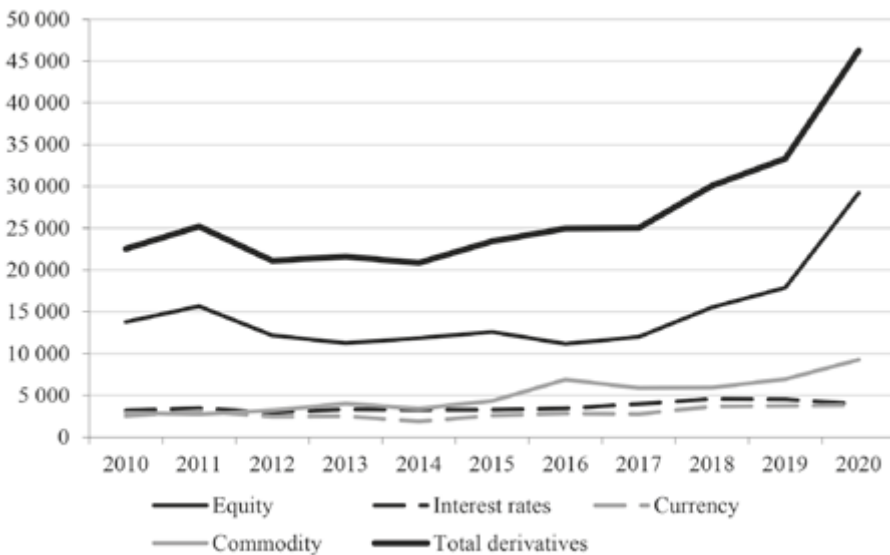


Figure 1: Trading volume of exchange-traded derivatives (million)

Source: own study based on (World Federation of Exchanges, 2011–2021)



In 2018, the International Swaps and Derivatives Association (ISDA) conducted the survey that resulted in over 900 responses. The research focused mainly on assessing the future of the derivative market. To the question: do you expect overall derivatives volumes in the market to increase, decrease or stay the same over the next three to five years? participants replied as follows: increase – 56.6%, stay the same – 26.7%, decrease – 16.6%. In turn, to the question: do you think derivatives end-user activity (hedging, trading) in the industry will increase, decrease or stay the same over the next three to five years? the answers were indicated: increase – 55.9%, stay the same – 27.2%, decrease – 17.0% (International Swaps and Derivatives Association, 2018). In both cases, therefore, only about 17% of the respondents turned out to be pessimistic in assessing the future of the derivatives market.

In 2020, the COVID-19 pandemic led to panic market turmoil in the initial months and the liquidity in global markets came under enormous pressure (International Swaps and Derivatives Association, 2020). It is worth noting, however, that despite exceptional circumstances and even in the worst days of the crisis, the markets remained open and continued to function. Besides, after the peak of uncertainty in March, there was the recovery in the markets. By the end of July 2020, most indicators reversed rapidly, reflecting strong confidence in markets and their role in supporting the economy (World Federation of Exchanges, 2021).

Overall, the volume of trading in exchange-traded derivatives increased by 43% in 2020 compared to 2019, reaching a record 46.28 billion contracts (see Figure 1). The increase in volumes concerned all types of derivatives, except for interest rate derivatives (World Federation of Exchanges, 2021).

In the case of the over-the-counter (OTC) derivative market, the available statistics on gross market value can be used to assess the situation. Gross market value is the sum of the absolute values of all outstanding derivative contracts estimated at market prices prevailing at the reporting date. This value in relation to OTC derivatives increased from USD 11.6 trillion to USD 15.5 trillion in the first half of 2020. The largest increase in the gross market value (40%) was recorded by interest rate derivatives (Bank for International Settlements, 2020). This is partly explained by the decline in turnover of this type of derivatives on the exchange market.

As for the Polish market, the significant change that took place in 2020 in the use of exchange-traded derivatives can be observed on the basis of the volume of trading in these instruments (see Figure 2). After the long downward trend which started in 2012, there has been the significant increase. In 2020, compared to the previous year, the volume of trading in the futures contracts increased by over 65%, and in the options by nearly 49%. However, it is difficult

to assess whether this significant change in the exchange market has a chance to become an impulse to initiate another upward trend.

### 3. Analysis of the use of derivatives by Polish non-financial enterprises

P. Oźga (2012) drew attention to the use of derivatives by Polish non-financial enterprises. His research related to the non-financial companies listed on the Warsaw Stock Exchange. The author showed, inter alia, that in 2010 32% of such companies used derivatives. On the basis of the adopted criteria, he also concluded that 52% of these companies used derivatives for hedging, and the remaining part could use them for speculation (Oźga, 2012). In turn, J. Pawłowski (2018) pointed out that the balance value of derivatives held by Polish non-financial enterprises in 2012–2016 increased noticeably.

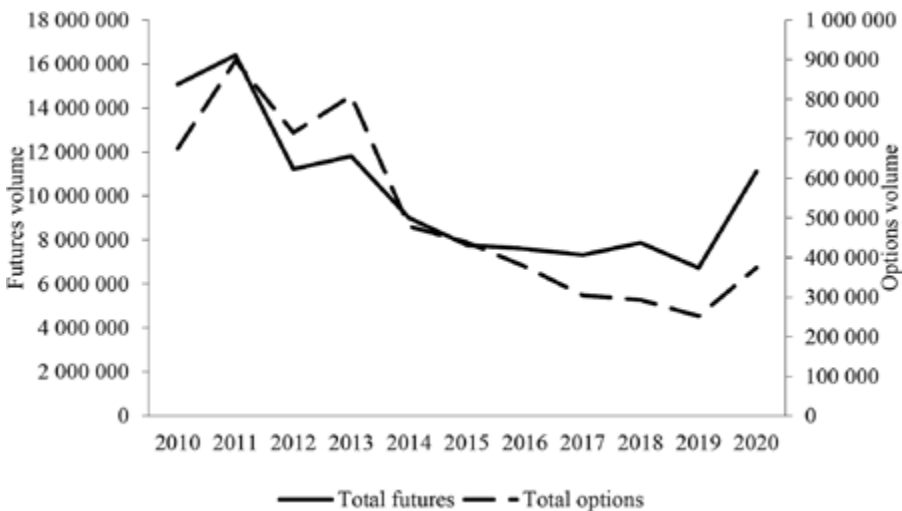


Figure 2: Trading volume of derivatives on the Warsaw Stock Exchange

Source: own study based on (Giełda Papierów Wartościowych w Warszawie, 2011–2021)

In this study, to assess the use of derivatives by Polish non-financial enterprises, data from the Statistics Poland (GUS) for 2010–2020 were used. During this period, the number of enterprises participating in the survey was systematically increasing, from 1292 in 2010 to 2279 in 2020, and was related to the number of enterprises selected for the survey by the GUS. Enterprises were selected for the study, which in at least one of the quarters in a given year in the report “RF-01 Quarterly Statistical Report on Financial Assets and Liabilities” showed the presence of selected financial instruments (derivatives, debt securities, shares in mutual funds, equity instruments). The entities that participated in the

previous edition of the survey and showed the financial instruments examined at that time were also taken into account (Główny Urząd Statystyczny, 2011–2021). Importantly, the survey completeness index, i.e. the number of surveyed enterprises in relation to those selected for the survey, was quite stable throughout the entire period and ranged from 93.6% to 98.5%.

First of all, attention was paid to the number of non-financial enterprises presenting derivatives in their balance sheets, compared to the number of non-financial enterprises presenting financial instruments (see Figure 3). On the basis of Figure 3, the strong increase in the number of enterprises with financial instruments in their assets and liabilities can be observed in 2013. The upward trend in this respect is also clearly visible in the coming years.

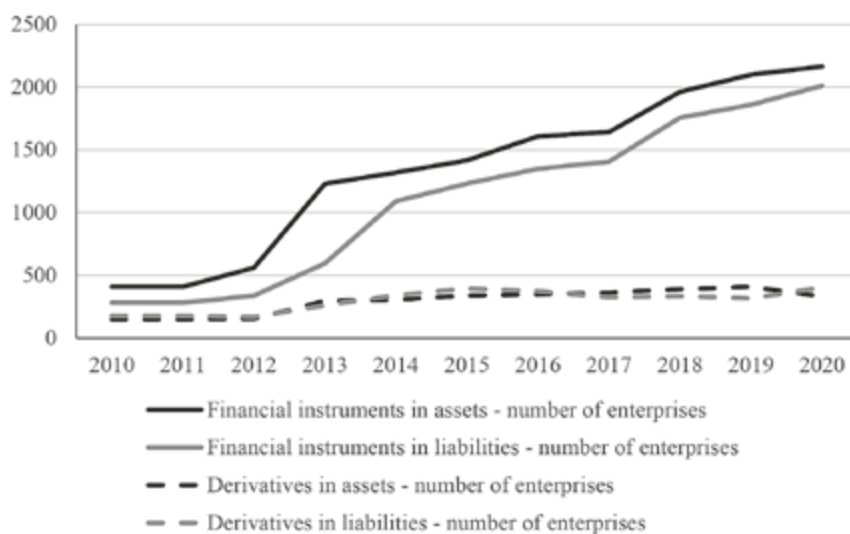


Figure 3: Number of enterprises with financial instruments and derivatives in assets and liabilities

Source: own study based on the GUS data

In 2020, the numbers of enterprises with financial instruments in assets and liabilities reached the levels of approx. 2000, but the number of enterprises with such instruments in assets was higher of approx. 200. In 2013, the increase in the numbers of enterprises showing derivatives in their assets and liabilities can also be noticed. In this case, however, in the following years these numbers were at similar levels of approx. 300–400 enterprises. Therefore, the upward trend in financial instruments did not lead to a similar trend in the case of derivatives.

In this context, it is worth paying attention to Figure 4, which presents the scale of derivative transactions among the non-financial enterprises. On the basis of the available data for the years 2016–2020, the significant increase in the

number of enterprises engaged in derivative transactions can be stated, which in 2020 amounted to 675. The number of transactions of these enterprises, after the increase in 2017, stabilized at the level of just over 200,000. In this case, therefore, only the growing number of enterprises that show derivative transactions can be a positive signal of the use of derivatives.

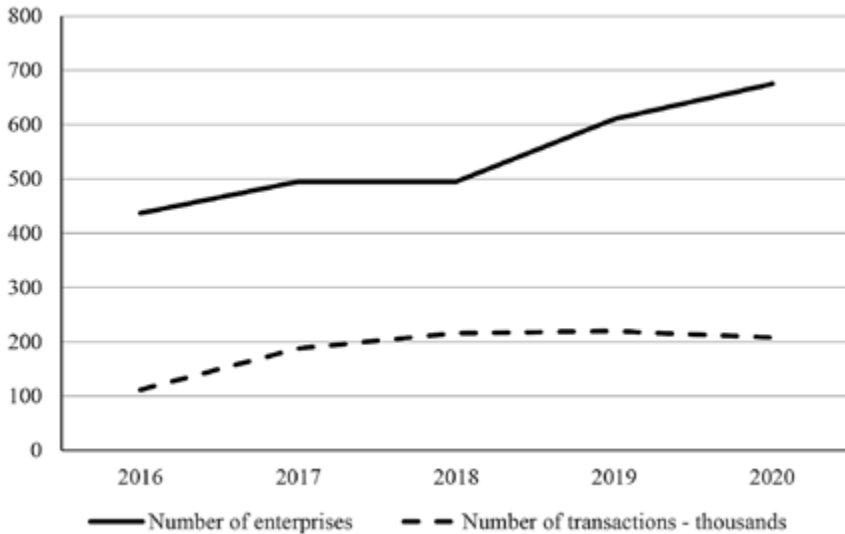


Figure 4: Number of derivative transactions and enterprises

Source: own study based on the GUS data

The next analyzed amounts were the values of derivatives in the assets and liabilities of non-financial enterprises. These data should be treated with some caution, however, due to the changing regulations in the analyzed period regarding the determination of the balance value of derivatives, as well as the “unclear regulations” (Mućko, 2013). The principles of valuation depend on the accounting standards applied in a given entity as well as the purpose of using the instruments and the timing of the measurement (Emerling, 2015). In line with the most commonly used fair value approach a derivative can be a financial asset or a financial liability depending on the direction of the changes in value of the underlying variables. That is, where a cumulative holding gain has been made through an increase in the fair value, the derivative will be a “financial asset”; whereas cumulative losses could result in the derivative becoming a liability.

The values of derivatives in assets and liabilities of non-financial enterprises in 2010–2020 are shown in Figure 5. These values show the clear upward trend – from the levels of derivative values in assets and liabilities in 2010, PLN 2,857.7 million and PLN 5,262.7 million, respectively, to the levels of PLN 9,130.60 million and

PLN 11,951.80 million, respectively, in 2020. In 2016–2019, the value of derivatives in assets exceeded the value of derivatives in liabilities. In 2019, compared to 2010, the values of derivatives in assets and liabilities increased by 271% and 80%, respectively. In 2020, however, as shown in Figure 5, the value of derivatives in assets decreased, while in liabilities it increased and became higher than the value of derivatives in assets. On this basis, it can be concluded that the year of the pandemic was not a good year for non-financial enterprises involved in the derivatives market.

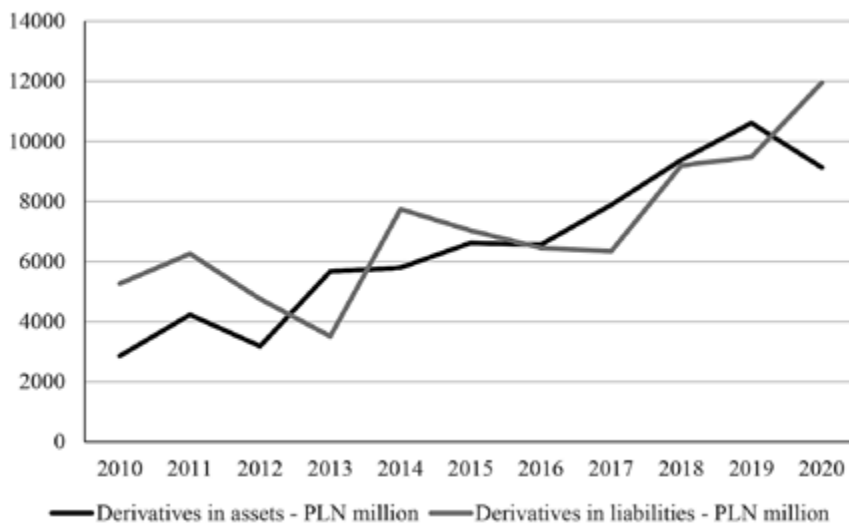


Figure 5: Derivatives value in assets and liabilities

Source: own study based on the GUS data

Figures 6–7 present changes in the structure of the value of derivatives in assets and liabilities of the surveyed enterprises. In the case of derivative instruments in assets, the forward contracts showed the generally high share – in 2013–2020 this share was over 50%, the futures contracts only showed significant shares in recent years – the highest share of 16% in 2020, the options – in 2010–2011 the share over 50%, then the decrease in the share and in 2020 13%, the swaps – significant shares in the previous years, in 2013–2015 over 20% of the share, while in 2019 and 2020 only, respectively 5% and 7%.

Generally, in 2020 we can observe the strong decline in the value of forward contracts in assets and the significant increase in the value of futures and options. In the case of derivatives in liabilities, the forward contracts showed great importance, as in assets – over 50% share since 2015, the futures contracts – only in recent years showed significant shares of approx. 10%, the options – in 2010 and 2011 respectively 40% and 17% shares, less than 10% in 2012–2019 and

only 14% in 2020, the swaps – showed the highest shares of 40–50% in 2010–2015, while in recent years around 10%. Generally, in 2020 we can observe the significant increase in the value of options and swaps in liabilities, and the slight decrease in the value of forward contracts.

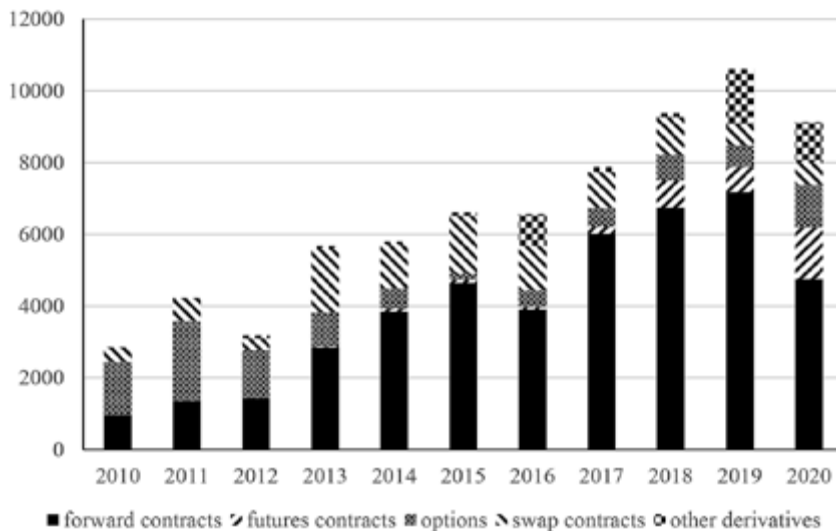


Figure 6: Structure of derivatives value in assets

Source: own study based on the GUS data

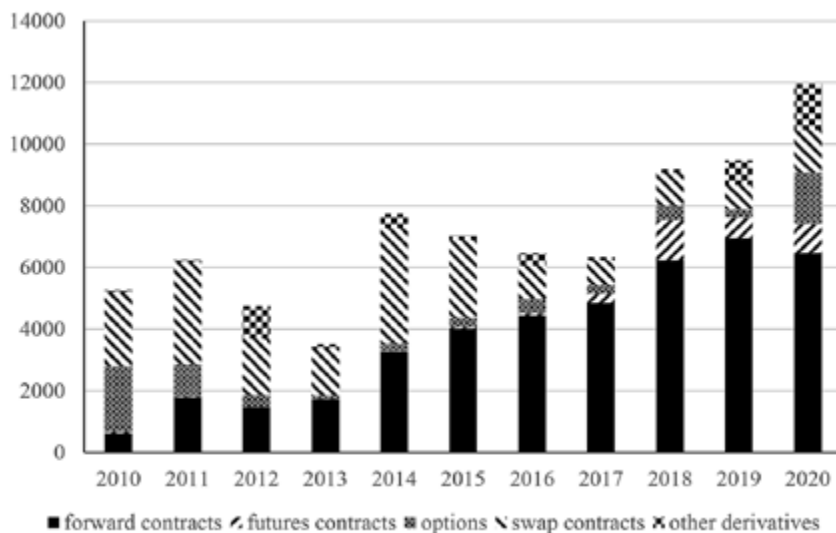


Figure 7: Structure of derivatives value in liabilities

Source: own study based on the GUS data

## 4. Conclusion

When analyzing the use of derivatives by Polish non-financial enterprises, it is difficult to make an unequivocal assessment. On the one hand, the increase in the number of enterprises with financial instruments on their balance sheets shows that enterprises are interested in these basic instruments, but this interest does not translate into interest in derivatives. The question arises here whether this is due to the lack of appropriate knowledge and skills in the field of derivatives or other conditions. The slight increase in the number of enterprises concluding derivative transactions may be the basis for moderate optimism, but on the other hand, the number of derivative transactions remains at the similar level.

The rising values of derivatives in assets and liabilities generally indicate an increase in the involvement of derivatives in the activities of these enterprises. In 2020, however, the significant increase in the value of liabilities and the decrease in the value of assets was observed, which indicates a reduction in the benefits of having derivatives and an increase in losses that increase liabilities of the enterprises.

In the context of the development of the derivative markets, it should be noted that the strong increase in derivatives trading on the global market, as well as on the Polish market in 2020, resulting from the increase in the use of derivatives by all market participants, did not mean a similar increase in the use of derivatives among Polish non-financial enterprises. The reasons for this state of affairs are certainly an interesting area of further research in this field. These studies should cover the conditions and factors on the demand and supply sides. On the demand side, it would be important to identify the motives for the use of derivatives and the needs of non-financial enterprises in this regard, as well as to establish the level of necessary knowledge and skills allowing for the effective use of derivatives, especially in risk hedging. The second direction of research should be the supply side of the market, especially the availability of certain derivatives and the safety of trading, in particular on the over-the-counter market.

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# ASSUMPTIONS FOR THE ESTIMATION OF THE BETA COEFFICIENT LEVEL AND COMPANY'S COST OF EQUITY

## 1. Introduction

The cost of capital is inseparably connected with the company's necessity to gain sources of financing for its current and developmental activity. Since the cost of capital has a direct impact on the profitability of the firm and thus on its development potential, the key issue is optimal cost management related to the use of various sources of financing. In the analytical environment it is often pointed out that the cost of equity account is more subjective than the cost of debt account, which results from the fact that the cost of equity is a financial category, while the cost of debt is an accounting category. Depending on the source of a given capital, as well as the way in which it is obtained, different methods of its estimation are used and specific variables in a given accounting formula are adjusted. The aim of this chapter is to examine the impact of the modification of assumptions in the estimation of the beta coefficient, which is one of the most commonly used parameters for assessing the degree of investment risk, used for the purpose of calculating the cost of equity account derived from ordinary shares of a company. For this purpose, different frequencies of measuring the rates of return were used (weekly and monthly), as well as different periods of data estimation (one year, three years, five years). Two construction companies, similar in terms of operational risk understood as the nature of the conducted business activities and listed on the Warsaw Stock Exchange for at least 20 years, were classified for the study.

## 2. The cost of equity and polemical issues related to its estimation

The cost of capital is most often defined in the literature as the minimum rate of return acceptable to a given investor on the capital resources involved in the assets of a given company. The size of the benefits expected by investors is determined by the level of the rates of return possible to achieve from alternative investments available on the market with a similar level of risk. In the practice of corporate financial management, the cost of capital account finds its application in the following areas:

- estimating the company's value using income methods, which requires, among other things, determining the discount rate, which updates the value of cash flows possible to achieve from the company's assets,
- determination of a limit (threshold) rate of return on new investment projects, so that they do not adversely affect the value of the company,
- estimation of the rate of capital payment for the purpose of the analysis and assessment of the effectiveness of the company's value creation using, among others, such measures as the Economic Value Added – EVA, Cash Value Added – CVA, Shareholder Value Added – SVA (Szczepankowski, 2015)

In the scientific and analytical environment there is a clear view that estimating the cost rate of equity, as opposed to the cost of debt, is more difficult. This results from the fact that the evaluation of the rate of return required by creditors is usually associated with the need to know the conditions under which the debt capital was obtained (bank loan, issuance of debt securities, etc.), while the cost of debt itself is materialised in the income statement in the form of interest payable on liabilities (Cwynar & Cwynar, 2007). On the other hand, the estimation of the company's cost of equity is burdened with greater subjectivity, due to the non-evidentiary nature of this parameter, as the cost of equity is determined by the market, so it does not depend on the preferences of a single investor, but on the entire environment of investors on the market. Difficulties in objective estimation of the cost of equity are also increased by the fact that in the specialist literature there are relatively many methods of its determination, which often provide different information on the level of this economic parameter. Despite countless scientific and research deliberations, it has not been resolved which of the available methods of estimating the cost of equity is the most effective and should be recommended in economic practice. In fact, there are two extreme approaches in determining the cost of equity (Duliniec, 2011):

- determining the cost of equity based on arbitrary and subjective evaluation made by an investor (owner) what rate of return he expects on the investment in the equity of a given business with a given risk,

- the assessment of the cost of equity may be carried out by an independent financial analyst using theoretical models and market information characterising the relationship between the rate of return and the risk of investing on a given capital market.

### **3. The beta coefficient as a parameter in the cost of equity account of a company**

One of the most common methods of estimating the cost rate of capital derived from the issuance of ordinary shares is the capital asset pricing model (CAPM), which in the literature is also known as an equilibrium model of the capital market. According to the fundamental assumptions of this model, the cost rate of equity is estimated based on the following formula:

$$k_E = r_F + \beta \cdot MRP$$

where:

- $k_E$  – cost rate of equity,
- $r_F$  – risk-free rate of return,
- $\beta$  – systematic risk coefficient for the company,
- $MRP$  – market risk premium.

The risk-free rate of return in analytical practice is most often determined as the profitability of treasury financial assets. The market risk premium (MRP) is an additional remuneration for the investor for the engagement of capital in the assets of a company operating on a given market. The professional literature points out that the size of MRP is determined by three key factors, i.e. the dynamics and stability of the economic growth of a given market, the level of the maturity and political stability of a given market and the share of large, mature and diversified companies on a given market (Damodaran, 1994). The third and final parameter of the CAPM model is the coefficient of the systematic risk level of a given company, also referred to as the risk index or the beta coefficient ( $\beta$ ). The beta coefficient determines the risk of investing in the assets of a given company, as it measures the volatility of the rates of return on shares of a given company in relation to the volatility of returns on the market portfolio (stock index). In practice, the level of the beta parameter is determined using the following formula:

$$\beta = \frac{\text{cov}(r_{it}, r_{mt})}{\text{var}(r_{mt})}$$

where:

- $\text{cov}(r_{it}, r_{mt})$  – covariance between the rate of return on the company shares and the rate of return on the market portfolio,  
 $\text{var}(r_{mt})$  – variance of the rate of return on the market portfolio.

The higher the level of financial and operational risk of a given company, the higher the level of the beta coefficient. Based on the level of the beta coefficient, investors who want to allocate capital on the stock market can adopt two investment strategies depending on their appetite for risk:

- aggressive – when the level of  $\beta > 1$ , then investment in the equity of a given company is subject to greater investment risk due to greater dynamics of the volatility of the rates of return on the shares of a given entity, which, however, can be translated into potentially greater profits,
- defensive – when the level of  $\beta < 1$ , then the allocation of capital in the assets of a given company is distinguished by lower risk, because the rate of return on shares changes more slowly than the rates of return on the market portfolio, which also translates into a lower potential rate of return on investment.

The calculation of the beta coefficient involves several, as yet unsolved, dilemmas which have a direct impact on the size of this economic parameter. The first of them is the choice of the estimation period of an appropriate length, while the second one boils down to the selection of an appropriate time interval for the rates of return on company shares. As for the dilemmas posed in this way, it should be noted that in the professional literature it is most often emphasised that estimation samples should be within the range of 2 to 5 years, while the final length of this period should depend on the dynamics of development on which the company operates (a mature or emerging market), as well as other partial factors influencing the level of risk of investing in a given company, such as restructuring of its capital structure. On the other hand, with regard to the question of the frequency of measuring rate of return, daily, weekly or monthly data are most commonly used. In this respect, the choice of the interval should depend on the length of the adopted estimation period. Researchers also often point out that the greatest difficulties in estimating the cost of equity occur in emerging markets, including, among others, selected countries in Central and Eastern Europe, South America and South Asia. Poland is also one of such countries. The following problems are most frequently indicated (Byrka-Kita, 2018):

- differences in reporting standards,
- insufficient information flow and limited access to data,
- higher investment risk on emerging markets,
- lack of well developed capital markets and institutions related to them.

#### 4. Methodological assumptions and the scope of research

The main objective of this study is to verify whether and to what extent different approaches to the interval of measuring rates of return and the length of the estimation period affect the level of the beta coefficient and the cost rate of equity of the studied companies. In order to estimate the value of the beta coefficient we used different frequencies of measuring the rates of return for the shares of the studied companies (weekly and monthly), as well as different lengths of the interval for estimating the rates of return (1 year, 3 years, 5 years). In order to maintain relative homogeneity of the studied companies in terms of operational risk, it was decided to classify two companies representing the construction sector (Section F – Construction), listed on the Main Market of the Warsaw Stock Exchange, to the research sample. The studied companies are part of the WIG-Construction index. The main determinant of the selection of the companies was the Polish Classification of Activities of 2007. The characteristics of the studied companies is presented in Table 1.

Table 1. The characteristics of the studied companies

No.	Full name of the company	Shortened name of the company	Date of debut on the stock market	Polish Classification of Activities 2007 (main areas of activity)
1	Instal Kraków S.A.	INSTALKRK	April 1999	Construction works related to erecting residential and non-residential buildings (41.20)
2	Mostostal Warszawa S.A.	MOSTALWAR	October 1993	

Source: own study.

The levels of the beta coefficient were estimated on the basis of historical data of the studied listed companies. The values of the WIG stock exchange index were assumed as the rate of return from the market portfolio. The calculations of the beta coefficient were performed in a Microsoft Excel spreadsheet using the REGLINP function. For the purpose of calculating the cost of equity and thus the need to assume a risk-free rate of return, the average rate of return on government bonds in 2020 was determined, based on the geometric mean, at the level of **1.49%**. In order to determine the market risk premium (MRP), ready-made calculations by A. Damodaran were used, the methodology of which is described in more detail in one of the literature positions of the quoted author

(Damodaran, 2007). The development of the level of the market risk premium for the Polish economy in the years 2016–2020 is presented in Figure 2, while for the needs of the cost of equity capital account the level of the MRP parameter for 2020 was used – 5.54%.

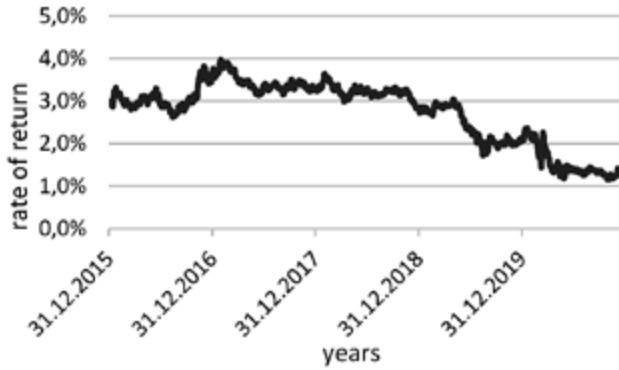


Figure 1: Profitability of 10-year treasury bonds of the Polish government in the years 2016–2020

Source: <https://pl.investing.com/rates-bonds/poland-10-year-bond-yield-historical-data> (12 November 2021).

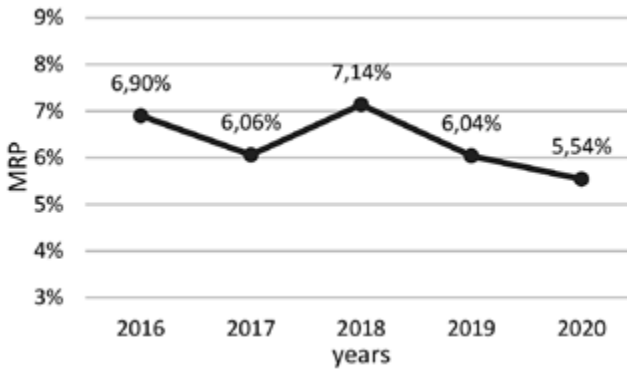


Figure 2: The risk premium level of the Polish market in the years 2016–2020

Source: <https://pages.stern.nyu.edu/~adamodar/> (12 November 2021).

## 5. Assumptions for the estimation of the beta coefficient versus the cost of equity of the studied companies – research findings

Tables 2 and 3 present the values of the beta coefficient of the studied companies estimated for weekly and monthly rates of return for three variants of the adopted estimation period. The level of the systematic risk parameters was estimated based on the closing rates of listed companies depending on

the adopted length of the estimation period for the one-year horizon (2020), three-year horizon (2018–2020) and the five-year horizon (2016–2020). Table 3 presents the estimated levels of the cost rates of equity of the companies in 2020 for different assumptions of the beta coefficient estimation.

Table 2: The beta coefficient levels for MOSTALWAR in 2020 for three variants of length of the adopted estimation period

Time interval of the rates of return	1 year	3 years	5 years
weekly	1.079	1.105	1.002
monthly	1.198	0.904	0.761

Source: own calculations.

Table 3: The beta coefficient levels for INSTALKRK in 2020 for three variants of length of the adopted estimation period

Time interval of the rates of return	1 year	3 years	5 years
weekly	0.662	0.570	0.506
monthly	0.677	0.692	0.555

Source: own calculations.

On the basis of the data presented in Tables 2 and 3 it should be stated that the estimated levels of beta coefficients showed relatively moderate variation depending on the adopted method of calculating the rates of returns and the length of the estimation period. The greatest difference in the level of the beta coefficient was observed for MOSTALWAR for the monthly variant of estimating the rates of returns, depending on the length of the adopted estimation period – the difference exceeding 0.4 points (beta for the one-year estimation period = 1.198, while beta for the five-year estimation period = 0.761). A special disproportion in the obtained results is noticeable in the case of MOSTALWAR for monthly rates of return, because on the basis of the beta coefficient level it is impossible to unambiguously classify the studied company to the group of the so-called “aggressive” or “defensive” entities. For the adopted one year of estimation, the level of the beta coefficient for the aforementioned company amounts to 1.198, which means that MOSTALWAR’s share prices change faster than prices of all shares on the given market. Such a level of the beta coefficient justifies classifying a given company to the group of “aggressive” entities, in the case of which capital allocation is burdened with greater investment risk, because a decrease in the WIG index by 1% statistically caused a decrease in MOSTALWAR’s shares by almost 1.2%. On the other hand, for the adopted three-year and five-year

estimation periods and monthly rates of return, the level of the beta coefficient for MOSTALWAR was at the level of 0.904 and 0.761, respectively. At the same time this means the opposite situation to the one described previously, in which the share prices of the studied company change more slowly than all the share prices on the Polish stock market. Such levels of the beta coefficient allow at the same time to classify MOSTALWAR to the group of “defensive” entities, characterised by lower investment risk but also by lower potential benefits.

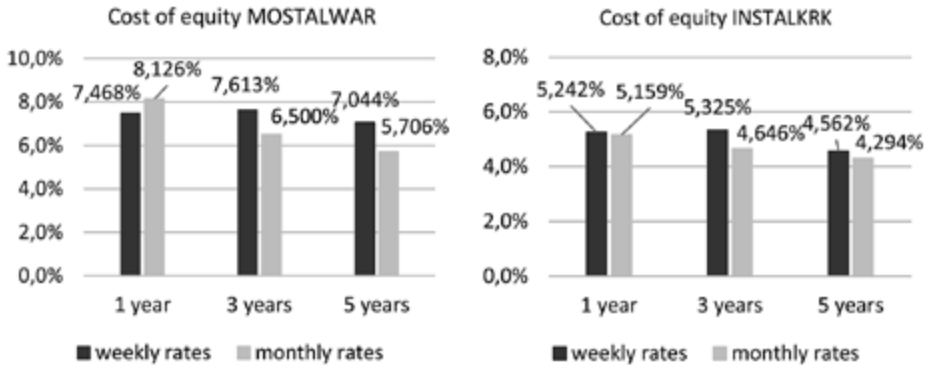


Figure 3: Rates of the cost of equity of the studied companies in 2020 for weekly and monthly rates of return and three variants of the estimation period

Source: own study.

Based on the data included in Figure 3 it should be stated that the highest level of the cost of capital related to the issuance of ordinary shares, determined based on the CAPM model is possessed by MOSTALWAR, with the assumed beta coefficient estimated on the basis of monthly rates of return and the one-year estimation period – 8.126%. On the other hand, the lowest level of the cost of equity was observed in INSTALKRKK, determined based on the assumption of monthly rates of return and the 5-year estimation period – 4.294%. The greatest difference in the estimated rates of the cost of equity, with reference to the adopted rates of return, was observed in the case of MOSTALWAR for the 5-year estimation period for weekly (7.044%) and monthly (5.706%) rates of return – the difference of 1.337 percentage points. With regard to the adopted length of the estimation period the greatest difference in the estimated levels of the cost of capital was again observed in MOSTALWAR, between the one-year and the five-year estimation period – the difference at the level of 2.419 percentage points.



## 6. Conclusion

The conducted research proved that the modification of the assumptions for the needs of the estimation of the beta coefficient influences the level of the estimated parameter of systematic risk, and then on the level of the estimated cost of equity determined based on the CAPM model, most often used in the economic practice. As it has been signalled before, the assumptions for the estimation of the beta coefficient, at the same time being one of the basic components of the CAPM model, may include both the frequency of the calculation of the rates of return (interval) from the action of the studied company (daily, weekly, monthly, etc.), as well as the length of the estimation period counted in years. In the empirical part it was proven that the adoption of different assumptions for the purpose of the beta parameter account resulted in deviations reaching as much as over 2.2 percentage points of the level of the cost of equity of the studied construction companies. Such a difference in the obtained results should encourage a broader discussion, both among representatives of the academic and business environment, on an attempt to systematise and standardise the principles of estimating the cost of equity, which should translate into rationalising the decision-making process aimed at achieving both the operational and strategic objectives of the company, including the long-term financial objective, which is to build a permanent and sustainable company value.

This study can also be treated as a contribution to further, multidirectional research on the impact of modifications of the beta coefficient estimation assumptions, constituting a determinant of the risk of investing in equity securities of a given company. In this context, it seems justified to conduct comprehensive research on the impact of the beta coefficient estimation assumptions on the level of capital cost, covering not only individual listed companies, but also groups of entities representing individual sectors of activity (sector indices) and comparing the obtained results with foreign markets with a comparable degree of development.

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**Part V**

**RESTRUCTURING**

**IN THE FACE OF CONTEMPORARY CHALLENGES**



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# REORCHESTRATION OF MANAGEMENT SYSTEMS FOR SMART ENTERPRISES

## 1. Introduction

A management and leadership systems had an evolutive development in last two centuries. In era of digital economy with development of the concept of Industry 4.0 the existing management systems are not sufficient for achieving smart goals, such as smart sustainable success. In order to achieve new goals it is necessary to re-orchestrate “old” management and leadership practice and to further develop, improve and integrate them for achieving smart sustainability.

Each new Management and Leadership System (MLS) has its own structure goal architecture. Ways for using business resources and collaboration with other MLSs are large problem due to higher complexity and lack of specific knowledge related to “*Classical*” management and leadership theory (Hitt M., Ireland, Hockinsson, 2011; Schermrhorn, 1996; Drucke, 1986; Daft, 2010; Robbins, Coulter, 2012).

Recently new concept of leadership is incorporated, so now we have integrated MLS concepts, with emphasized role of leadership. It is especially dominant in the era of rapid changing (Kotler, Caslione, 2009), as well as emerging process of digitalization and introduction of smart and intelligent technologies (Stanford University, 2016; Pregalinska, 2019; Bordelean, Mosconi, De Sante-Eulalia, 2018; Schaeper, Koch, Merkofer, 2015). In this turbulent era the new concept titled chaotic is developed (Kotler, Caslione, 2009). One of frequently emphasized concept for resolving problems in digital era is leadership. It started from leadership theory (Yukl, 2010; Kozlow, 2014; Corbett, 2021).

These “classical” leadership concepts are base for new concepts as complexity leadership theory, incorporation of knowledge and transformational

leaderships, quantum, quality leadership. In era of Industry 4.0 dominant role has so called smart leadership.

In this process of changing paradigms and in MLS concepts emotional intelligence also has an important relative (Lewis M., Haviland-Jones, Barrett., 2008; Benet-Goleman, 2001; Holmes, 2010; Holman et al. 2007), as well as spiritual development of enterprise management systems, value management, innovation management, technology management, quality management, process management, project driven enterprise management, smart resilience management, social innovation management, smart infrastructure management, smart strategy, risk management, sustainability management, new (smart) business models, etc.

In these circumstances among “old” and “new” MLS approaches, emerging concepts have to collaborate covering dynamically changing, and pressure of changes in order to satisfy new request of key stakeholders. It needs reorchestration of MLS.

In era of Industry 4.0 the existing management system are not sufficient and is necessary to include a new management systems connected with “old” management systems. An introduction of smart technologies changes in internal and external approaches are necessary for effective and sustainable success.

Purpose of the article is to promote urgent need for changing the management systems in enterprises. It is necessary to reorchestrate old and new management systems for applying them in smart enterprises. This is a main goal of this article. Original methodology is developed which includes a number of approaches and methods for selecting optimal management systems for each smart enterprise.

Results of the research are theoretical (new methodology) and practical for implementation in public parking enterprises. The first results of research pointed out that leadership, quality and risk management are crucial for process reorchestration of management systems.

The article is composed from five sections. After introduction (section one) in section two is literature review. Resented methodology of given literature reorchestration of MLSs is presented in section three and implementation in Serbian Public Parking Enterprises is presented in section four. In the fifth section conclusions related to theoretically and practically result are presented.

## **2. Literature review**

The idea about reorchestration is based on 3R concept of reengineering but now developed on MLSs and new methodology for fast development, adaption and synchronization of “old” and “new” MLS in smart enterprises. For realization of this very complex approach authors used own knowledge and literature

review related to different MLSs, analytical methods, simulation methods, quality methods, etc.

List of potential MLSs is very wide. For purpose of using MLSs in the smart enterprises it is necessary to analysis management system related to: (1) quality, (2) value, (3) project, (4) process, (5) technology, (6) innovation, (7) smart strategy, (8) social innovation, (9) smart resilience, (10) smart leadership and management, (11) smart infrastructure, (12) smart government, (13) complexity, (14) knowledge, (15) resilience, (16) business models, (17) organizational design, (18) Supply Chain, (19) Lean, (20) sustainability, and other specific purposes for each enterprise. These MLSs are analyzed in the research.

A quality management and leadership concepts developed in previous 50 years were based on works of Deming E., Juran J., Feigenbaum A., and other scientists and researches such as Oukland, Green, and other. In their works a quality management and leadership is viewed as system for achieving quality goals as assumption for satisfying customer needs and requests. These system further evolved in two ways: (1) applicative, through standards in ISO 9001, 9004, sectors standards etc., and (2) new approaches as integrated management system with including also environmental protection, work safety, food safety, service management, social responsibility, economics of quality, supply chain, telecommunication services, etc. (Radzwill, 2018; Demertini, Tonelli, 2019; Yussupova. et al., 2016).

For effective usage og quality management and leadership, number of approaches methods, techniques and tools are developed (Ehand, Ramachandran, 2018; Li, Merenda, Venkatachalan, 2009; Bordelan, Mosconi, De Sante-Eulalia, 2018; Hwang, Lee, Zhu (Eds), 2016; Ramanathan, 2003). All of them were base for development of a new science – Quality Science (Arsovski, 2017). In broader thinking quality includes also quality of life aspect, empathy, emotions, spirituality etc. (ISO 37120, 2014; Gladden, 2019).

Value management systems are based on concept of value for enterprise and other key stakeholders (Blanshard K., Oconnor M., 1996; Cohen B., Varwick M., 2006; Martin N. et al, 2020). It consists from processes, which generated values and management (strategic, tactical, and operative). Value as goal has own structure (monetary, social, environmental, life satisfaction, etc).

Project management has greater impact in era of fast changing of business environment. Depends on type of the project (product, technology, organization, knowledge) and amount of investment are used micro, macro and mega projects (ISO 1006, sectoral standards). In project management standards, with including risks and different vulnerabilities, and methods for risks assessment, as SWOT, PESTEL and others, were used..

Technology management started in period before 50 years and was oriented on technology as base for enterprise infrastructure improvement. Today, it is more sophisticated and emphasized on smart and intelligent solutions for design, introduction, monitoring, decision support, and improvement techniques.

Smart strategy is relative new approach dedicated to smart enterprise management and leadership. It is smart because consists from modules for development, deciding, deployment, goal monitoring, and improvement (Ulman, 2014; Dias et al., 2017; Dule, Minevich., 2018).

Social innovation management is relative new concept. It is based on social responsibility of enterprise regarding environment protection, employment, empathy, increasing salaries and living conditions, as quality of life of key stakeholders (Schroeder, Krueger, 2019; Mulgan et al., 2006; Light, 2006).

Smart resilience is a broader concept of resilience with added elements of smart technologies in the area of assessment of existing level of resilience, adaptive capacity, management of key vulnerabilities, monitoring and corrective action for resilience improvement (Abousahl et al., 2014; Foster, 2006; Markus et al., 2013).

Smart leadership and management are emerging new concept.

Herder-Wynne F., Amato R. and Uit de Weerd F. (2017) defined concept of Leadership 4.0 with a review of the thinking. In this report they cited view of Brian Bacon, Chairmen and Founder of Oxford Leadership, "Leadership in the 4th Industrial Revolution" will be defined by ability to rapidly align and engage empowered, networked teams with clarity of purpose and fierce resolve to win". Also, P. Hawkins suggested that new type of leaders need three types of transitions:

- from „leading my peoples" to „orchestrating business ecosystems",
- from „heroic to collective and collaborative" leadership, and
- towards mutual purpose and value driven leadership that creates value for all stakeholders.

In the new business environment it is necessary to radically change business strategy, based on new vision and policy. One of the approaches is the leadership in collaborative network with using the new concepts of leadership and leadership practice related to: (1) knowledge, (2) mission, (3) vision, (4) talent, (5) skills, (6) values, (7) decisions, and (8) results of effective leadership process.

Waldman D., Javidan M. and Varella P. (2004) analyzed concept of charismatic leadership at strategic level with model which includes: (1) strategic change, (2) CEO charisma, (3) perceived environmental uncertainty and their impact on (4) form performance. They emphasized role of charismatic leadership.

In the new era leadership is more connect to knowledge (Lord, Shondrick, 2011) needed for shared or collective leadership and leader intelligence. They



analyzed relation between transformational leadership and knowledge sharing, on group and individual level. Using statistical analysis of following variables: (1) group-focused leadership, (2) individual focused leadership, (3) affiliation climate, (4) innovativeness climate, (5) fairness climate, (6) leader member exciting, and (7) knowledge sharing whole organization, they verified base model.

Developed complexity leadership theory based on a new leadership approach is focused more on an emergent event rather than a person. Analyzed network leadership and defined constructs of network leadership are: (1) shared leadership, (2) distributed leadership, (3) complexity leadership, (4) democratic leadership, (5) intergroup leadership, (6) collaborative leadership, (7) collective leadership, (8) participative leadership and (9) network leadership theory in 4C model (coach, consultant, connector, and catalyst) and space of network leadership related to leadership outcomes.

Smart infrastructure management is new concept related to introduction of smart technologies in internal and external infrastructure, using ICT, robotics, artificial intelligence and other smart solution. Key elements for connection internal and external resources are IoT (Internet of Things), and adequate platforms based on contemporary ICT (Conway, 2015; Bhargava, Aggarwal, Sharna, 2019; Cinffoletti, 2018; Lee et al., 2020).

Smart government management systems are needed for supporting government to smart enterprises and vice versa (Kearney, 2017; Yu, 2017; Dugdale, Negre, Turoff, 2019). Key aspect of this relationship is contribution of smart enterprises for local, regional and state government goals.

Complexity management systems are directed to measure, assessment, build robust complexity management system with effective control of complexity in case of including now MLSs and smart technologies (Burke, Fournier, Prasad, 2006; Shubik, 1998; Scheffran, 2008).

Knowledge management (KM) systems in digital economy have higher impact on achieving the goals of smart enterprises. Knowledge is crucial resources for it, as existing and tacit knowledge with integrating spirituality and theory of consciousness fields for development and receiving a new knowledge (Ramirez, et al., 2011; Norman, 2004; Baron, 2008; Foss, Michailara, 2009).

Resilience management systems are now in era of natural, financial, ecological and other catastrophes increasingly important. Besides literature and practices it is covered with standards. Organizational design is part of smart enterprise management emphasizing new roles, new structures, new goals, news knowledge and skills, motivations and talents. Supply Chain Management now interact with smart enterprises in smart infrastructure, smart government, with smart strategy. Lean Management Systems now is evolved in Smart Sustainability Management Systems, with higher role of Smart technologies, Smart leadership,

Smart strategy, Smart infrastructure and other (Fayet, Vermeulen, 2014; ISO, 2017; ISO 2015).

These twenty MLSs are dominant for our research. Each of the potential MLS has own structure, goal hierarchy, weights of goal, and effects on smart sustainability or smart sustainable success, as goal function of smart enterprise.

### **3. Methodology of reorchestration of MLSs**

Methodology of reorchestration of MLSs is generally developed for smart enterprises (Figure 1).

It is divided into seven steps. In the first step is defining existing and new MLSs. Inputs on this step are: (1) own knowledge related to existing MLS assess using appropriate questionnaires, (2) knowledge from literature review regarding existing and new MLSs. Both inputs have to be explained, assessed, and find possibilities for improvement with synergy approach. Output from this step is matrix MLSs/Goals (Table 1).

In the second step goals of MLSs are defined, and in the third step weight of cash element of Matrix MLSs/Gs are defined.

Performed analysis of possibility for development and introduction of MLSs is placed in step four. Inputs are: (1) List of priorities, (2) Analytical methods as statistical, AHP, Fuzzy AHP, DEA, ANN and other, and (3) tools and methods.

Output is decision for development and introduction of priorities MLSs based on rank from Table 1 and Figure 2.

In fifth step simulation of Effects of New and Old MLSs is performed.

Inputs are: (1) Prioritized MLSs, (2) Own knowledge, (3) New MLS from closed loop, (4) Simulation methods based on model of smart enterprise and model of goal simulation. Outputs are effect of new MLSs on goal function (dominantly smart sustainability).

In step sixth integration of the old and new MLSs is performed.

Inputs are: (1) Effects of new MLSs, (2) Eventually new MLS from closed loops and outputs. Output in this step is Integration model for reorchestration of MLSs.

In final step (7th) is performed introduction and monitoring of Goal Achievement of MLSs after reorchestration. It is presented in Figure 3 for one form in last 124 months.

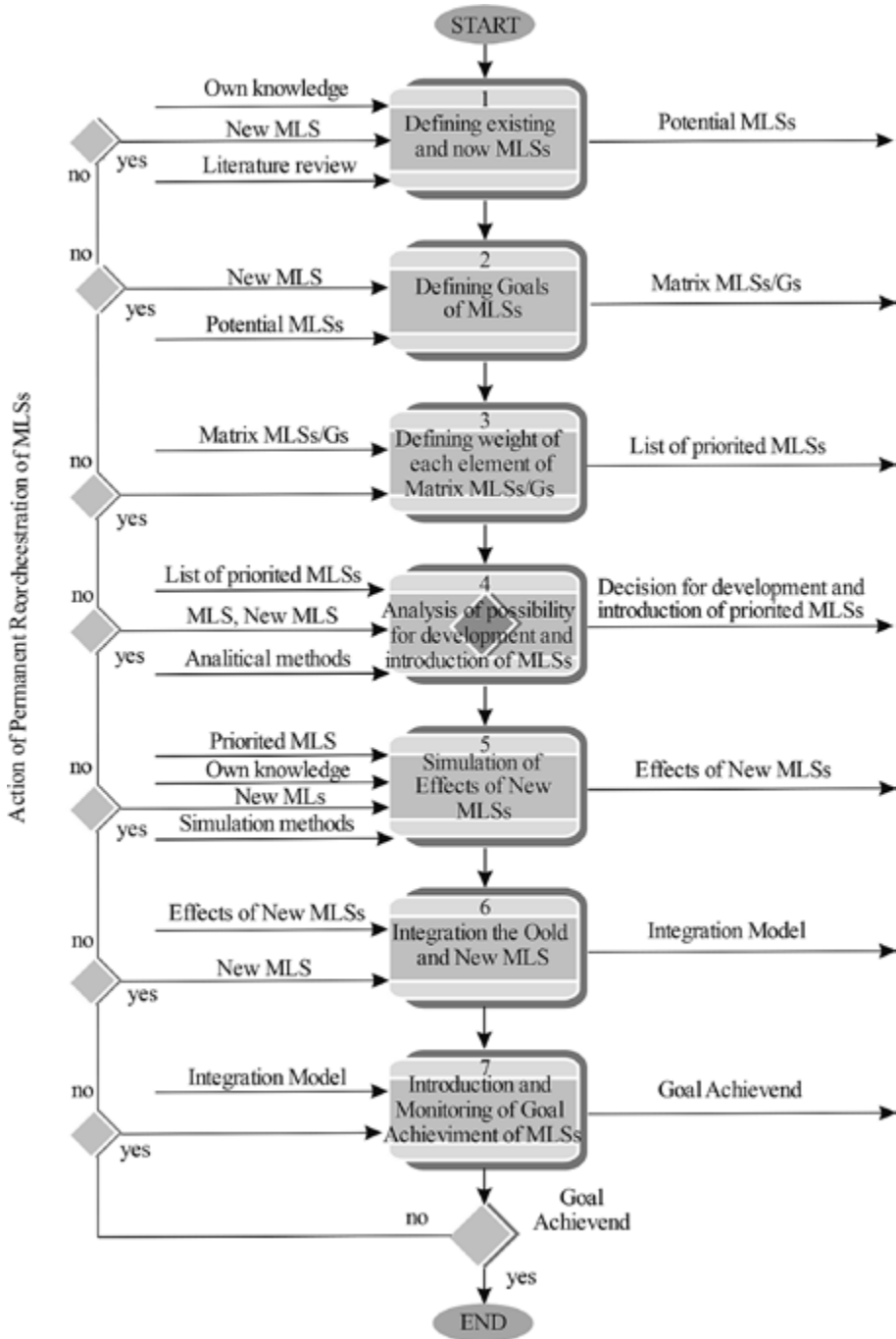


Figure 1: Methodology of reorchestration of MLSs

Source: Own research

Table 1: Matrix MLSs/Gs

Value of Gs	MLSs																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1																				
2																				
3																				
4																				
5																				
67																				
Wi																				
GxWi																				
Rank																				

Source: Own research

In third step management team define weight of each element of Matrix MLSs/Gs. It is also presented in Table 1 and Figure 2, as well as Pareto analysis of MLSs (Figure 2).

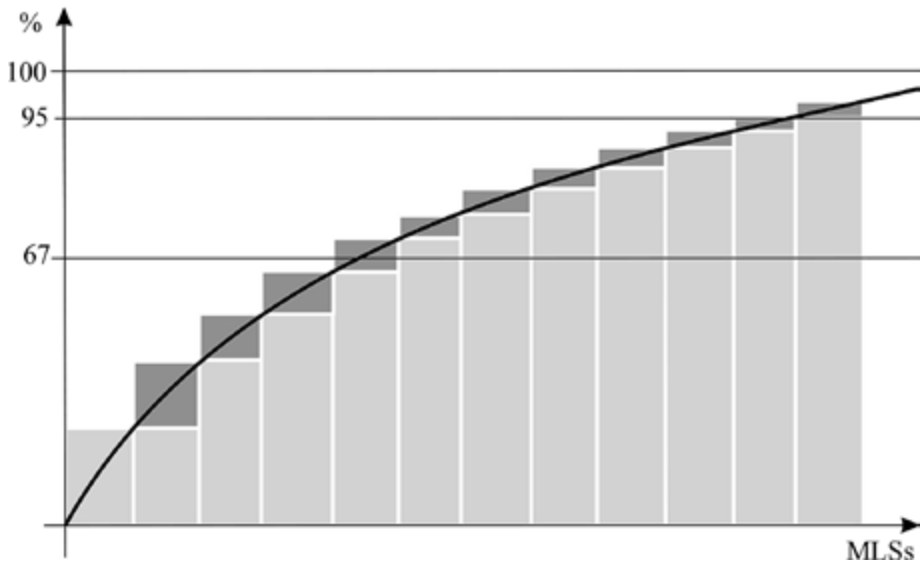


Figure 2: Pareto analysis of significance of MLSs

Source: Own research

Dynamic view of reorchestration of different MLSs is presented in Figure 3. If we analyse Figure 3 it is clear that some goals of MLSs are better introducing smart technologies, especially for MLSs number 6, 8, 10, 13, 14, 15, 16 and 17.

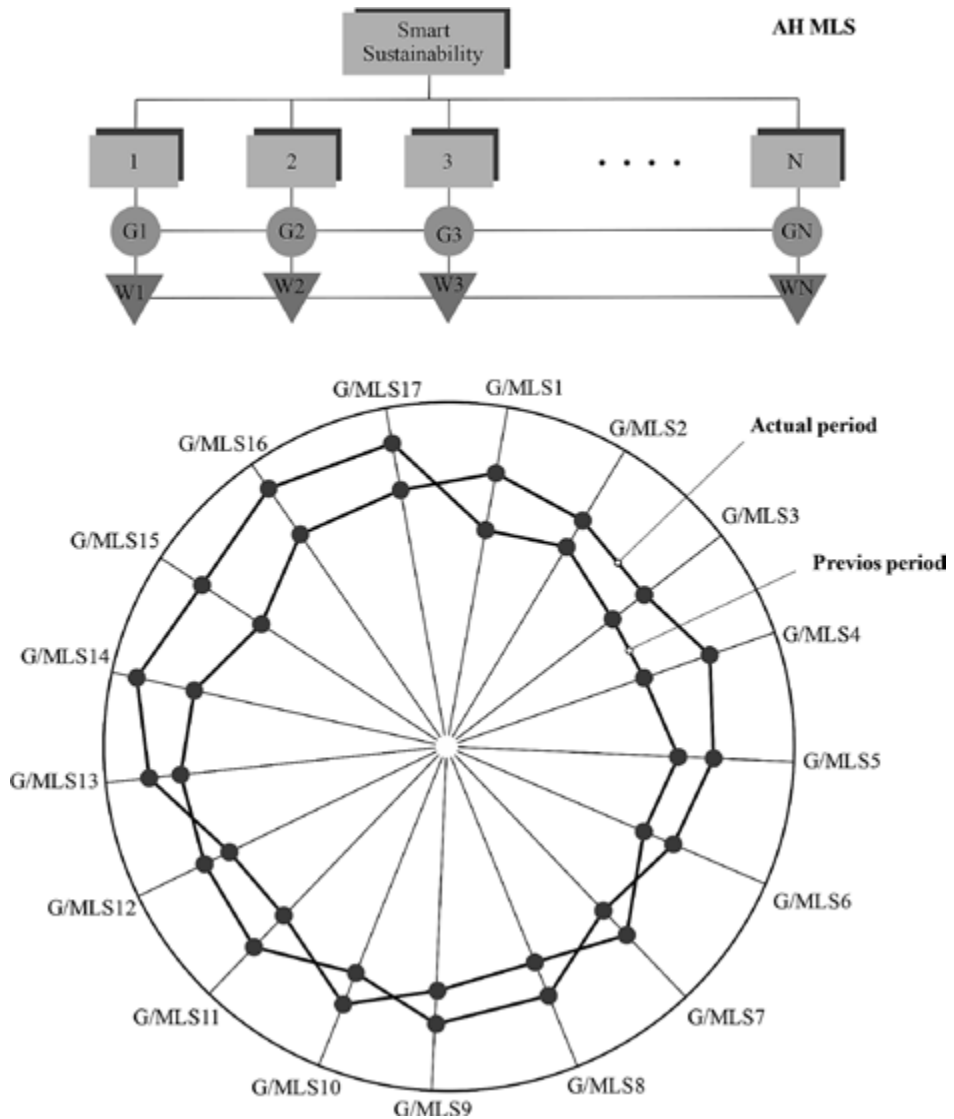


Figure 3: Dynamic view of reorchestration of different MLSs  
 Source: Own research

### 4. Case Study

The proposed methodology for reorchestration of different MLSs is verified in one public parking enterprise in Serbia.

In the case study is analyzed Public Parking Services in Serbia in last 124 months in two phases: (1) first 100 months and (2) next 24 months. Parking

services consists from five interconnected sub processes, ie.: (1) control of payment for parking services on general parking places, (2) payout for parking services on special parking phases, (3) taking away and blocking presented parked vehicles, (4) selling subscribed parking cards, and (5) marking parking places with traffic signalization. Each process is assessed by management team in past period, based on:

- Quality indicators, according ISO 9001:2015,
- Risk management, according ISO 31000:2012,
- Leadership based on elements in ISO 9004:2015 and own matrix, and
- Sustainability success according ISO 9004 and EFQM model, with adding smart components by authors.

For first 100 months we calculated sustainability in function of quality and risk. Relations in this model were significant and relation among them was:

$$\text{Sustainability} = 3.552 + 0.098 \cdot \text{Quality} - 0.703 \cdot \text{Risk}$$

In last two years this model was upgraded on following way:

- including smart leadership based on appropriate matrix (table 2),
- including smart sustainability concept based on: (1) economic, (2) environment, and (3) smart response of Smart Parking Services.

For all 124 months is provided calculation according new base model presented in Figure 4.

In last ten years we analyzed applied MLSs according proposed methodology presented in Figure 1. Results of analysis ex past pointed out that in last 100 months were applied MLSs related to: Quality (No.1), Project (No.3), Technology (No.5), Management (No.10), Risks and smart resilience (No.9) and Sustainability (No.20).

For each management and leadership system (MLS) we defined goals (step 2), weights (step 3) in previous 100 months. Through MLS is decided in 100th months to develop and introduce new MLSs (step 4). Using approach Management by Objectives we simulated effects of New MLSs, especially smart leadership (No.10), smart strategy (No.7), smart innovation (No.6), knowledge (No.15) and new business model (No.16). According Table 1 are defined goals of each of new MLSs and assessed rank of each MLS. In Figure 5 is presented Pareto analysis of assessed MLSs.

According the base model presented on Figure 5 we performed statistical analysis using SPSS software with three independent variables (V1, V10 and V9) and one dependent variable (V20). Input data for quality management are derived from certificated Quality Management System (QMS) according ISO 9001:2015. Input data for smart manufacturing and leadership are assessed using original questioners, as well as for smart resilience based on standards ISO 31000 (98) and ISO 37151. For assessment of Smart Sustainability is a used original developed questioner.

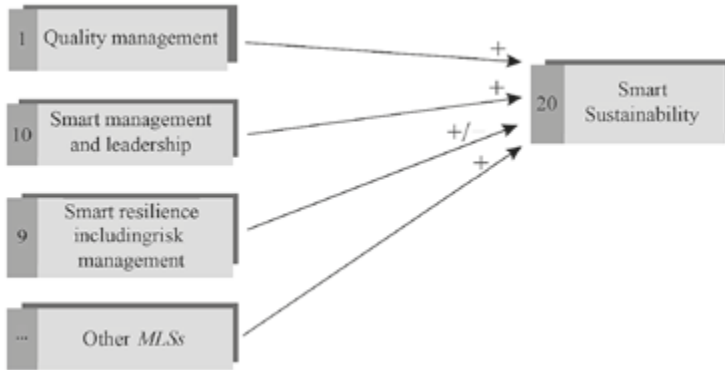


Figure 4: Base model for simulation effects of reorchestration of MLSs  
 Source: Own research

Results of statistical analysis pointed on that all variables have significant impact on smart sustainability. Smart management and leadership has significant role to reorchestrate all four MLSs.

For assessment efficiency of applied MLSs is used DEA (Data Envelope Analysis). Results of this analysis are presented in Figure 6 and Figure 7.

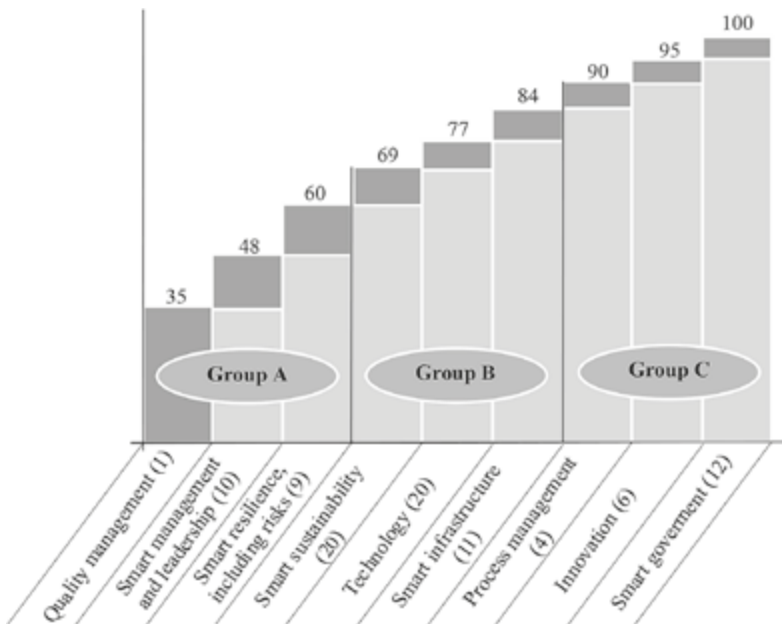


Figure 5: Base model for simulation effects of reorchestration of MLSs  
 Source: Own research

Statistical analysis is performed by SPSS V.21 in two steps, i.e. : (1) based on first analyzed period during 100 months with “classical” management and leadership concepts and (2) based on new leadership and management concepts during last two years characterized by using smart technologies. Because results of previous research in statistical analysis are in depend variables in group A (Figure 5), and calculated impact of variables V1, V10, and V9 on V20 in two steps. In first step is performed correlation analysis and analysis of V1, V10 and V9 on depend variables. In this case are low integrated systems management systems. Results of this analysis are presented in tables 2, 3, 4, and 7.

In second step is performed statistical analysis with added data from last 24 months (last two years). The results are presented in tables 6, 7.

Table 2: Correlations

		Correlations			
		s	q	r	l
s	Pearson Correlation	1	,901**	-,886**	,914**
	Sig. (2-tailed)		,000	,000	,000
	N	124	124	124	124
q	Pearson Correlation	,901**	1	-,875**	,931**
	Sig. (2-tailed)	,000		,000	,000
	N	124	124	124	124
r	Pearson Correlation	-,886**	-,875**	1	-,853**
	Sig. (2-tailed)	,000	,000		,000
	N	124	124	124	124
l	Pearson Correlation	,914**	,931**	-,853**	1
	Sig. (2-tailed)	,000	,000	,000	
	N	124	124	124	124

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Source: Own research

Table 3: Model Summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,938 <sup>a</sup>	,880	,877	,14527

a. Predictors: (Constant), l, R, Q

Source: Own research



Table 4: Coefficients

Coefficients <sup>a</sup>								
Model		UnstandardizedCoefficients		StandardizedCoefficients	t	Sig.	CollinearityStatistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1,336	,419		3,187	,002		
	q	,184	,104	,169	1,768	,080	,110	9,124
	r	-,403	,079	-,340	-5,087	,000	,223	4,479
	l	,505	,096	,467	5,287	,000	,128	7,833

a. Dependent Variable: s

Source: Own research

$$S = 1,336 + 0,184*Q - 0,403*R + 0,505*L$$

Table 5: Model Summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,931 <sup>a</sup>	,866	,865	,14008

a. Predictors: (Constant), l

Source: Own research

In the next step analysis of synergic effect of smart leadership on Quality and risk including resilience is presented.

Table 6: Coefficients

Coefficients <sup>a</sup>								
Model		UnstandardizedCoefficients		StandardizedCoefficients	t	Sig.	CollinearityStatistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	,451	,078		5,752	,000		
	l	,925	,033	,931	28,085	,000	1,000	1,000

a. Dependent Variable: q

Source: Own research

Analytic relation between Q and L is:

$$Q = 0,451+0,925*L$$

with reliability of model (0,727).

Table 7: Model Summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,853 <sup>a</sup>	,727	,725	,18365
a. Predictors: (Constant), I				

Source: Own research

Impact of L on risk and resilience is also calculated.

Table 8: Coefficients

Coefficients <sup>a</sup>								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	4,916	,103		47,834	,000		
	I	-,778	,043	-,853	-18,030	,000	1,000	1,000
a. Dependent Variable: R								

Source: Own research

$$R = 4,946 - 0,778 * L$$

$$S = 1,336 + 0,184 * (Q = 0,451 + 0,925 * L) - 0,403 * (4,946 - 0,778 * L) + 0,505 * L$$

DEA analysis pointed out that all 124 months efficiency of MLS had tendency for improvement with the highest values at the end of the period (124<sup>th</sup> month) showing synergy effect (Figure 6).

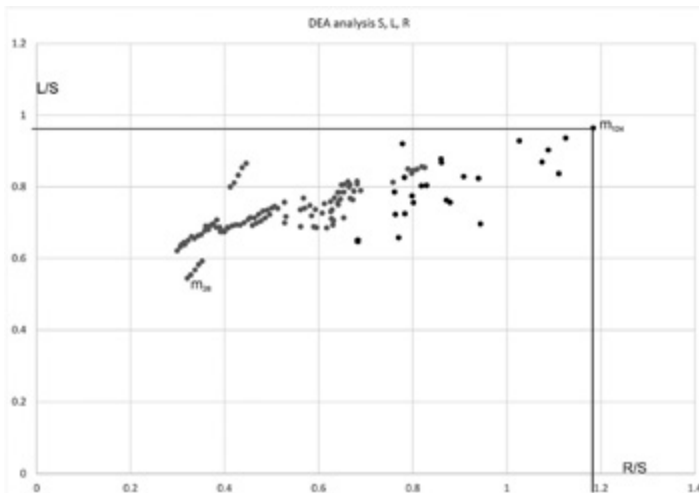


Figure 6: DEA Analysis S, L, R

Source: Own research

Including smart leadership (Figure 7) and synergic impact on Quality (Q) and Risk and Resilience (R), high MLS efficiency is calculated.

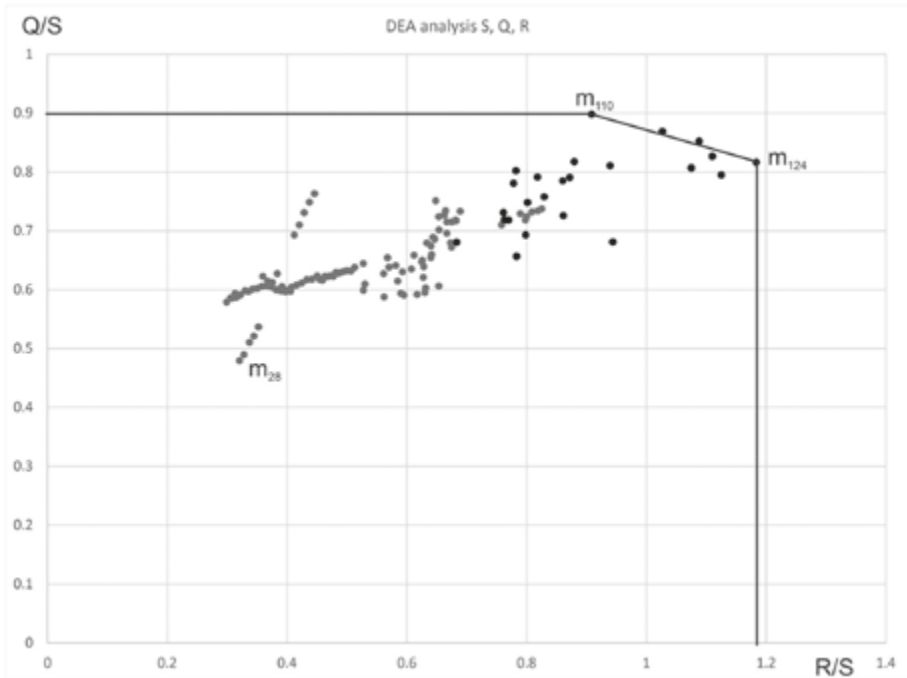


Figure 7: DEA Analysis S, Q, R

Source: Own research

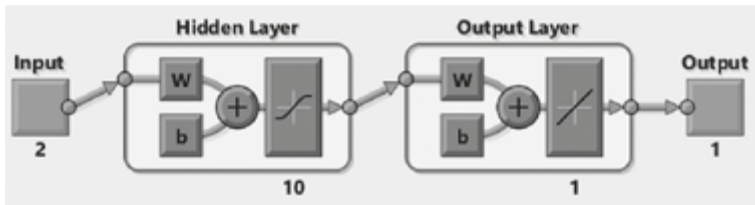


Figure 8a: ANN

a) Development of ANN

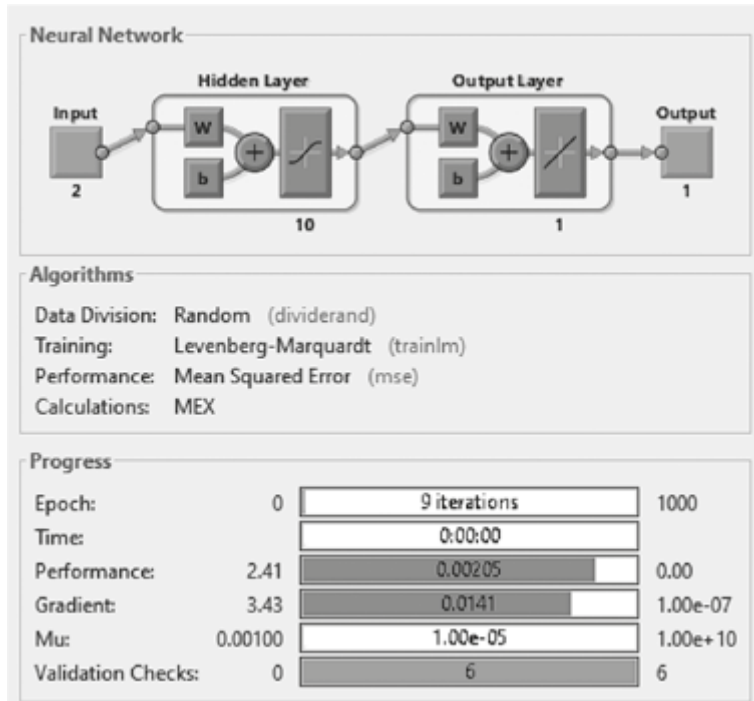


Figure 8b: ANN

b)Values of parameters after testing the network

Source: Own research

ANN is created using two inputs, hidden layer with 10 blocks and output layer (Figure 8a). ANN is used for simulation, and results are presented on the Figure 8b.

After ANN calculation for 100 months without synergic effect of MLS, results are used for the prediction for the next 24 month, including smart leadership and reorchestration (Figure 9). It could be observed that predicted ad real values of sustainability are very close to each other.

On this way are proved basic hypotheses:

- H0 – Reorchestration of MLSs is needed for improving smart sustainability of smart public parking enterprise,

and working hypotheses:

- H1 – Smart leadership has positive impact on Smart Sustainability,
- H2 – Smart quality management has positive impact or Smart Sustainability of Smart Public Parking Enterprise,

- H3 – Risks have negative impact on smart sustainability of Smart Public Enterprise and
- H4 – Throng Reorchestration of these three MLS is possible to achieve synergic effect on Smart Sustainability of Smart Public Parking Enterprise.

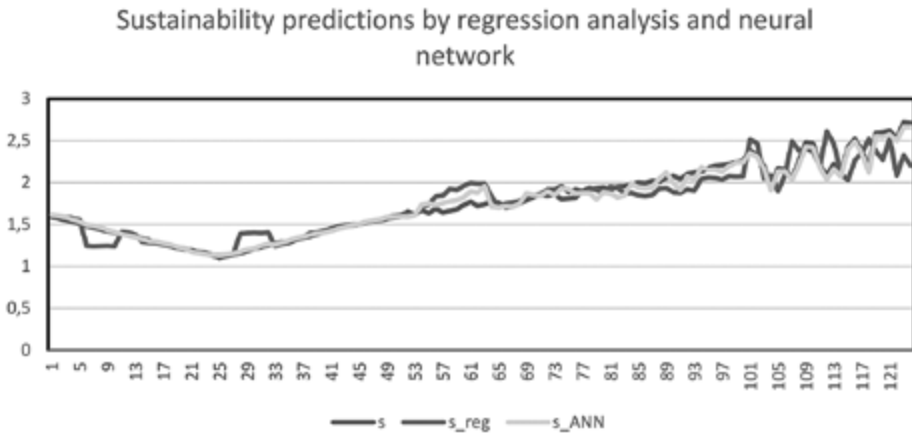


Figure 9: Sustainability predictions by regression analysis and neural network

Source: Own research

## 5. Discussion and Conclusion

In the article are presented case study is analyzed Public Parking Enterprises in Serbia in last 124 months in two phases. These results were in next two years upgraded with including smart technologies, smart leadership, and smart sustainability.

The first results of research are concern on MLSs in group A in Pareto analysis. Using statistical methods in Case study are proved basic and working hypotheses H1 – H4. On this way is verified proposed methodology for accurate results in future are needed more case studies for different enterprise, with applying different smart technologies and including MLSs in group B in Pareto analysis.

From aspects of using methods and tools there is possible to include other methods based on Fuzzy AHP, cluster analysis, simulation methods etc. On this way we hope that other research could participate in further research.

- Parking enterprises consists from five interconnected sub processes, i.e.:
  - (1) Control of payment for parking services on general parking places,
  - (2) Payout for parking services on special parking places,
  - (3) Taking away and blocking none presented parked vehicles,

- (4) Selling subscribed parking cards, and
- (5) Marking parking places with traffic signalization.
- Each process is assessed by management team in past period, based on:
  - 1) Quality indicators, according ISO 9001:2015,
  - 2) Risk management, according ISO 31000:2012,
  - 3) Leadership based on elements in ISO 9004:2015 and own metrics, and
  - 4) Sustainability success according ISO 9004 and EFQM model, with adding smart components by authors.

We believe that we provided evidence to promote urgent need for changing the management systems in enterprises. It is necessary to reorchestrate old and new management systems for applying them in smart enterprises which was the main goal of the article. Original methodology is developed which includes a number of approaches and methods for selecting optimal management systems for each smart enterprise presents the main contribution of the research. We also proved evidence from practical implementation in the real life system.

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# SUCCESSION AS A SPECIAL FORM OF RESTRUCTURING FAMILY BUSINESSES

## 1. Introduction

We define succession in family businesses as a generational change in ownership and management. It consists in handing over the management of the company to a younger successor. In addition to the moment of birth and the period of growth, succession is one of the key aspects of the successful survival of a family business and its restructuring. Contrary to the etymology of the term, restructuring does not mean a return to the old or previous structure, but a change to a better or more modern structure. The synonyms of 'restructuring' are 'modification', 'reconstruction', 'transformation', 'sanitation', 'transformation', 'improvement'. There are various definitions of restructuring in the literature (Antczak 2015). The term is not so much ambiguous as it is broad. The aim of the article is to present the role of succession in the restructuring of a family business against the background of various ways of implementing structural changes in enterprises.

## 2. Ways of enterprise restructuring

Enterprise restructuring may take various forms (Górka, Thier 2016):

- **Ownership restructuring** – privatization of existing state-owned enterprises (mainly by transforming them into state-owned companies and then selling shares). Most of the enterprises in Poland have already been privatized. At present, however, there is no political will for further privatization. The government makes decisions about the centralization of management and even the nationalization of enterprises (in 2019, the Capital Investment

- Fund [Fundusz Inwestycji Kapitałowych] was established to finance the purchase of shares and stocks in listed and non-public companies and with mixed capital);
- **Organizational restructuring** – improvement of the management system mainly by dividing the enterprise and getting rid of non-operational activities as well as production and ancillary services. Recently, processes of mergers (fusions) of enterprises and taking over other activities have occurred more frequently in Poland;
  - **Manufacturing restructuring** – adapting the production structure to market needs, mainly by diversifying production. On the other hand, the universalization of production was abandoned, i.e. the development of the production of components, auxiliary production and repair services in addition to primary production;
  - **Technical and technological restructuring** – replacement and modernization of decapitalized and obsolete fixed assets;
  - **Financial restructuring** – restoration of financial liquidity and improvement of profitability through arrangement proceedings with creditors and remedial action specified in the business plan (LHH Polska 2021). You can apply for help not only to the bank but also to the court when creditors threaten to file for bankruptcy of the enterprise. The bankruptcy is announced by the court in order to satisfy at least some creditors' demands after the sale of the remaining assets. Bankruptcy means loss of all resources. In Poland, 7–8 thousand people apply each year bankruptcy petitions (5–10 bankruptcies per 10 thousand enterprises). Taking into account all enterprises ceasing their activity, this indicator increases to 25–30 bankruptcies per 10 thousand enterprises. In Western countries it can even reach 100–200 bankruptcies per 10 thousand enterprises (PcW 2017, pp. 11–12; Antonowicz *et al.* 2018, pp. 18–22);
  - **Business restructuring** – developing a new corporate policy for investments, loans and taxes. Sometimes it takes the form of the so-called tax optimization („creative accounting”), i.e. tax avoidance as a result of breaking the law. This means entering to the shadow economy (70% of the shadow economy in Poland belongs to registered enterprises, and only 30% is an unofficial circulation). The share of the informal economy in generating GDP in Poland amounts to approx. 15%, which is several times higher than the budget deficit.

We also observe changes in the approach to the scale of economic activity. Traditionally, the economy of production scale means an increase in the size of production and service equipment and enterprises through the multiplication of these devices and their multiplication (increasing their number). This guarantees

a lower unit cost of production. On the other hand, downsizing is a relatively new management tool related to enterprise restructuring, as well as knowledge of change management and project management. It means reducing the scale of operations in order to look for new solutions, including the reduction of the enterprise. The reasons for this may be the following: decrease in orders, seasonality, technological changes (introducing less material and energy-consuming products and services), improving one's own activities and adapting to changes in the environment. Problems with reducing the scale of operations of enterprises have existed for a long time. However, due to the acceleration of changes in the environment, today this phenomenon occurs more often. Similarly, in terms of strategies and trends in the development of enterprises, the intensity of changes results in new forms of these entities:

- **Separation of ownership from business management.** In a traditional company, the owner is also its manager. On the other hand, in new large joint-stock companies, shareholders have no significant or no influence on management, as the actual power is exercised by professional managers;
- **The disappearance of boundaries between the organizational and functional aspect of the enterprise,** increasing dependence of the company on the environment. From the 1970s, large enterprises introduced strategic management focused on the most important and long-term issues, as well as relations with the environment. For similar reasons, crisis management has emerged;
- **Increase in the importance of intangible assets and intellectual capital.** This is evident in the transition of enterprises from the production of products to the sale of technologies (licences, know-how, projects) and franchising. An example is brand management – resignation from developing own production and focusing efforts on product design (e.g. Nike Inc., a global manufacturer of sports footwear, apparel and accessories);
- **The use of cooperation, outsourcing and catering by enterprises.** Such a strategy limits the universalization of enterprises and the autarky of the national economy. It involves the introduction of project (task) teams, value analysis committees, divisional, amorphous and fractal structures (Warnecke 1999);
- **Virtualization of enterprises and their inclusion in a common network.** Creation of clusters and connections of establishments based on computer networks, information banks and other forms of using the Internet (European Journal of Laws 2008; OECD 2007). This is to facilitate the implementation of specific tasks by enterprises, teams of specialists and individual experts.

New forms of enterprises are emerging, until recently referred to as *enterprises of the future*. These organizational forms do not always resemble

traditional enterprises, such as family businesses or enterprises of natural persons. They are subject to further changes, creating new types of organization:

- **Learning organization.** It is characterized by continuous learning of the entire crew based on information systems. Its features are as follows: 1. The learning process involves all employees; 2. Investing in human resources is a fundamental value; 3. Drawing conclusions from the mistakes made; 4. Full application of ISO and EMAS quality systems; 5. Constantly adapting to the changes in the environment and increasing the flexibility of the system. A synonym for 'learning organization' is an 'intelligent organization' – with large intellectual resources, difficult to copy, using the intelligence of all employees (Kaczmarek 2012).
- **Fractal organization.** It is a form of simplifying the enterprise and moving to a higher level of organization by dividing it into independent, self-similar and self-organizing units, performing tasks such as the entire enterprise;
- **Virtual organization** (not so much a formalized organization as a management tool). Its features: 1. Basing on computer networks, active use of information banks; 2. Developing a network organization, consisting of smaller units focusing on basic skills; 3. Gathering people belonging to different organizations, their inclusion in the common market game; 4. Connecting cooperating units and institutions into a network (e.g. a cluster); 5. Creating a temporary information network reflecting the infinite potential of energy (Kisielnicki 2013). The virtual organization is an artificial creation. It integrates independent companies into a single entity in order to maintain a common value system (strategic alliance).

The components do not form a hierarchy, while remaining dependent on each other as components of one system. The bonding effects are as follows:

- Rapid resource pooling for design improvement, prototype testing, design improvement, marketing, distribution and service;
- Combining narrowly specialized units in one system;
- The temporary nature of an information network organization. A virtual corporation is one that „exists, but does not exist” (Brzozowski 2010).

The weaknesses of virtual organizations are still little recognized. Even today, we can include: the danger of incompetent companies joining the system; lack of established patterns and appropriate legal regulations (regarding liability to customers); technical limitations of computer devices. The widespread use of high-level knowledge is gaining more and more importance. This tendency is reflected in the growing popularity of the three above-mentioned types of organizations. Classic factors of economic growth – *land* (natural resources), *labour* (workforce)

and *capital* (fixed assets and investment outlays) – must be supplemented with information and the ability to use modern technologies. Today, the share of information technology, high-tech and advanced industries is growing. In Poland, it currently accounts for 12–15% of industrial production (Świdurska 2009). An important feature is also the availability and a wide range of information, low or no transaction costs, elimination of barriers to starting a business.

### **3. The specificity of family enterprises and their importance in the modern economy**

Family businesses are the oldest and most common form of economic activity. Their essence is the combination of two factors: family and company. In this way, two subsystems are connected: the business sphere and family life. The *family* is a social institution related to the functioning of the household. On the other hand, an *enterprise* is a basic economic entity, legally, organizationally and economically independent. Its task is to manufacture products or provide services. An enterprise can therefore be defined as a group of people equipped with the means of production, the purpose of which is to make a profit and satisfy social needs. A distinctive feature of a family enterprise is the concentration of ownership and the related control and management system in the hands of one family (Jeżak 2016, p. 53). Combining work and family life may foster a better use of the talents of people involved in the family business, preservation and cultivation of ethical values in company management (Więcek-Janka 2013). The merger of the family and the enterprise may, however, pose a risk of a conflict of interests between the family and business. It's may even lead to its bankruptcy. This is called the paradox of family business management (Jeżak *et al.* 2004, p. 26; Masny-Dawidowicz 2013).

Initially, the phenomenon of family and business interdependence was treated – especially in Anglo-Saxon publications – as a destructive factor (Bergh, Stagl 2004). The goal of the family is to procreate and provide income to support the household. Family members are guided by social norms, sometimes by emotions and subjective reasons. The company's goal, on the other hand, is to maximize profit. Its management is guided by objective reasons. Therefore, the interoperability of two competing systems is difficult, especially in financial matters. However, the interaction of subsystems in the „family business” system is necessary and possible, which is confirmed by economic practice. This requires the adaptation of family members and employees of the company to the procedures defining the so-called corporate governance within the meaning of family governance (Szczepan-Jakubowska 2012). The issues of the relationship between the family and the company are presented in the literature in the form

of the so-called the two-circle model (diagram 1) and the three-circle model (diagram 2). The first shows the differences in the logic of the functioning of the family and the enterprise. The second model illustrates the interaction of three subsystems (family, owner, management). It reflects feedback and the field of conflicts between the family and the company. The model of three circles shows the cooperation of family members and people from outside the family taking up responsible positions in company management (Lewandowska 2020, pp. 56–59).

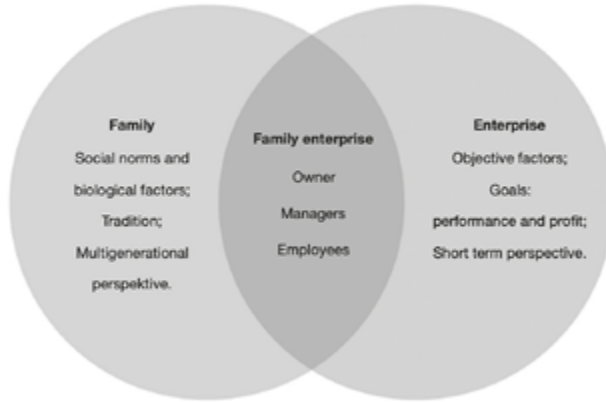


Figure 1: Two-circle model of connections between family and enterprise system

Source: Lewandowska 2020, pp. 57–58

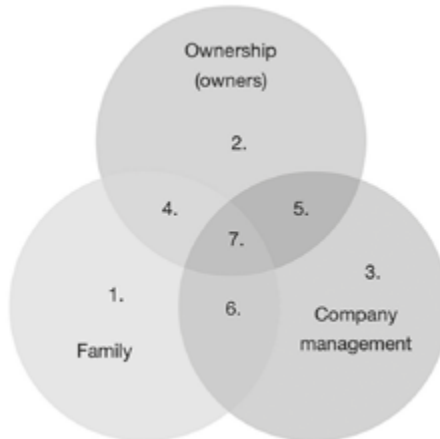


Figure 2: Three-circle model of connections between family and enterprise system

Legend: (1) Family member with no shares and no managerial function; (2) Non-family shareholder without a managerial function; (3) A managing manager outside the family and without shares; (4) Family shareholder without a management function; (5) Non-family and shareholder managing manager; (6) A family member in the management structure but with no shares; (7) Family member as shareholder and manager.

Source: Lewandowska 2020, pp. 57–58



Diagram 3 shows a model of a large family business with different types of economic and social activity. Currently, such enterprises establish in Poland more and more often. The economic order is maintained in them not only thanks to formal structures and administrative procedures, but also thanks to tradition and family relations. At the same time, traditionalism, as a rigid family hierarchy in management, may limit the innovativeness of the enterprise and its openness to changing market conditions (Winnicka-Popczyk 2018).

The ‘family business’ is a common name, especially in Anglo-Saxon countries. This term is not always used precisely. In the statistics, the family character of enterprises is rarely emphasized and therefore it is difficult to find statistical data on their quantity. The survey research gives rather approximate results. The owners of enterprises do not always take into account the fact of belonging to the family in its name. Moreover, strict criteria for distinguishing family enterprises are rarely given.

Basic business			
Family talents	<b>Family business</b> Mission, Vision and Values		Side businesses
Organization of the family and family life			Financial assets
Family office			Important family properties
Supporting schools and NGOs			Family assets (e.g. works of art)
	Social activity	Philanthropic activities	

Figure 3: Model of a family enterprise carrying out various types of activities

Source: Own elaboration based on Davis et al. 2019

The main reason for the difficulties in defining a family enterprise (and including such enterprises in the statistics of the Central Statistical Office [GUS] and Eurostat) is the lack of the category of „family enterprise” in Polish law and in the law of most other countries. In Poland, the need for a statutory definition was reported by the Supreme Audit Office (Ministry of Entrepreneurship and Technology 2019). However, the Minister of Entrepreneurship and Technology took the position that this legal problem requires an individual approach to every specific situation. An example of such an approach is the recent Act on successive management of a natural person’s establishment (Polish Journal of Laws 2018). It defines the rules for the operation of such an enterprise after the death of its owner (before that it just ceased to exist).

In countries other than Poland, legal provisions also define a family enterprise only in cases of introducing specific solutions. An example can be the mechanism of applying the succession package (the Netherlands), tax preferences or determining the opening hours of shops (Austria). Contrary to the USA and Western Europe, in Poland only small and medium-sized enterprises were referred to family enterprises (Kowalewska 2009, p. 49). Currently, this approach to classification has lost its importance. The issue of sole proprietorships of natural persons conducting business activity raises more controversy. In many countries, such enterprises are by definition classified as family businesses. In Poland, some authors exclude enterprises whose owners do not employ anyone (self-employment) from the category of family business. The situation will change, as the propensity of owners of one-person establishments to succession may increase as a result of the adoption of the aforementioned act on succession management and promotional activities of family business associations.

A family enterprise (business) can be defined as a „dual market organism, including family and business, which functions and develops in a multi-generational perspective” (Więcek-Janka 2013, p. 259; Lajtet *et al.* 2017, p. 45; Zellweger 2017, p. 22). In more extensive definitions, the issues of ownership and management of a given enterprise are also considered (Safin 2006; Sobiecki *et al.* 2014). In small enterprises, the family is the sole or dominant owner (over 50% of shares). In large family enterprises, especially joint-stock companies, the share of one family is usually lower. In small family businesses, their founders or successors most often exercise power directly and fully. In larger enterprises, the influence of the family on management may be varied. The third criterion is ‘intergenerational continuity’. In some countries, the recognition of a business as a family business depends on the subjective assessment of the owners themselves. In other countries (e.g. in the USA), only a company where the family has been managing for at least two generations is considered a family business. Another criterion is the ethical values declared by the owners, their families and employees. Such values include honesty, responsibility, loyalty and diligence, care for succession preparation and other elements of organizational culture (Marjański 2012, pp. 30–38; Klimek 2019, pp. 38–45 and 150–170; Więcek-Janka 2013).

The criteria for treating a specific enterprise as a family enterprise can be summarized in the following points: 1. The family has an ownership interest of over 50%; 2. At least one family member has significant influence on the management of the enterprise; 3. At least two family members are employed in the enterprise; 4. The owner predicts succession. In older publications, stricter criteria were usually adopted to define a given enterprise as a family business. For example, it was required that the family share in the share capital was at least 60%, that a given enterprise was run for at least two generations, so that after

succession it would still keep the current values and traditions (Donnelly 1964, pp. 93–100; Donckels, Fröhlich 1991, p. 93).

Legal regulations at the ministerial level that allow a given enterprise to be defined as a family business exist, *inter alia*, in Finland, Spain, the Netherlands and Romania. In Austria and Germany, tax breaks and other regulations supporting effective succession apply. Such regulations require a stricter definition of a family business, but only in specific situations. In Italy, there is a definition from the Family Code – a family business is an enterprise in which family members share property and work together. In Lithuania, a family business is a business established by a married couple, being their property and workplace. According to the European Commission (European Commission 2009, pp. 9–11), a family company can be defined as a company that meets the above-mentioned criteria, borrowed from Anglo-Saxon literature. Today, the following definition is commonly accepted: „A family business is one in which two or more family members own at least 51% of ownership. At least one of them takes a managerial position and tries to keep it for the next generation” (Jeżak 2016, p. 53; Jaffe 1990; Piekarski, Rudzińska 2012, p. 1200).

It is assumed that family businesses constitute 65–70% of all enterprises in the world (Jeżak 2016, p. 53). In the private economy sector, this ratio is estimated at 70–90%. Of the 500 largest Fortune companies, 35–40% are family businesses (Grant Thornton 2018, p. 28; Zellweger 2017, p. 24). Family businesses provide 70–80% of employment, and their share in GDP is usually 40–70%. Sometimes this ratio rises to 70–90%. In the countries of the market system, family businesses are the basis of the economy (Sobiecki 2014). In Poland, according to the criterion of the majority of shares owned by a family and at least one person involved in management, these are mainly first-generation enterprises – although they have been in existence for 15–40 years – and currently account for 27–30% of all enterprises. Taking into account the awareness of the family nature of the enterprise (assessed in simplification), this indicator can be estimated at as much as **36–41%**. These are the numbers most often found in professional publications (Borowiecki *et al.* 2018, p. 170; Jeżak 2016, p. 29; Sułkowski 2013; Wojewoda 2016). However, such an indicator should still be considered as understated. After taking into account the establishments of natural persons and the self-employed, this ratio rises to 70–78%. More recent surveys conducted by PARP and PwC gave results in the range of 68–70% (PARP 2015). These numbers are similar to the indicators recorded in Western Europe.

#### **4. The essence and importance of succession in family businesses**

Succession (Latin *successio* means succession) in a family business – is a generational change consisting in the transfer of ownership, power and

knowledge by the current owner and manager (senior) to his successor. Therefore, it is a process of transferring full responsibility – rights and obligations as well as knowledge resources related to the current and strategic management of the company. The main goal of succession is to ensure the continuity of the functioning and development of a family enterprise (Adamska 2014, pp. 5–6). Succession is a natural process. However, it must be prepared by the family, properly planned by the senior and the company's management. In practice, this turns out to be a difficult task, in a way more difficult than just running a business. An embarrassing situation can arise when the business is run by 2–3 owners (e.g. a married couple or siblings). Problems with succession also appear when children or other family members are not interested in taking over the company or are not predisposed to management. Moreover, after accepting the company, the successor is often forced to change his professional status, sometimes to change his lifestyle and social position. On the other hand, due to age or better education (professionalism), the successor may create conditions for a new stage in the development of a family enterprise.

The succession process should result from the agreed transfer plan. However, in practice, the reasons for the transfer of ownership are quite varied: reaching the retirement age by the owner and his usually subsequent decision to transfer the business; personal reasons (e.g. illness, divorce); changes in the market situation and in legal regulations that the younger successor can better cope with. In each of these cases, threats to the family business may emerge (concerns among suppliers and customers as to the continuity of management and the treatment of business partners). Uncertainty can also spread among employees and in the company's environment. Therefore, the successor should re-emphasize the continuity of the company's tradition, its values, strategy and priorities (Janka 2013, 2015; Tomski 2011, 2013; Więcek; Venter *et al.* 2005).

Other barriers to succession in Poland include the lack of practices and patterns for the transfer of property and power (Popczyk 2019; Więcek-Janka 2015). The vast majority of Polish family businesses were established after 1990. Therefore, entrepreneurs did not have any awareness or need to build succession programs and plans so far. In small enterprises there is also the reluctance of the leader to use external consultancy. Internal company statutes or company agreements do not always take into account such management aspects. However, the situation starts to change positively as a result of self-organization of family businesses. This is positively influenced by the activities of the Polish Agency for Enterprise Development, the Ministry of Development and Technology, auditing and consulting companies and other institutions. Examples include the activities of the Association „Inicjatywa Firm Rodzinnych” with its seat in Warsaw (publisher of the bimonthly „Relacje. Magazyn Firm Rodzinnych”), the Institute of Family

Business and the Foundation „Firmy Rodzinne” (Poznań). The Council of Family Companies [Rada Firm Rodzinnych] operating at the Polish Confederation of Private Employers „Lewiatan” is also of great importance. In addition, the Family Enterprise Department (2013) was established at the Warsaw School of Economics (Collegium of Business Administration) in Warsaw.

It is important to formulate the necessary normative facilitations in carrying out succession. More and more such regulations appear in the world. The first important step in Poland to facilitate succession was the aforementioned Act (Polish Journal of Laws 2018). The next step would be to pass the currently discussed law on the family foundation (Ministry of Entrepreneurship and Technology 2019). Such a document would help to avoid the fragmentation of assets and ensure the uninterrupted operation of the company after the succession. A similar document, the so-called the family ordinance [ordynacja rodowa] on landed estates was in force in Poland until 1939. Currently, some owners of large family enterprises are trying to establish foundations abroad, because in Poland they can only operate for a social or public purpose, not private (for the benefit of the family).

Taking over the functions of the owner and president takes place gradually under the supervision of the predecessor and the Family Council (when it is appointed) or the supervisory board (Adamska 2014; Bar 2018). Only after some time full responsibility is taken over by the successor (in small companies such a change may take place immediately after the preparation of the documents). Succession is therefore not an isolated act or a one-day handover ceremony. A well-thought-out succession is a process that takes several years to prepare the company and its new leader for change. In order for these issues not to divide the family, the rules of generational change must be transparent (Lewandowska 2020). This can be achieved through the Family Constitution, which must be prepared and adopted well before the succession process begins. Similar solutions, although they have been recommended in Poland for at least 20 years, have still not become popular.

## **5. The practice of succession in family enterprises and their longevity**

The European Commission is responsible for unifying the rules of carrying out succession. In the EU countries, 20–40% of enterprises are taken over by new owners every 10 years. Every year, the succession process goes through over 650 thousand companies with approx. 3 million employees. In 1993, the European Commission organized the 1st EU Symposium on the generational change in family business. In 1994, guidelines were formulated on the principles of ownership transfer. In 2003, a handbook on „good practices in the field of

business transfers” was published (European Commission 2003). In 2007, Expert Group on Family Business (European Commission 2009) was established. According to experts’ assessments, the young generation is less and less interested in taking over the family business. Therefore, when planning succession, the option of selling the enterprise to employees or third parties should also be taken into account.

In Poland, the issue of succession was raised by the National Council of Entrepreneurship at the Ministry of Development. In 2016, PARP launched a program to support the succession of family enterprises (PARP 2016). Drafts of other legal regulations as well as analytical and advisory work were undertaken. It turns out that during the privatization of the economy in 1980–2000, approx. 500 thousand of family businesses were created. About 25% of their founders have already transferred their business to their successors or are in the process of succession. Today, most of the founders of companies from this period are over 60 years old. This phenomenon was discussed during the 7th International Congress of Family Businesses, which took place in Poznań in 2020.

The average lifetime of a family business is 60 years (Zellweger *et al.* 2012). In Western Europe, only 30% of family businesses are taken over by the children of their founders, 10–12% are taken over by grandchildren, 3% are taken over by great-grandchildren (Family Business Yearbook 2015; Fleming 2000, p. 13). Earlier estimates of the index for the 2nd generation were 15% (Neubaner 1998). More recent studies show that the 2nd generation is already taking over about 50% of family enterprises, and the 3rd generation taking over about 25% of them (Deloitte Polska 2017). The growing indicators are probably the result of the consolidation of the family business sector (and the new statistical calculation methods). Most successful companies lose it in the third generation. Usually, the 1st generation builds the business, while the 2nd generation (children or relatives of the founder) maintains and develops the business. On the other hand, the 3rd generation (grandchildren) usually squanders or sells their fortune. In China, it has been believed for centuries that family wealth cannot last more than three generations (Yuan 2019, p. 977). At this third stage of the family business’s existence, it is often restructured or transformed into a joint-stock company. Going public usually leads to a loss of family character (although there are many opposite examples).

Research on the US market shows that approximately 40% of family businesses in this country are going through the succession process positively. At the same time, 10% of American companies are sold or go public, usually with the loss of family characteristics. Thus, half of US family businesses fail to transition to the next generation of owners (Ward 1997, 2004). In view of this tendency, family business associations and institutes dealing with this issue are developing

programs and guides for the successful intergenerational transformation. The Cambridge Institute for Family Enterprise is particularly active in the issue of succession. This unit studies the development cycles of enterprises and their owners' families in 30 countries over a period covering 17 generations (Davis *et al.* 2019, p. 5).

Extensive research on succession is also carried out in Poland (Popczyk 2019, 2020; Winnicka-Popczyk 2018). There are also guides on the proper succession and the optimal development strategy for a family enterprise (Adamska 2014; Marjański 2016; Surdej, Wach 2010; Zajkowski 2018; Żukowska, Pindelski 2012). From various studies (especially at the University of Łódź under the supervision of prof. Jan Jeżak) shows that 40% of Polish family enterprises were established after 2005, and only 30% of family enterprises will survive to the 2nd generation of successors (Jeżak 2014, 2016). It is also estimated that only about 10% of them will survive to the 3rd generation. More recent research (Deloitte, 2017) has already produced more favourable ratios: 53%, 25% and 22% for the 2nd, 3rd and 4th generation of owners. It is worth adding that family enterprises, as a rule, exist longer than non-family enterprises (Jeżak 2014, pp. 30, 62, 200–201).

Proper successions lead to an increase in the number of *long-lived* family businesses. This group usually includes companies existing for at least 100 years and remaining in the hands of the same family (Kuta *et al.* 2017, p. 94). Only enterprises existing for at least 200 years may become members of the French Association Les Hénokiens (Enochion – a biblical hero who lived 300 years) (Hénokiens 2021). Japan has the highest number of long-lived family businesses. About 100 thousand of local companies are over 100 years old. Almost 100 Japanese companies have been in existence for over 600 years. The Kongo Gumi real estate company is considered as the oldest of them (it has been operating since 578). In 2006, its last owner transferred the business to the Takamatsu construction group. In turn, the small hotel and spa Houshi Onsen near Tokyo has been in operation since 718. It is managed by Zengora Houshi, the 46th descendant of the founder. The oldest companies in Europe are the vineyards of Château de Gaulaine (France, Haute-Goulaine, Loire Valley) and the bell foundry of Pontificia Fonderia Marinelli (Agnone, Italy). Both enterprises were established around 1000. The oldest family business in Germany is the Pilgrim Haus hotel (Soest, Westphalia) founded in 1304, in Great Britain – the John Brooke & Sons (Huddersfield, Yorkshire) textile factory existing since 1541 (Cipiur 2019, pp. 224–225).

In Poland, the oldest family businesses include:

- Jan Felczyński Bell Foundry (Ludwisarska Felczyńskich Studio) founded in 1808 in Kałusz in Podolia. Since 1948 the plant has been operating in Przemyśl;

- Jewellery company W. Kruk, founded in 1840 in Poznań. Entering GWP in 2002 resulted in its takeover by VRG S.A. Capital Group;
- A. Blikle confectionery. It has been operating in Warsaw since 1869. The plant had problems due to the drop-in demand for cream cakes and the adoption of a new shareholder;
- Warsaw workshops and craft workshops: The Workshop of Bronze Art Articles, Łopieński Brothers (existing since 1862), the „Jan Kielman & Son” shoe workshop (1883) and the corset workshop „Aniela” (1896).

Cases of successful and unsuccessful successions described in the literature are quite numerous, the author also found a significant number of them in her research, but the volume of the article allows only for citing some examples and their general evaluation.

## 6. Conclusion

Restructuring of a family enterprise is most often undertaken due to significant changes in running a business or the functioning of the owner family. However, regardless of the reasons for carrying out the succession, it should be a continuous process. This process takes a special shape when (as a result of restructuring) the family enterprise is planned to be transformed into a joint stock company, enter the stock exchange or admit new shareholders or managers from outside. Moreover, a special case is when the enterprise is managed by several families.

Financial restructuring is particularly specific. In general, it is associated with the preparation of a reorganization program as well as composition proceedings with creditors. At the same time, business owners are not always aware that the court can effectively defend against bankruptcy. The condition for this, however, is to make an earlier decision to go to court and prepare the relevant documents. In the case of a technological restructuring of a family business, it is sometimes difficult for the owner to overcome his fears. They are related to the implementation of digital technologies in the management of a company that cultivates traditional ways of doing business. The condition for an effective restructuring of an enterprise is the transition (after a period of increasing the scale of production or services) to the stage of deliberate and planned reduction of the size or structure of economic activity. This applies in particular to reducing the resource and value of fixed assets for the sake of intensifying the use of intangible assets and intellectual capital.

In addition to the above-described two- and three-circled models of system relations between family, owners and company management, it is worth striving



to create a model that implements various types of activity. It is not always about greater diversification of production or services. The change may concern the implementation of businesses and activities that have so far been rare on the market or treated as side activity. It can be philanthropy, supporting schools, universities and non-governmental organizations. The family office can handle not only business operations, but also family real estate and other assets (e.g. works of art). All similar activities may facilitate the survival of a family business for the next generations.

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# THE IMPACT OF BALANCING THE SUSTAINABLE DEVELOPMENT OF ENERGY COMPANIES ON THEIR ADAPTABILITY IN TRANSITION CONDITIONS

## 1. Introduction

Energy transition is changing the structure of the energy sector. Its main assumptions boil down to building a new energy sector by replacing coal- and gas-based energy sources with renewable sources of energy, using digital technologies as well as information and communication technology on a large scale (Popczyk, 2018). A rapid transition of electricity systems towards modern, low-carbon pathways and technologies will be necessary to achieve the climate goals while enabling other objectives to be met such as economic development, access to energy, and resilience of the energy system (Sadie et al., 2020).

The transformation of the energy sector towards a permanent change in the structure of electricity production and an increase in the share of Renewable Energy Sources (RES) in the energy mix is a challenge for Polish energy companies. It is inevitable to change business models to the extent that will enable them to actively participate in the transformation, and then to achieve long-term strategic objectives in the new balance of power in the transformed energy sector.

The article focuses on the issue of sustainable development of energy companies in transformation conditions. It answers the question “Does the implementation of sustainable development strategies by energy companies in transformation conditions affect their adaptability?”

The purpose of this paper is to analyse and evaluate the impact of the implementation of the sustainable development goals on the adaptive skills and resilience of business models. It presents a synthesis of determinants related to

sustainable development and sustainable transformation. The article summarizes the results of research on the implemented sustainability strategies and their impact on building adaptive capacity. It focuses on key aspects of transformation.

## 2. The idea of sustainable development

The general philosophy of sustainable development boils down to reconciling and combining into one compatible whole, the two contradictory and seemingly antagonistic concepts of “growth” and “development”. “Growth” seeks an increment of matter, “development” seeks a fuller, larger or better state through the expansion or realization of specific capabilities (Hull, 1992).

The idea of sustainable development is to ensure economic growth while protecting social and environmental sustainability. It assumes a vision of progress that combines current and long-term goals, local and global actions, and considers social, economic, and environmental issues as inseparable and interdependent components of human progress ([www.europa.eu](http://www.europa.eu)).

The term was defined in the 1987 Brundtland Report of the World Commission on Environment and Development “Our Common Future” as development that meets the needs of the present without compromising the ability of future generations to meet their own needs. In 1975, sustainable development was defined as such a course of inevitable and desirable economic development that does not significantly and irreversibly damage the human living environment, does not lead to degradation of the biosphere and reconciles the laws of nature, economics and culture. “The Earth Summit” in 1992 in Rio de Janeiro laid the foundation for many international agreements on the environment ([www.europa.eu](http://www.europa.eu)) The EU’s long-term vision of sustainable development introduced in 2006, combines mutually supportive economic growth, social cohesion and environmental protection. In 2009, the European Commission highlighted the EU’s leadership on climate change issues and the promotion of a low-carbon economy ([www.europa.eu](http://www.europa.eu)).

The 2030 Agenda for Sustainable Development adopted in 2015 by 193 countries, members of the United Nations, sets out 17 Sustainable Development Goals and 196 related targets for balancing three aspects: economic, social and environmental ([www.un.org.pl](http://www.un.org.pl)). These goals include: no poverty, zero hunger, good health and well-being, quality education, gender equality, clean water and sanitation, clean and affordable energy, economic growth and decent work, innovation, industry, infrastructure, reduced inequality, sustainable cities and communities, responsible consumption and production, climate action, life below water, life on land, peace and justice strong institutions, partnerships to achieve the goal ([www.un.org.pl](http://www.un.org.pl)).

Sustainable development is a humanitarian concept of global development, which is determined by improving the quality of life and well-being of humanity under conditions of limited natural resources, taking into account the long-term effects of the development (Adamczyk, 2007). It involves achieving a balance of three pillars (economic, environmental and social) because they are “inextricably linked and internally interdependent” (Bansal, 2002). The concept is viewed through the lens of sustainability, balancing and self-sustainability.

### **3. Sustainable business models**

A sustainable business model is a mapping in a given place, time and business space of the structure of interrelationships of factors that guarantee meeting the needs of stakeholder groups, which enables achieving competitive advantage and constitutes the creation of a future platform for growth and development (Jabłoński, 2013).

In literature, there are many definitions of a sustainable business model. In the concept of A. Jablonski, it is a model that combines the use of the concept of corporate social responsibility and corporate value management, ensuring that the needs of shareholders and other stakeholder groups are met, through the balancing of potentials, towards generating value in a sustainable manner and enabling continuity of management (Jabłoński, 2013).

M. Jablonski, P. Timmers and J. Sarkis emphasizing the importance of sustainability in business models, point out that companies are increasingly expected to make a positive contribution to people’s lives, the economic and social ecosystem and to protect natural resources in the fight against climate change (Jabłoński& Timmers &Sarkis, 2020).

In P. Palzkill’s and K. Augestein’s view a sustainable enterprise is an organization whose managers are able to use and renew the potential they have, which is the basis of an effective business model and strategy. It provides a competitive advantage, an increase in the value of the enterprise and the continuity of business, through the confrontation of functions and resources taking into account economic, ecological and social criteria (Jabłoński, 2013).

Financial performance is a reflection of strategic decisions. When decisions are made in relation to many important elements of a company and dynamically affect its environment, there is an opportunity to achieve and maintain an advantage over competitors. These decisions can be facilitated by remodelling the organizational structure to a sustainable one, embedded in a tight, sustainable strategic management system. Companies are required to take responsibility for both economic, environmental and social consequences of their actions.

(Jabłoński, 2010). Detailed objectives for these perspectives are presented in the table below.

Table 1: Sustainable Development Goals

Economic objectives	Environmental objectives	Social goals
<ol style="list-style-type: none"> <li>1. Profit;</li> <li>2. Maintaining liquidity;</li> <li>3. Increasing profitability;</li> <li>4. Satisfying customer needs;</li> <li>5. Introducing innovations;</li> <li>6. Improving product quality</li> <li>7. Increasing long-term value.</li> </ol>	<ol style="list-style-type: none"> <li>1. Reducing consumption of natural resources;</li> <li>2. Reducing emissions of harmful substances;</li> <li>3. Preservation of the state of nature;</li> <li>4. Reducing the amount of waste;</li> <li>5. Use of techniques and technologies with less environmental impact;</li> <li>6. Reducing the risk of environmental disasters</li> </ol>	<ol style="list-style-type: none"> <li>1. Creating new jobs;</li> <li>2. Improving the quality of work and life at work;</li> <li>3. Ensuring long-term employment;</li> <li>4. Building appropriate incentive systems;</li> <li>5. Improved stakeholder communication processes;</li> <li>6. Community outreach.</li> </ol>

Source: Own elaboration based on (Skowroński, 2006)

At least three approaches to sustainability are discussed in theory and practice. The first of these is the Triple Bottom Line (TBL). TBL is often used by organizations that create a sustainability strategy using stakeholder analysis, corporate social responsibility activities, and seeking win-win opportunities. Business models seek to balance environmental, social, and economic factors. The second approach is based on the assumptions of the sustainability business model. In this approach, “you cannot create sustainable value for customers without creating value for the broader stakeholder community.” The third addresses the sustainability aspect in conjunction with the sharing economy business models enabled by the networked economy. Central to the sustainable continuity of these models are issues of social, environmental and labour principles that can be reflected in legal requirements but also in social norms and values (Jabłoński, 2020).

Since the end of 1990s, an increase in the number of indices (benchmarks) has been observed, describing the economic situation of companies meeting sustainable development requirements. These indices are a reference for investors taking into account ESG (Environment, Social, Governance) criteria ([www.wikipedia.pl](http://www.wikipedia.pl)). In foreign markets these are: Dow Jones Sustainability Index series (DJSI), Calvert Social Index (CSI), FTSE4GOOD series, FTSE Johannesburg Stock Exchange Socially Responsible Index (JSESRI), Sao Paulo Stock Exchange Corporate Sustainability Index (ISE), KLD Global Sustainability Index Series (GSI) ([www.respectindex.pl](http://www.respectindex.pl)) and on the WSE – Respect Index (WIG ESG) ([www.gpw.pl](http://www.gpw.pl)). As a result of positive verification of applying socially responsible business principles, environmental, social, economic and corporate governance issues, the WIG ESG included Polish energy companies such as: TAURON Polska Energia S.A. (TAURON), ENERGA S.A. (ENERGA), Polska Grupa Energetyczna PGE S.A. (PGE).



#### **4. Adaptability of business models in a sustainable environment**

Intrinsically linked to sustainability is the concept of resilience. Business model resilience is introduced in the literature as a conceptual framework to better understand the systemic dimension of companies affected by sustainability transformations and their design (Palzkill & Augestein, 2017).

The impact of sustainable development on the business model and its resilience, should be considered from the perspective of the concept of building and attributes of business models. A business model describes the design or architecture of the mechanisms of creation, delivery and capture of the values it employs. It provides an abstract, rational way of describing how a corporation creates, delivers and obtains value and competitive advantage from a value creation perspective (Zoott & Amit, 2009). A corporation is treated as a collection of elements that allow value to be created and that enable the corporation to profit from that value (Teece, 2010). Organisational resilience is the ability to adapt the business model in the face of environmental pressures without losing identity (Palzkill-Vorbeck, 2014).

The business model concept sets recommendations to be taken into account when modelling, which, however, does not limit the possibility of evolving it according to the needs (Pigneur & Joyce & Paquin, 2015) and is the measure of adaptability of the business model.

Adaptability is the ability of a business model to achieve high business performance by continuously adjusting the configuration to changes in the environment (Jabłoński, 2015). There are two types of adaptation (Kornai, 1973):

- 1) primary, by which the organisation ensures its survival;
- 2) secondary, by which the organisation strives to achieve something more than survival – aspirations, expectations.

The higher the level of adaptation, the greater the chances of survival and even development in a turbulent environment. Taking into account the criterion of range, reaction time and change potential, R. Krupski distinguishes low level of adaptation, associated with not taking into account all or some of the changes in the environment, as well as medium and high levels of adaptation ensuring various anticipatory actions (Krupski, 2008). From the point of view of the speed of response to change, gradual, incremental and continuous adaptation as well as immediate, revolutionary and discontinuous adaptation can be distinguished. Four types of change can also be distinguished: adaptation, metamorphosis, evolution and revolution (Meyer & Brookes & Goes, 1990). The realisation of sustainable development is connected with the necessity to adapt to the changing environment, continuous learning and reorientation of the enterprise's goals (Grudzewski et al 2010).

In the assessment of K. Taeuscher and N. Abdelkafi, the reliability of business models decreases if the structure is intolerant to the uncertain dynamics of its components. Assuming that there are four groups of criteria for business model resilience analysis that constitute the adaptability of a business model structure, they proposed strategies for designing resilient business models (Taeuscher & Abdelkafi, 2015).

## 5. Sustainable energy transition

Sustainable energy development is an important current issue for the energy sector, and one which is also related to sustainable energy policy. It is one of the 3 pillars of the European energy policy focusing on parallel and balanced development of: competitiveness, security of supply and sustainability.

Sustainable energy policy is supposed to improve the welfare of the society by ensuring energy security, preserving the growth of competitiveness of energy systems and protecting the environment.

The objectives of the Energy Law include: creating conditions for sustainable development, energy security, economical use of fuels and energy, development of competition, counteracting the negative effects of natural monopolies, environmental protection, implementation of international agreements and balancing the interests of energy companies and consumers of fuels and energy.

In the literature, the terms sustainable energy or sustainable energy sector are also used (Pawłowski, 2011). The energy sector is distinguished by the specific nature of its product – electricity – which is associated with a constant need to balance supply and demand and with its strategic importance for the economy and the state.

Transformation means change, metamorphosis, reshaping. For the energy industry, it means changing the entire socio-economic and political system, moving from the traditional path of energy supply to a new system, while maintaining energy security through decarbonisation and adapting business models to regulatory, market, technological and social changes, as well as changes and needs of customers. A summary of the determinants is presented in the tables below.

Tightening decarbonisation policy at the EU level significantly affects the functioning of the electricity market in Poland. There is a permanent change in the structure of electricity production due to the decarbonisation of the energy sector. In their sustainable development strategies, Polish energy companies must take into account the dynamic development of renewable energy sources and change the national energy mix towards low- and zero-emission sources at the expense of reducing conventional sources.

**Table 2: Regulatory conditions of the transformation – main directions**

EU Regulations	National regulations
<ol style="list-style-type: none"> <li>1. Tightening of the policies of financial institutions concerned with financing fossil fuel energy projects;</li> <li>2. The “Fit for 55” legislative package to align regulations with the target of reducing greenhouse gas emissions by at least 55% by 2030:                             <ul style="list-style-type: none"> <li>– EU ETS – increasing the emission reduction target (even by up to 61% by 2030, as compared to 2005);</li> <li>– RED II – increasing the target for the share of energy from RES in final consumption (to 40% in 2030);</li> <li>– EED – increasing the target for energy efficiency improvement to 36% by 2030;</li> <li>– Carbon border “tax” for energy-intensive sectors.</li> </ul> </li> </ol>	<ol style="list-style-type: none"> <li>1. Work on solutions for the coal mining and energy sectors;</li> <li>2. Draft of an amendment to the RES Act modifying the prosumer support system;</li> <li>3. Changes to the power market – exclusion of units not meeting the 550 g CO<sub>2</sub>/kWh emission limit after 2025;</li> <li>4. Polish Energy Policy PEP 2040 – transformation including self-sufficiency in electricity, a decrease in the share of coal and an increase in the share of RES in the national energy mix.</li> </ol>

Source: own elaboration, based on: [www.europa.eu](http://www.europa.eu) [reading: 20.11.2021]

**Table 3: Market and technological conditions**

Market conditions	Changes in the technological environment	Changes in customer attitudes and needs
<ol style="list-style-type: none"> <li>1. Projected growth in domestic electricity consumption (electric energy);</li> <li>2. Increase of CO<sub>2</sub> emission permits prices;</li> <li>3. Accelerated development of RES sources;</li> <li>4. Dynamic growth of the number of micro-installations;</li> <li>5. Decreasing demand for coal for power and heat generation;</li> <li>6. Increase in prices of raw materials;</li> <li>7. Tightening of requirements and criteria for investment assessment by financing institutions;</li> <li>8. Change in the structure of the energy market.</li> </ol>	<ol style="list-style-type: none"> <li>1. Development of electromobility;</li> <li>2. Development of hydrogen technologies;</li> <li>3. Development of a market for products and services dedicated to the construction and maintenance of offshore wind farms, nuclear energy;</li> <li>4. Potential for using gas technologies;</li> <li>5. Development of electric energy storage technologies;</li> <li>6. Digitalization of the energy sector.</li> </ol>	<ol style="list-style-type: none"> <li>1. Focus on customers.</li> <li>2. Dynamic development of prosumer installations.</li> <li>3. Increasing environmental awareness of customers;</li> <li>4. Growing interest in reducing the carbon footprint of farms;</li> <li>5. Increasing popularity of digital customer service channels and multi-channel.</li> </ol>

Source: own compilation based on company reports: [www.tauron.pl](http://www.tauron.pl), [www.gkpgge.pl](http://www.gkpgge.pl), [www.enea.pl/](http://www.enea.pl/)

New energy market conditions, changes in the technological environment and changes in customer attitudes and needs determine the shape of future business models of energy market players and the structure of the value chain. New business models in the energy market must take into account market, technological and customer attitudes and expectations changes. Effective incorporation of these requirements in the strategies of energy companies requires the construction of sustainable business models.

## 6. The impact of balancing sustainable development on the adaptability of energy companies

### 6.1. Research process

The research on the impact of balancing the sustainability of energy companies on the adaptability and resilience of business models in transition conditions was conducted in several stages. First, the literature on sustainability, sustainable business models and sustainable energy was reviewed. Then, the transition conditions were reviewed. Selected reports and statements of some entities from the energy sector were reviewed. The aim of this stage was to review and synthesise the regulatory, market and technological conditions creating the balancing framework and the applied approaches to sustainable development in the energy market.

The research used K. Tauscher and N. Abdelkafi's approach to building resilient business model strategies (Tauscher & Abdelkafi, 2015). For this purpose, three Polish energy companies were selected, the integrated capital groups – PGE, TAURON and ENEA. A comparison was also made of the objectives of sustainable development pursued by European companies.

The methodical approach presented made it possible to analyse and assess the impact of using the idea of sustainable development on the adaptability of business models of the analysed energy companies. In defining conclusions, the author's many years of experience and practice in restructuring entities in this sector was used.

### 6.2. Test results

European energy companies place great emphasis on meeting sustainability targets. They focus on selected objectives that are key to their business.



Figure 1. Sustainable development objectives of selected European energy companies

Source: TAURON Group Non-Financial Statements for 2020 [www.tauron.pl](http://www.tauron.pl) [Accessed: 20.10.2021]

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The priority objectives of sustainable development for Polish business, adopted by the EU Council, are: good health and well-being, quality education, gender equality, economic growth and decent work, innovation, industry, infrastructure, responsible consumption and production. The key objectives on which the surveyed companies focus are presented in the figure.



Figure 2: Key sustainability objectives of selected Polish energy companies

Source: own elaboration based on [www.tauron.pl](http://www.tauron.pl), [www.gkpgc.pl](http://www.gkpgc.pl), [www.enea.pl](http://www.enea.pl)

An analysis of the impact of the energy companies' sustainability strategies on adaptive capacity is presented below.

Table 4: Analysis of the impact of the implementation of the sustainable development strategy

Lp.	Factors influencing resilience	Strategy for designing resilient business models	Transformation directions in the sustainable development strategies of energy companies
1.	Level of uncertainty of key components of the business model	Stabilisation and elimination of components with high uncertainty	<ol style="list-style-type: none"> <li>1. Elimination of unprofitable units – change of the generation portfolio, increase of RES in the mix, implementation of government transformation programmes (goal 7 – clean and accessible energy, goal 13 – climate action);</li> <li>2. Investing in stable, green infrastructure, leveraging innovation, new product strategies, clean technologies (Goal 9 – innovation, industry, infrastructure);</li> <li>3. Caring for the community – green solutions, supporting sustainable development of cities and human settlements (goal 11 – sustainable cities and communities);</li> <li>4. Environmental protection, closed loop economy (goal 12 – responsible consumption and production).</li> </ol>
2.	Tolerance to variability	Adding a balancing feedback loop	<ol style="list-style-type: none"> <li>1. Strategy documents – transformation goals and measures and sustainability objectives and actions;</li> <li>2. Financial and non-financial reporting providing information on the results and effects of sustainable development activities;</li> <li>3. Indicators describing the economic situation among companies complying with the requirements of sustainable development;</li> <li>4. Systems/tools for management and communication, as well as risk management related to sustainability activities, increasing tolerance for unexpected changes through feedback.</li> </ol>

Lp.	Factors influencing resilience	Strategy for designing resilient business models	Transformation directions in the sustainable development strategies of energy companies
3.	Feedback on effectiveness	Reducing feedback delays	1. Non-financial reporting providing information on the creation of customer value and the ability to generate value; 2. Use of innovative, green information technologies (Objective 9 – innovation, industry, infrastructure).
4.	Adaptability of the model structure	Designing models with higher adaptive capacity	Activities in the direction of adaptation of the business model to new conditions, require a balanced transformation, focused on increasing value: 1) changing the investment/manufacturing structure, 2) securing sources of financing for development; 3) social acceptance/social dialogue and communication of changes; 4) energy security.

Source: own study using the approach of K. Tauscher and N. Abdelkafi's approach to building resilient strategies (Tauscher & Abdelkafi, 2015).

On the basis of the conducted research, the following conclusions were formulated:

1. European energy companies place great emphasis on meeting sustainability targets. The energy company's business model is inextricably linked to sustainability.
2. Energy companies' adaptation measures to reduce negative climate impacts include transparent communication of sustainability issues both inside and outside the organisation by reporting on the impacts of business activities on all stakeholders and the environment. Reporting on the implementation of sustainability activities and outcomes supports direct feedback in terms of customer value, efficiency of information delivery, ability to generate value for the company.
3. The variety of sustainable development goals adopted by Polish and European energy companies is mainly due to the structure of their production portfolio and related strategic directions. This is closely related to the energy policy of a given country and historical conditions concerning portfolios of generation sources.
4. Activities related to the transformation of the energy sector are in line with the implementation of the sustainable development goals and thus limit or support activities related to the management of uncertainty in the business models of energy companies.
5. The business models of Polish and European energy companies take into account the implementation of the Sustainable Development Goals 2015–2030 adopted by the United Nations. Implementation of sustainable development goals creates conditions for building tolerance to variability, supporting the achievement of transformation-related goals.
6. Sustainable transformation supports the adaptability of business models.

## 7. Conclusion

Meeting the challenges posed by the transition to low and zero carbon energy sector requires resilient business models to ensure continuity of value creation and high adaptability to changing environments. Successfully managing the transition requires resilient business models that ensure the ability to operate and adapt in the face of adversity or constraints encountered as a result of the complex interaction of risk factors associated with continuous change and business sustainability.

The implementation of energy companies' sustainability strategies influences their adaptability in transition conditions by supporting the resilience of business models. These enterprises should include sustainability goals and directions in their strategies and undertake actions to assess the impact of these actions on business model resilience. It is also reasonable and expedient to continue research related to the resilience of business models of energy companies.

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# CORPORATE CYBERSECURITY – AN INTRODUCTION<sup>1</sup>

## 1. Introduction

In the 2020s, cybersecurity is quite often the subject of media reports. This is usually due to spectacular breaches of various IT systems in public administration, banking, or business (EU, 2017). Cybersecurity is part of management responsible for minimizing the risk to the organization's cyberspace and preventing any cybersecurity incidents (Borysewicz, Michalik, 2007; Gwoździewicz, Tomaszycski, 2017). However, until recently, it was seen as an Information and Communication Technology (ICT) challenge rather than a business risk.

The definitions presented in Table 1 take into account key aspects related to cybersecurity and emphasize the mechanisms related to ensuring cyberspace protection against potential threats.

The problem of cybersecurity affects both large enterprises, which report huge losses resulting from various incidents, as well as micro-, small and medium-sized enterprises (SMEs), which rarely report such incidents, but often fall prey to cyber attacks (Vakakis et al., 2019; Abootorabi, Mehrno & Omidvari, 2014). What was previously a challenge mainly for ICT professionals, has become an acknowledged business risk today, as it affects in the organizational, human and social aspects of business processes. This situation is currently driving long-term changes in the approach who should manage cybersecurity risks, especially in SMEs, and how. The Department for Promotion of Digital Policy quoted the recommendations of the European Union Agency for Cybersecurity (ENISA)

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(PAP, 2021) regarding cybersecurity's division into three categories: people (as key stakeholders), processes (appropriate procedures, including regular audits, incident response, secure password policies, software upgrades and data protection) as well as technical aspects (up-to-date antivirus programs, encryption and security monitoring, regular backups).

Table 1: Definition of cybersecurity

No.	Author	Definition
1.	Journal of Laws 2018, item 1560	Resistance of IT systems to violations of the confidentiality, integrity, availability and authenticity of the processed data or related services offered by these systems.
2.	Nakielski (2017)	Using up-to-date security programs, avoiding potentially infectious sites and keeping information on the company, one's position and other sensitive data confidential, both on websites or in instant messaging.
3.	Balut, Budek (2018)	A concept much broader than the technological security itself. As part of the company's information security policy, it should include recommendations for staff on issues such as information protection, password management, and awareness of online threats.
4.	Craigen et al., (2014)	Cybersecurity is the organization of a set of resources, processes, and structures used to protect cyberspace and its systems against events that do not comply with actual property rights.
5.	Regulation (EU) 2019/881 of the European Parliament and of the Council of 17 April 2019	Cybersecurity refers to actions necessary to protect networks and IT systems, their users and third parties affected by cyber threats.
6.	Lezzi et al., (2018)	Cyber security is the process of protecting (socio-)technical systems from threats by a combination of technical measures and protocols or standards implemented in organizations.
7.	Bauer et al, (2009)	Cyber security can be seen as a public good that society as a whole strives for, but it is not always perceived that way by individual actors in society.
8.	ITU (2008)	A collection of tools, policies, security concepts, safeguards, guidelines, risk management approaches, activities, training, best practices, warranties, and technologies that can be used to protect the cyber environment, as well as the organization's and the user's assets. These include connected devices, personnel, infrastructure, applications, services, telecommunication systems, and all transmitted and/or stored information in the cyber environment.

Source: own study based on a literature review.

In addition to causing a number of negative effects for the SME sector, the COVID-19 pandemic, has also increased the role of the Internet in e-commerce, securing transactions, as well as promotion and communication, both with customers and employees. Today, many SMEs operate solely in a remote, online model, in which the issue of online security becomes of utmost importance for the economies of the EU Member States.

The purpose of this paper is to review the literature on corporate cybersecurity. The applied research methods include: critical analysis of the subject literature, project documents and the available secondary data.

## **2. Skill shortage as a key cybersecurity challenge**

The 2018 and 2019 Cybersecurity Workforce Survey estimates global workforce in SMEs at approximately 3 million. Currently, their main problem is the lack of cybersecurity skills (Ackerman, 2019; Caulkins, Marlowe & Reardon, 2018), understood as representing the combination of abilities, knowledge and experience that enable an individual to perform a task well (Carlton & Levy, 2015).

The importance of cybersecurity knowledge is broadly recognized nowadays, but the need for its extensive application depends on the cybersecurity skills of the employees. At the same time, cybersecurity is maturing as a profession. The advent of the Cybersecurity Workforce Framework (Newhouse et al., 2017) in the US and the Chartered Institute of Information Security in the UK indicate how serious an approach is taken to the issue.

EU's General Data Protection Regulation (GDPR), which entered into force in May 2018, requires much more attention to data security than any data processing or IT system than before. Due to a lack of skills, many organizations are not prepared for GDPR compliance as ICT practitioners are usually unaware of GDPR requirements and how to apply them. Several GDPR webinars conducted in the EU in 2019 showed that 60% of companies are unprepared for this regulation (Mirza, Brown, 2020; ESG, 2021).

The Enterprise Strategy Group's Annual ICT Skills Survey (ESG, 2021) revealed that the cybersecurity skill gap has continued to increase, more than doubling over the past five years (Blažič, 2021). The proportion of organizations reporting skill shortages increased from 23% to 51% in just two years. Conversely, a study by Tripware (2020) found that the skill gap is growing, but that it's also becoming increasingly difficult to find and then hire qualified cybersecurity professionals. The Cybercrime Magazine (2020) predicts that there will be 3.5 million vacant cybersecurity positions in the global labor market in the next 5 years. This indicates that cybersecurity employment forecasts are lagging behind the dramatic rise in cybercrime and the need for more cybersecurity professionals.

## **3. IT infrastructure as a cybersecurity challenge in the enterprise**

Contemporary critical infrastructure is becoming more and more complex; it is operated by many interconnected entities. The most important IT security risks in industry (Siemens, 2020) include operating system server resources

(50%), connection to SCADA control systems (36%), and embedded drivers or other components (23%). Manufacturers are increasingly aware of the importance of cybersecurity, but acknowledge some barriers, e.g., the security of industrial control systems is compromised due to a lack of collaboration between information technology (IT) and operational teams (OPS). 51% of respondents in a Forrester research for Fortinet (2020) claim that these solutions operate in silos, i.e. the OPS team manages the security of critical industrial equipment, and the IT department is responsible for the security of ICT tools. Almost 1/3 of respondents did not know who is responsible for cybersecurity with regard to processes, control and automation systems, and even business planning and logistics. According to 91% of respondents, IT and OT departments should be co-responsible for the cybersecurity of the machine park, and to have transparent communication processes established (58% of responses). Enterprises can benefit from the close collaboration between IT and OPS teams, with the greatest asset being access to real-time production data (66% of responses), followed by the ability to profit and grow the business with better insight into production data (59%).

Cybercriminals use various social engineering methods aimed at corporate employees. They also use applications, e-mail links, and websites to spread malware. The most common methods of their operation are:

- phishing – the perpetrator sends e-mails impersonating a reputable company or institution and tries to obtain login passwords or other transaction data,
- scraping – automatic download of website data, DDoS attacks, i.e., flooding the network with massive spam which overloads and blocks the system,
- ransomware – a type of malware that blocks access to the system and encrypts the data; decrypting is possible only when the ransom demand is met.

A ransomware attack lasts less than a second, but the aftereffects can be felt for days and months, and ultimately lead the company to paralysis or bankruptcy. Therefore, it is particularly important to use multi-layered protection that synchronizes information on potential threats to prevent the attack in advance. On the other hand, next-generation security solutions using artificial intelligence and machine learning will help in both rapid detection of threats and recovery of the IT system.

Report „Cybersecurity in Polish companies 2020” allows a conclusion that only 27% of respondents have computers protected with antivirus software and only 14% have automated backup. Over 54% use passwords, but the rest could not even define the security means used. In addition, as many as 46.27% of respondents claim that their company does not employ data security specialists (<https://vecto.pl/doc/Vecto-Cyberbezpieczenstwo-polskich-firm-2020.pdf>).

## 4. Conclusion

Cybersecurity is more than just an IT problem. Cyber risk must be considered in every aspect of the organization's functioning. Boards and policymakers should permanently link cyber threats to key operational and strategic processes and discuss them on a regular basis. Cyber risk should be measured (empirically and economically) in relation to strategic purposes, regulatory and statutory requirements, business performance and financial expenses. Management boards should analyze which cyber threats pertain their organization and determine how the risks affects business. Their task is to develop key indicators to measure the overall performance of cyber risk management. The team responsible for managing cyber- and IT infrastructure security should regularly report on plans and solutions implemented in terms of building cyber resilience. It is imperative that the enterprise provides adequate cybersecurity resources, both in personnel and funds. The management board must ensure that the organization has a cybersecurity culture, which goes beyond the IT department and that there are people responsible for coordinating the cybersecurity risk strategy.

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# STRATEGIC CONDITIONS OF FUNCTIONING OF IT SYSTEMS IN TERMS OF RESTRUCTURING

## 1. Introduction

In the late 1990s, many companies experienced unprecedented problems. These include issues such as:

- decrease in customer loyalty,
- increase in employee turnover,
- increased competition,
- increased pressure to reduce costs,
- increase in customer experience and requirements towards suppliers,
- decrease in the effectiveness of activities in the field of promotion.

The solution to the above-mentioned problems was broadly understood restructuring, which was very often associated with the emergence or commencement of the enterprise computerization process. It can be concluded that the dissemination of the process management concept was closely related to the emergence of **material requirements planning** (MRP) and later **enterprise resource planning** (ERP) systems. The reasons for which enterprises connect restructuring (e.g., by introducing process management) with computerization are primarily: financial reporting on the scale of the entire company, better cost control for performance of the entire enterprise, improvement of the ability to compete, e.g., through better coordination of activities in multi-branch enterprises.

## 2. The essence of modern information systems

In the literature, the concept of an information system is defined in various ways. Nowicki defines the information system in terms of cybernetics. He states

that the information system is a spatially and time-ordered set of information, of information senders, recipients of information, information channels and technical means for transmitting and processing information, performance of which is used to control an economic object (Galińska, Kopania 2016 p. 1).

Information systems play a vital role in the success of any enterprise. They meet the information needs of managers who make decisions. A management information system consists of many resources. These are human, information, procedural, technical, and financial resources. Their characteristics are presented in Table 1.

Table 1: Information system resource structure

RESOURCE TYPE	DETAILED RESOURCES
Human resources	<ul style="list-style-type: none"> <li>– system users</li> <li>– system operation</li> <li>– research, design, and consulting teams</li> </ul>
Information resources	<ul style="list-style-type: none"> <li>– Database</li> <li>– method databases</li> <li>– model databases</li> <li>– knowledge database</li> </ul>
Procedural resources	<ul style="list-style-type: none"> <li>– algorithms</li> <li>– procedures</li> <li>– software</li> </ul>
Technical resources	<ul style="list-style-type: none"> <li>– hardware</li> <li>– telecommunications networks</li> <li>– data carriers</li> </ul>
Financial resources	<ul style="list-style-type: none"> <li>– cash funds</li> <li>– non-cash funds</li> </ul>

Source: own preparation based on (Voronkova, Kurochkina, Firova, Bikezina 2017, p. 23).

ERP systems play a leading role among modern IT systems. They are derived from materials management systems known as MRP, developed in the 1960s. The ERP system differs from the traditional approach to enterprise computerization, reflecting each area of the enterprise's performance in the form of successive modules. This method of implementation allows for the simultaneous integration of various areas (such as production, finance, marketing) with the evolutionary progress in the field of computerization directly related to the adopted business strategy.

When the company decides to implement an ERP class system, it should consider the following options to integrate the implementation with restructuring process:

1. Implementation of business processes similarly to their mapping through the ERP system.
2. Modification of the ERP system to adjust its functionality to the processes carried out in the company.

3. Partial modification of processes associated with simultaneous changes in the purchased software.
4. Fully automatic ERP implementation preceded by the appearance of the Business Process Management (BPM) system in the company.

The classic tasks performed by the ERP system include:

- gathering information on the demand for goods produced in the enterprise and determining the size and time of production (scheduling),
- optimization of inventory and warehouse management,
- separation of information into individual organizational units and integration of information coming from both internal and external sources,
- process monitoring at the operational level (real-time system). (Kasprzak, 2005)

Another issue to be solved before proceeding of introduction of ERP class is to define the criteria for evaluating the result to be measured and to define quantifier in monitoring. Examples of such indicator w could be ROI, investment efficiency index in Cost-Benefit Analysis, EBITDA, coverage ratio cost in etc. (Gospodarek, 2015)

### **3. Concept of process modelling**

The degree of standardization of individual areas affects the level of maturity of the organization in the context of the process model. For a given process (or area of processes) there are defined (general) goals to be achieved, common to all processes in terms of:

- commitment to execution: creating a policy and providing sponsorship for activities to improve the process,
- executability: ensuring that the project and / or organization has the necessary resources to continue improving the process,
- leading the implementation: collecting, measurement, and analysis of data related to the processes,
- verification: verifying whether the projects and / or activities of the organization comply with the requirements, processes, and procedures.

The methods of implementing the processes are the practice of the company, which is presented in the figure below.

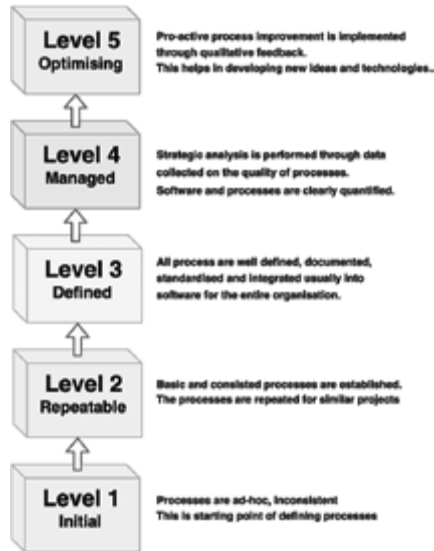


Figure 1: Business Processes Maturity Model

Source: (Adamczyk, Jędrzejek, 2002).

## 4. Business process modelling tools

There are several tools available on the market to support modelling and process optimization. The most important are programs for:

- graphic visualization (e.g., MS Visio),
- process mapping (e.g., iGrafx FlowCharter),
- process modelling and simulation (e.g., iGrafx Process 2000, Corporate Modeler 8e, Aris Toolset, ProcessWise WorkBench, WorkFlow Analyzer),
- creating IT systems – CASE tools (Select Enterprise, Rational Rose),
- process modelling within ERP systems – tools embedded in ERP class systems (e.g., IFS Business Modeler).

Many companies use MS Word and its drawing functionality as the basic support for the modelling (or mapping) project. However, it is not an optimal solution, as it significantly slows down the work on processes in the company. The use of even the simplest solution, which is MS Visio, will allow a process mapping company to significantly accelerate work and make it less tiring and easier for its employees.

The difference in functionality (the ability to generate simulations) entails a difference in the price of the tools used. Based on market observations, it can be concluded that tools with built-in process simulation mechanisms are at least three times more expensive than those without them.

In addition to the price, modelling tools differ in the following ways:

- the ability to generate documentation in HTML format,
- compatibility with office suites (e.g., MS Office),
- the ability to exchange data with other tools or IT systems (e.g., ERP class systems, CASE tools, WorkFlow systems, other process modelling tools, other office programs (e.g. MS Excel, MS Word),
- easy (intuitive) process modelling,
- the possibility of group work (shared repository),
- using notation, symbols, and other markings (e.g., like UML, flow chart, IDFO or otherwise). (Wróbel, <http://www.crm.com.pl/wiedza2.htm>)

Currently, there is a tendency to use BPMN (Business Process Modelling Notation) in the process of modelling business processes. It is a graphical notation for describing business processes promoted by the Business Process Management Initiative. It becomes a practical standard for this description. The great advantage of this notation is its unambiguity, usefulness both for process descriptions for ERP and WorkFlow class software, and the fact that it is supported by more than 30 leading companies in this area. Among the Polish companies supporting BPMN, for example, Rodan Systems in the Office Objects WorkFlow product is worth mentioning. Among other products present on the Polish market, this notation is supported by e.g., iGrafx tools,

BPMN describes three basic types of processes:

- internal process – private (internal) business process,
- public process – catching abstract – public
- cooperation process – B2B collaboration – global process

Basic categories of BPMN graphic elements:

- active elements – flow objects
- connecting objects
- process venues – swim lanes
- artifacts, graphic elements that are not flow elements; they are used to provide supplementary information. Three artifacts are defined in BPMN: data, annotations, and groups. (<http://pl.wikipedia.org/wiki/BPMN> )

## 5. Modelling of business processes in the implementation of ERP systems

The integrated IT system of the ERP enterprise can be viewed from three perspectives:

- system implementation perspectives,
- job prospects in real time (on-line),
- system adaptation perspectives.

The last of the above-mentioned perspectives – adaptation, referring to training and assimilation of the system, is not interesting from the point of view of the theory of business process management.

What comes to the fore is the perspective of the implementation of systems with business process models, with the task of system configuration and process documentation, and in the second rank, the way the ERP system works – on-line operation mode with transactions, workflow, and data warehouses.

By putting process modelling at the top in the characteristics of ERP systems, we recognize a de facto new role of systems of this class in relation to earlier systems. ERP models primarily a process-oriented, not data-oriented enterprise. Process modelling, a tool for implementing the process vision of an enterprise, allows for high flexibility and variability of processes, their adaptation to business needs.

Process orientation best suits the changing nature of business. Data may describe the components of a business process, but are not included, at least in the systems preceding ERP, in the process structure of a business, and therefore old IT systems are difficult to associate with business.

Thanks to the process structure, ERP systems become a supplier of management information. The moment of transition from data modelling to process and information models is clearly visible in the descriptions of IT systems: in the description of the functions of earlier systems, there is data, data processing and information in the service of economic decisions. The structure, if present in these models, comes from the hierarchy of decision making, i.e., from the operational, tactical, and strategic level.

For the needs of the leading R / 3 product of SAP, a library of 800 processes occurring in various sectors of the economy was created. SAP customers can choose the best business processes for them from this library. The top 800 listed in business processes include supporting the implementation of the R / 3 system – SAP Business Engineer.

The components of the SAP R / 3 Reference Model relate primarily to reconfigured processes, but also to the functional, information, organizational, and data areas. The SAP R / 3 reference model has the following models:

- functional,
- processes,
- data,
- organization,
- information flow,
- communication,
- distribution.



Launching processes in real operation conditions takes place because of an event (e.g., placing an order or transferring an order to production). In the informational sense, the events initiating the process come from the system user or from updating databases.

## 6. Conclusion

It should be noted that organizational changes are associated with quite significant changes. If the company's management decides to significantly interfere with the structure, it means a serious approach toward ERP issues, and not treating it as another IT system. Studying many cases describing unsuccessful implementations of ERP systems in enterprises (e.g., the case of Ericsson) let us conclude that the most important reason of failures is the lack of connection of the implementation process with the company's strategy, and especially with its business processes.

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## NOTATKI

**TOWARZYSTWO NAUKOWE  
ORGANIZACJI I KIEROWNICTWA**

STOWARZYSZENIE WYŻSZEJ UŻYTECZNOŚCI

**DOM ORGANIZATORA**

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[www.tnoik.torun.pl](http://www.tnoik.torun.pl)  
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[www.wydawnictwo.tnoik.torun.pl/sklep/](http://www.wydawnictwo.tnoik.torun.pl/sklep/)  
e-mail: [wydawnictwo@tnoik.torun.pl](mailto:wydawnictwo@tnoik.torun.pl)



**DZIAŁ WYDAWNICTW**

Wydajemy drukiem  
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The presented monograph is an attempt to signal some of the above-mentioned problems, with particular attention paid to the need to manage restructuring in the face of threats, through adaptation to economic, social and political conditions, as well as the necessity to make changes leading to development and adapting enterprises to functioning in post-pandemic modern economies. The content of the considerations presented in the paper has been divided into the following five thematic threads, delineating the subsequent parts of this monograph:

- ▶ Impact of the COVID-19 Pandemic on the Social and Economic System,
- ▶ Mechanisms of the Development Processes of Enterprises and Economies,
- ▶ Contemporary Challenges of Enterprise Management,
- ▶ Financial Aspects of the Functioning and Development of Enterprises,
- ▶ Restructuring in the Face of Contemporary Challenges.

The publication is the subsequent effect of many years' cooperation of the Department of Economics and Organisation of Enterprises of the Cracow University of Economics with other Polish and foreign scientific centres and representatives of economic practice. The theoretical, methodical and empirical considerations contained in this study are the result of research conducted by individual Authors, which focus on the issue of contemporary restructuring management, which is a response to threats, enabling adaptation to change and development to business entities.