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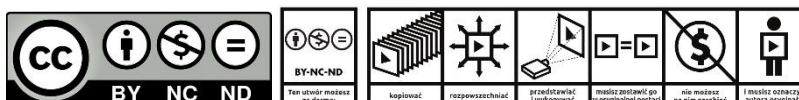
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RISK-SENSITIVE INVESTMENT PROJECT PLANNING, IN A SELECTED MANUFACTURING COMPANY

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Introduction/background: The research problem undertaken in the publication was the selection of appropriate risk assessment methods and tools that can be applied in the planning of investment projects in a company that is the largest producer of secondary aluminium casting alloys in Central Europe. Due to the identified need, it was assumed that the results of the application of these methods and tools should support rational decision-making on the implementation of strategic investment projects.

Aim of the paper: The research presented in the publication was aimed at developing a risk-sensitive investment project planning procedure geared towards rational strategic decision-making, tailored to the specific characteristics of the company in question.

Materials and methods: The research involved free-form interviews, a literature study, a case study and a review of company records.

Results and conclusions: The result of the research was to accurately identify the needs of the company, the competences of its employees and the essence of risk assessment methods and tools, and to select and incorporate them appropriately in the investment project planning procedure developed.

Keywords: investment projects, risk assessment, rational decisions.

1. Introduction

Investment projects are inevitably accompanied by risks, the effects of which may affect the effectiveness of their implementation. For this reason, it is extremely important to carry out risk considerations - in the planning process - before deciding to implement such projects. There is a rich body of research in the literature in this area, describing good practices and solutions, including but not limited to many risk management methods and tools that can be applied to investment project planning. However, the multiplicity of methods and tools proposed makes it difficult to identify which are the best in relation to the realities of a particular enterprise. This implies the need for their rational selection for application in practice (Łada, Kozarkiewicz,

2010, p. 177; Brzozowski, 2014, p. 14). The basis for this selection should be a thorough recognition of the needs of the enterprise, the competencies of the employees, as well as the essence of the methods and tools themselves (Tyrańska, 2018, pp. 115-116; Antoszkiewicz, 2007, pp. 17-18). Only such recognition implies a rational selection of methods and tools to the specifics of the enterprise, and then to the development of a procedure for their application in practice.

This publication presents the results of a study aimed at developing such a procedure, which was carried out for a multi-site manufacturing company operating in Poland, which is the largest producer of secondary aluminium casting alloys in Central Europe. This enterprise carries out a number of investment projects, the planning of which is carried out on the basis of a specific procedure in which methods and tools for assessing the economic efficiency of projects and risk management are applied. However, the results of applying these methods and tools are not sufficient when it comes to assessing the risks of projects of a strategic nature, which tend to be capital-intensive. This makes it difficult to make decisions about the implementation of these projects. For this reason, the *research problem* has become the selection of appropriate risk assessment methods and tools, the results of which can provide criteria for making decisions on the implementation of strategic investment projects. The *main objective of the research* was to develop a procedure for planning investment projects taking into account risk, adapted to this specificity of this company, aimed at making rational strategic decisions.

2. Scope of research and research methods

In order to solve the formulated research problem and achieve the objective, the scope of the research comprised two stages in which several methods were used.

In stage I, an analysis of the research problem was carried out, aimed at identifying:

- needs for which risk assessment methods and tools are to be used, taking into account the possibility of using those already known and applied within the company,
- the competence (knowledge and experience) of those who will use risk assessment methods and tools within the company,
- selected risk assessment methods and tools that meet specific needs and are tailored to the competences of those using them.

The research methods used in this phase included free-form interviews with company executives and employees, a review of documentation used in the company's investment project planning process and a literature study.

In stage II of the research, the results obtained from the analysis of the research problem carried out in stage I were synthesised. The result was the development of a procedure for planning investment projects taking into account risk, adapted to the specific characteristics of this company. To verify this procedure, a case study was conducted to assess its usefulness in the practice of strategic investment project planning and decision making.

3. Results

3.1. Results of stage I of the research

In order to identify the needs to be met by appropriate risk assessment methods and tools, as well as the competences of the employees who will use them, free-form interviews were conducted with managers and employees¹, involved in the company's investment project planning process. A review of the company's documentation was also carried out². On this basis, it was determined, among other things, how the investment project planning process takes place in the company, who is involved, what documents are prepared and what information is used as a basis for decision-making (Figure 1).

The basis of the company's investment project planning process is the 'Investment Strategy', which is developed by the Board of Directors and the management of its plants. In this process, first of all, the 'Investment Strategy' is operationalised, i.e. the definition of the objectives to be achieved in the coming year. Then, as part of an opportunity study, strategic projects are proposed, the implementation of which should influence the achievement of these objectives, as well as adaptation and ongoing projects that arise from the identified needs of the company. These projects are divided by importance and by size (Table 1).

Subsequently, a pre-feasibility study is carried out to pre-select the proposed investment projects. Since the overriding objective of the 'Investment Strategy' is to maximise the value of the company, the pre-selection is carried out on the basis of an assessment of the economic efficiency of the projects, which is carried out by the staff of the controlling department. In particular, for so-called current and small projects, the evaluation of economic efficiency is carried out on the basis of the payback period (PP) method by simply relating the investment expenditure to the expected annual revenue. By contrast, for all other projects, and obligatorily for strategic and large (capital-intensive) projects, the evaluation of economic efficiency is carried out on the basis of the net present value (NPV) method, taking into account all updated receipts and expenditures. Based on the results of the assessment, those projects are rejected for which:

- PP is greater than the depreciation period of the associated basic fixed assets,
- NPV is less than zero, unless they are adaptation projects, necessary for implementation.

The remaining proposed projects are further analysed, as part of a feasibility study. In particular, an "Investment Project Charter" document is prepared for each project (Table 2).

¹ Development director, managers and staff of development, controlling, operational, quality departments.

² "Investment process charter", "Investment project charter", "Investment project risk management charter", "Annual Investment Plan".

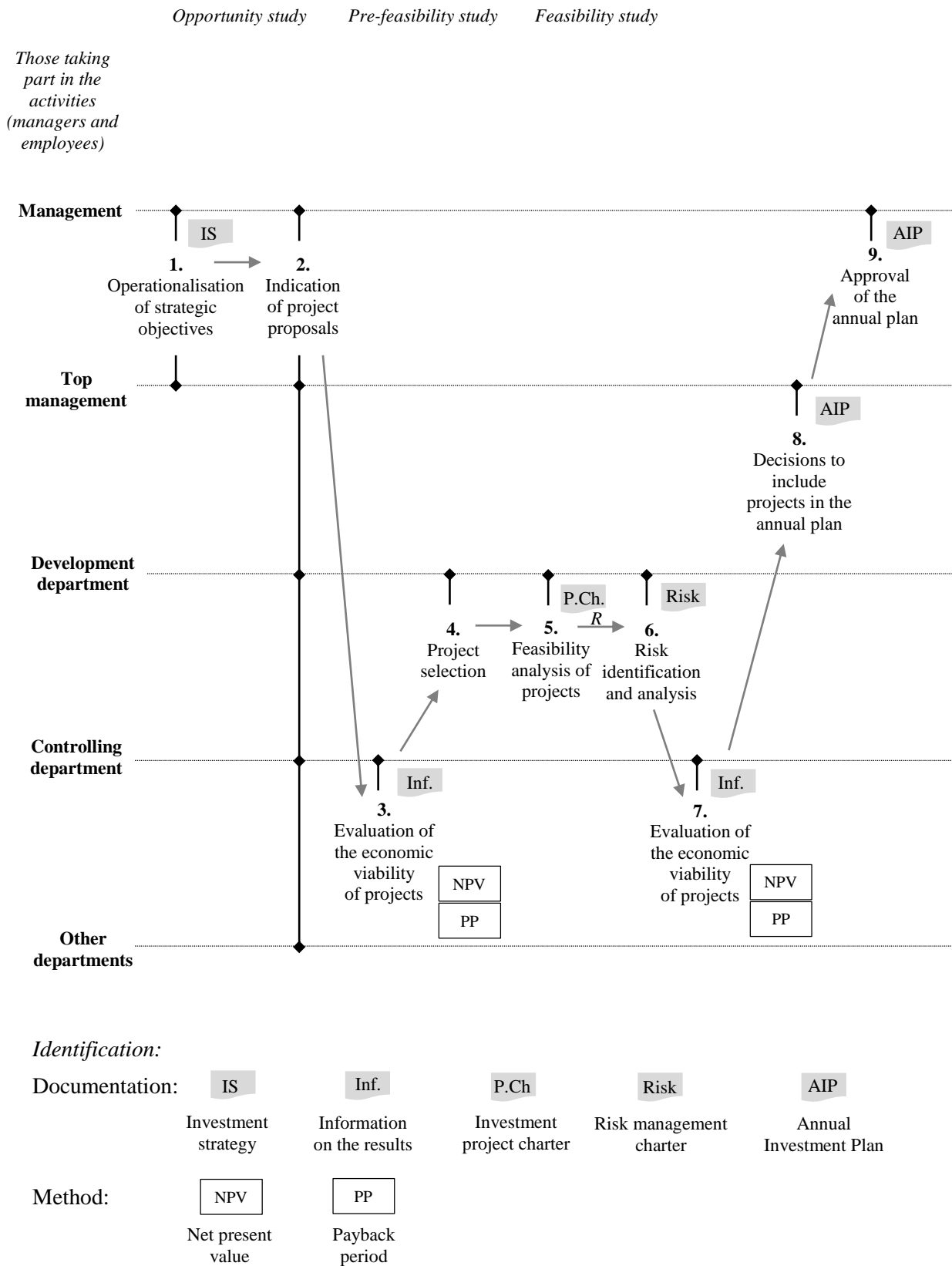


Figure 1. The current course of the investment project planning process in the surveyed company

Source: Own study based on interviews and company documentation.

Table 1.
Breakdown of investment projects in the company

Breakdown criterion	INVESTMENT PROJECTS
Importance of projects	<p style="text-align: center;">STRATEGIC</p> <p>proposed by the Board of Directors and the company's top management, resulting from the adopted investment strategy, i.e. the assumed increase in sales of products, increase in profitability, improvement of product quality, the desire to conquer new markets or the possibility of using new input materials, e.g. the construction of new process lines, the construction of new plants, the modernisation of existing plants.</p>
	<p style="text-align: center;">ADAPTIVE</p> <p>proposed by the Board of Directors and the company's top management, resulting from the need to comply with changing legal requirements, i.e. environmental legislation, by reducing gas and dust emissions, reducing waste generation and improving efficiency.</p>
	<p style="text-align: center;">CURRENT</p> <p>proposed by employees and their direct managers, resulting from the current needs to replace (rebuild) worn-out machinery and equipment, in particular through the purchase of new machinery or the transfer of used machinery from another plant (possible modernisation) and their subsequent installation, as well as those resulting from so-called 'bottom-up' initiatives aimed at solving current problems, e.g. the use of machinery known to the company to melt scrap grades with different characteristics.</p>
Size of projects	<p style="text-align: center;">SMALL</p> <p>requiring financing for investment expenditure < PLN 100 000</p>
	<p style="text-align: center;">AVERAGE</p> <p>requiring financing for investment expenditure > 100 000 PLN < 500 000 PLN</p>
	<p style="text-align: center;">LARGE</p> <p>requiring financing for investment expenditure > PLN 500 000</p>

Source: Own study based on interviews and company documentation.

"Charters..." are prepared by the development department staff, on the basis of feasibility studies (technical, legal, financial, time, efficiency), which are carried out by interdisciplinary teams consisting of managers and staff from departments appropriate to the specifics of the projects (e.g. consisting of the Plant Manager and staff from the development, operations, controlling, quality departments).

Then, once the 'Charters ...' have been developed for all the proposed projects, based on the more detailed information contained therein:

- Controlling staff reassess the economic viability of the proposed projects, using the same methods as in the pre-feasibility study (PP, NPV);
- Development staff for each project produce a document entitled 'Investment project risk management charter' (Table 3).

In summary, the outcome of the feasibility study is the preparation for each project:

- "Investment project charter";
- information on the results of the economic viability assessment (PP or NPV),
- "Investment project risk management charters".

On this basis, top management decides whether to reject individual projects or to include them in the 'Annual Investment Plan', which is approved by the company's Board of Directors.

Table 2.
"Investment project charter" - template and example

Name of the project	... E.g. Modernisation of Plant X	
Project location	... E.g. Plant X, production hall	
Scope of the project	... E.g. Stage 1. Dismantling of equipment to be decommissioned; Stage 2. reconstruction of the technological system - assembly and start-up of production on new production equipment.	
Project deadlines	... E.g. Phase 1. 1-9.III.2023; Phase 2. 10.IV - 28.V.2023	
Project feasibility study	Risks/weaknesses	Opportunities/strengths
Technical feasibility	... E.g. The implementation of the project on the shop floor, while production activities are taking place, may affect its disruption, breakdowns, accidents or the creation of defects in products.	... E.g. The technological layout allows the dismantling of equipment to be decommissioned without interrupting production on the remaining equipment.
Legal enforceability	... E.g. <ul style="list-style-type: none"> ▪ Building Permit required; ▪ Water Law Permit required; ▪ Required adaptation of the Plant to the new BAT Conclusions for the non-ferrous metals industry. 	... E.g. <ul style="list-style-type: none"> ▪ The projected technological layout is well recognised; ▪ The proposed technology is not associated with the generation of hazardous industrial wastewater.
Financial feasibility	... E.g. <ul style="list-style-type: none"> ▪ Disruption to the supply of production equipment in the event of payment bottlenecks; ▪ Variable loan rates - upside risk 	... E.g. <ul style="list-style-type: none"> ▪ Financed with 60% of the company's own funds at its disposal; ▪ The interest on the bank loan will reduce the tax base.
Time feasibility	... E.g. Delays in obtaining the required permits.	... E.g. Employ a company with the capacity to make up for any delays.
Performance feasibility	... E.g. In case of failure, possible loss of production of up to 50 t/day.	... E.g. The capacity of the new line will allow production ahead of schedule.
Recommendation:	... E.g. Project eligible.	
Date of analysis	Compiled by the team	
...	...	

Source: Own study based on company documentation.

Table 3.*"Investment project risk management charter" - template and example*

Context (internal/external)	Risk identification	Risk analysis		Risk response
		Effect of occurrence	Probability of occurrence	
...
<i>E.g.</i>				
Technical infrastructure of the project	Lack of appropriate tools and equipment to carry out certain installation work	Investment project delays; Failure to keep to the project budget	Small, <0.2	Securing the possible rental of tools and equipment

Source: Own study based on company documentation.

In the course of the interviews, the top management emphasised that the way in which investment projects are planned in the company is adequate, in particular for investment projects defined as current and small and adaptation projects. However, for strategic and large projects, the information obtained about their risks is insufficient. It was highlighted that this poses a problem and causes difficulty in deciding whether to include projects in the 'Annual Investment Plan'. In particular, it was pointed out that the most important criterion for the selection of strategic projects for this plan is their positive impact on the growth of the company's value. This means that projects with the highest NPV level are included, but without including information on what the risk of not achieving this level is and what it is due to (what are the main factors of this risk and how they affect the NPV). Meanwhile, such information is very important and should be taken into account in decisions. In addition, executives also pointed out that making rational decisions on the implementation of strategic investment projects would be greatly facilitated by the definition of uniform standards, based on a criterion combining the results of assessing economic efficiency and the risk of not achieving them.

In summary, with regard to the identification of the need, the research found that it concerns supplementing the company's existing approach to planning strategic investment projects with methods and tools aimed at:

- identifying risk factors that have a significant impact on their economic efficiency and indicating this impact,
- assessing the risk of not achieving economic results,
- supporting decision-making on the basis of a criterion combining the results of the economic efficiency evaluation and the risk of not achieving them.

It should be emphasised, the NPV method is used in the planning of investment projects in the company, and the people who apply it are competent. It is well known and understood by:

- controlling staff, who assess the economic viability of projects with it,
- management, who decide on the basis of this to include projects in the 'Annual Investment Plan'.

Therefore, in the selection of methods and tools to meet the identified need, it was assumed that those based on NPV should be included.

In the next step of the stage I of the research, a literature study was conducted. It was oriented towards the identification of methods and tools that would meet a specific need and be adapted to the competences of those using them. Thus, with regard to:

- identification of significant risk factors and an indication of their impact on the economic viability of the project, it was concluded that the use of methods and tools could be considered:
 - ✓ inventive (creative thinking) methods, especially brainstorming, the Delphi method or the analysis of historical event data (their results can be collated in a so-called risk checklist), which allow risk factors to be identified (Kumpiałowska, 2011, p. 51; Borkowski, 2008, pp. 47-49; Liu, Low, 2009, pp. 170-186; Santanen et al., 2004, pp. 167-198; Pritchard, 2002, pp. 89-96; 109-115; 117-123),
 - ✓ quantitative, notably sensitivity, scenario or correlation analysis, which make it possible to indicate the impact of risk factors on NPV (Cabala, 2001, pp. 149-159; Bijańska, Wodarski, 2014, pp. 61; Sierpińska, Jachna, 2007, pp. 512, 516; Bijańska, 2015, pp. 45-46),
- assess the risk of not achieving the economic effects of projects measured by NPV, it has been found that the use of quantitative methods can be considered, especially the probabilistic-statistical method or Monte Carlo simulation (Sobczyk, 2010, pp. 44-62; Borkowski, 2008, pp. 128-129; Wiśniewski, 2013, pp. 65-80; Pawlak, 2012, pp. 83-94; Marcinek et al., 2010, pp. 53-138; Sierpińska, Jachna, 2007, pp. 512-513, 516-518; Sierpińska, Jachna, 2004, pp. 394-401; Zarzecki, 2002, p. 257; Zachorowska, 2006, pp. 74-76, 90-98; Bijańska, Wodarski, 2014, pp. 276-278; Bijańska, 2019, pp. 157-158; 165-176; 177-189),
- support decision-making on the basis of a criterion combining the results of the evaluation of economic efficiency and the risk of not achieving them, the use of quantitative tools can be considered, especially standards based on the results of probabilistic-statistical methods or Monte Carlo simulations (Bijańska, Wodarski, 2014, p. 62).

For the selection of the appropriate ones, their essence was first presented to the top management. Then, taking into account the concept of methodological pluralism and the principle of triangulation³ (Stępień, 2016, pp. 48-62; Stańczyk, 2011, p. 78), it was decided that to:

- identify risk factors that have a significant impact on NPV and brainstorming, sensitivity analysis, scenario analysis methods will be used to indicate this impact,
- assess the risk of not achieving economic outcomes as measured by NPV, a probabilistic-statistical method will be used,

³ Methodological pluralism implies a willingness to use methods and tools derived from different disciplines, with the criteria for their selection being relevance, simplicity, precision. The principle of triangulation boils down to the need to use more methods and tools and to combine quantitative and qualitative methods and tools.

- support decision making a standards tool based on the results of a probabilistic-statistical method will be used, relevant to the realities of the company.

3.2. Results of the stage II of the research

The synthesis of the results obtained from the analysis of the research problem allowed a new procedure to be developed for the company to plan investment projects taking into account risk. The procedure adopted changes to the feasibility study relating to strategic and large-scale projects for which additional analyses and calculations are required. These changes are highlighted in bold (Figure 2).

In the existing way of project planning, after feasibility studies, economic viability assessment and risk identification and analysis, the proposed projects must be divided into two groups. The first should include adaptation and ongoing projects for which no additional analysis and calculations need to be carried out, and the second group should include strategic projects that require it.

It was assumed that, as a first step, a brainstorming exercise should be carried out for each strategic project (in an interdisciplinary, appropriately selected team that participated in the previous analyses), aimed at identifying the risk factors that have a significant impact on the NPV level. The basis for the identification of these factors should be the 'Investment Project Risk Management Charter' and the assumptions made to assess its economic viability using the NPV method. It is important that the factors are measurable, as their level should be indicated, which will be the basis for the NPV sensitivity analysis. The result of this analysis should be knowledge of the impact of specific changes in the level of a given risk factor on the economic efficiency of the project.

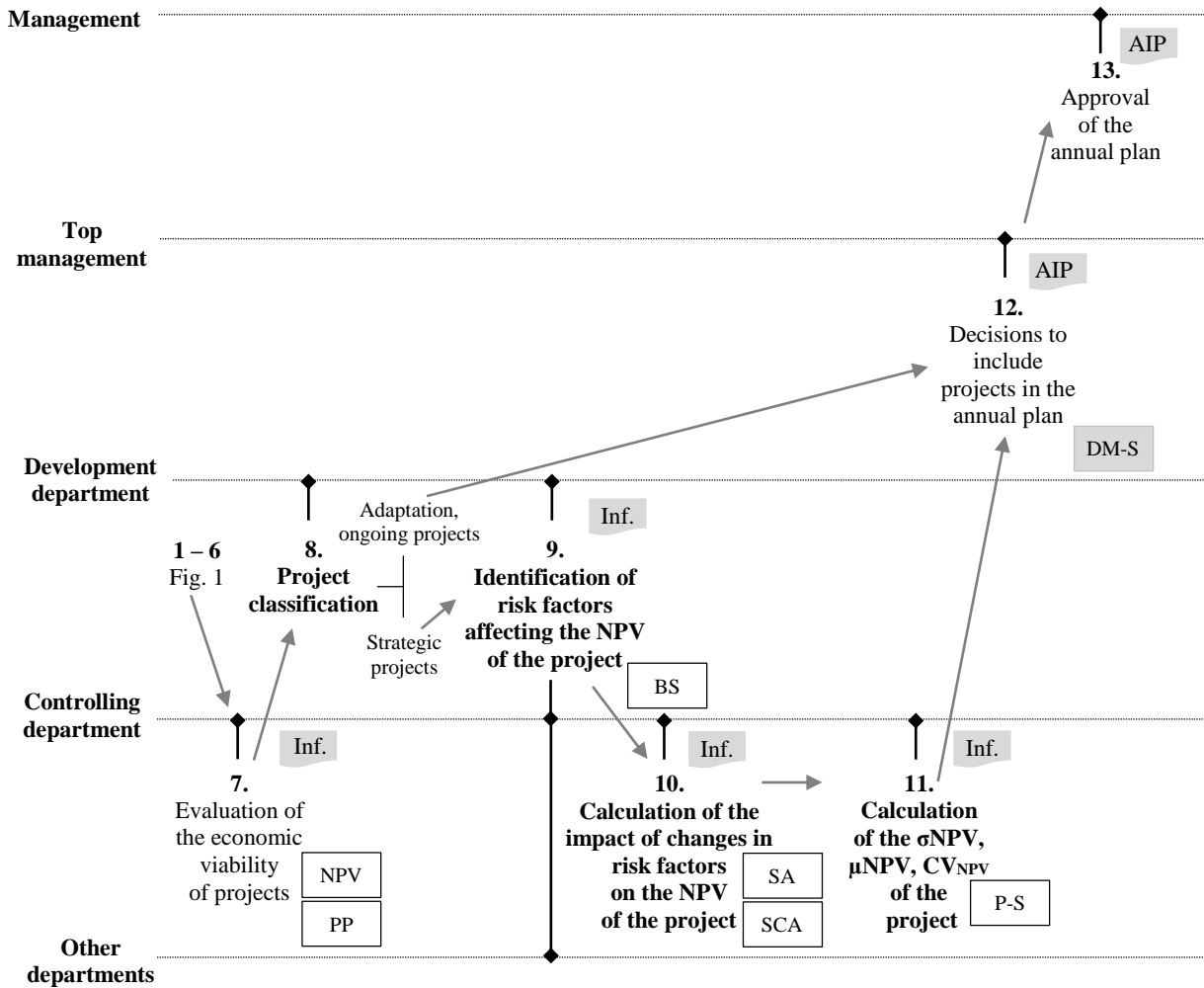
As a second step, a scenario analysis should be carried out, the essence of which is to examine the impact of simultaneous changes (relative to the assumptions used to assess the economic viability of the project using the NPV method, defining the baseline scenario) in all risk factors on the NPV of the project. The procedure assumes that these will be changes defined in two additional scenarios (optimistic and pessimistic), which should be adopted arbitrarily by the company's top management or their designated persons with the relevant competences.

A probabilistic-statistical method should then be used, based on probability calculus and statistical measures, and in particular on:

- the expected net present value μ_{NPV} , which provides information on the average economic effect of the project after taking into account all the scenarios of its implementation and the probability of their occurrence,
- the standard deviation of the net present value σ_{NPV} , which presents information about the risk of not achieving the economic result of the project.

Feasibility study

Those taking part in the activities (managers and employees)



Identification:

Documentation:	Inf.	AIP				
	Information on the results	Annual Investment Plan				
Method:	NPV	PP	BS	SA	SCA	P-S
	Net present value	Payback period	Brainstorming	Sensitivity analysis	Scenario analysis	Probabilistic-statistical method
Tool:	DM-S					
	Decision-making standards					

Figure 2. Investment project planning procedure, taking into account methods and tool for risk assessment and strategic investment decision-making. Own study taking into account interviews and company documentation.

The basis for calculating the statistical measures indicated is the results of the scenario analysis, in particular the values of the project's net cash flows in the baseline, optimistic and pessimistic scenarios. For these, the probability of occurrence should be determined and then the expected net cash flows of the project should be calculated according to the formula:

$$E_{tj} = D_{tj} \cdot P_{tj}, \quad (1)$$

where:

E_{tj} – i -th level of expected net cash flows at time unit $t = 1, \dots, n$,

D_{tj} – i -th level of net cash flow in time unit $t = 1, 2, \dots, n$,

P_{tj} – probability of occurrence of i - this level of D_t .

Subsequently, the expected value of the net cash flows for each unit of time should be determined according to the formula:

$$E_t = \sum_{j=1}^u D_{tj} \cdot P_{tj}, \quad (2)$$

where:

E_t - expected value of net cash flows at time unit $t = 1, 2, \dots, n$,

u - number of D_t levels tested,

other designations as above.

Then, calculate:

- the expected net present value, according to the formula:

$$\mu NPV = \sum_{t=1}^n \frac{E_t}{(1+i)^t} \quad (3)$$

where:

μNPV - expected net present value,

i - discount rate, other designations as above,

- the standard deviation of the net present value, according to the formula:

$$\sigma NPV = \sqrt{\sum_{t=1}^n \frac{\sigma_t^2}{(1+i)^{2t}}}, \quad (4)$$

where:

σNPV - standard deviation of the net present value,

σ_t^2 - cash flow variance determined from the formula:

$$\sigma_t^2 = (D_{tj} - E_t)^2 \cdot P_{tj}. \quad (5)$$

The information obtained in terms of μNPV and σNPV supports risk assessment and rational decision-making for the implementation of investment projects, on the basis of the developed standards (Table 5), based on the NPV coefficient of variation, which is calculated according to the formula:

$$CV_{NPV} = \frac{\sigma NPV}{\mu NPV} \quad (6)$$

where:

CV_{NPV} - coefficient of variation of net present value,
other designations as above.

It was assumed that the CV_{NPV} ranges corresponding to the risk assessment and specific decisions should be set arbitrarily for a given year by top management, appropriate to the company's situation.

Table 5.

Decision-making standards - formula and example

CV_{NPV} level	Risk assessment	DECISION
... E.g. 0.1 - 1.5	Small, acceptable risk	IMPLEMENTATION and risk monitoring
... E.g. 1.6 - 2.9	Medium acceptable risk	ADJOURNMENT for risk prevention
... E.g. > 3.0	Large, unacceptable risks	DISCONTINUANCE to avoid risks

Source: Own study taking into account the interviews.

A decision defined in the standards as:

- IMPLEMENTATION means the inclusion of the project in the 'Annual Investment Plan' and its execution in accordance with the developed documentation, while monitoring the risk factors,
- ADJOURNMENT means going back to the analyses and revisiting the considerations aimed at determining additional preventive actions or waiting for conditions to change, which will either alleviate negative impacts or reduce the likelihood of risk factors,
- DISCONTINUANCE means rejection of the project and any further work related to it.

In order to verify the usefulness of the developed procedure, a case study was carried out, referring to the 'Automated aluminium scrap sorting line' project planned in the company, with the required investment outlays at the level of PLN 79 million. According to the opinion of experts and representatives of aluminium recycling companies, the line being the subject of the project would be the most technically advanced in Europe.

The main objective of the project is to improve the quality of the furnace charge by automating the sorting processes for aluminium scrap. Due to the desire to gain a competitive advantage as a result of implementing the project, the publication did not present an 'Investment Project Charter', containing a detailed description of the feasibility studies. As the recommendations gave a positive opinion on the implementation of the project, the controlling staff carried out an assessment of its economic efficiency (Table 6). In it, they assumed appropriate levels of net financial performance shaping elements⁴, a capital expenditure, an 8-year calculation period and a discount rate of 7.5%, derived from the cost of equity capital assumed to finance the project. The calculations show that the NPV of the project is PLN 17,322.5k, which means that it is economically efficient.

Table 6.

Synthetic summary of calculations for assessing the economic viability of the project

Elements of the assessment	Units of the calculation period, years							
	1	2	3	4	5	6	7	8
Net financial result [k PLN]	5 524.2	5 524.2	5 524.2	5 524.2	5 726.7	5 726.7	5 726.7	5 726.7
Investment expenditure [k PLN]	79 000.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adjustment of depreciation expense [k PLN].	10 000.0	10 000.0	10 000.0	10 000.0	9 750.0	9 750.0	9 750.0	9 750.0
Net cash flow [k PLN]	-63 475.8	15 524.2	15 524.2	15 524.2	15 476.7	15 476.7	15 476.7	15 476.7
Discount factor	0.9302	0.8653	0.8050	0.7488	0.6966	0.6480	0.6028	0.5607
Discounted net cash flows [k PLN]	-59 047.3	13 433.6	12 496.4	11 624.5	10 780.4	10 028.3	9 328.7	8 677.8
NPV [k PLN]	-59 047.3	-45 613.7	-33 117.3	-21 492.8	-10 712.3	-684.0	8 644.6	17 322.5

Source: Own study based on company data.

To complete the information on this project, a brainstorming exercise was then conducted aimed at identifying risk factors relevant to the economic viability of the project, as well as their current level (Table 7).

Table 7.

Risk factors affecting the economic viability of the project

Risk factor	Current level
Fastmarkets MB - prices/aluminium alloys 226 [PLN/t]	10 600
Cost of electricity [PLN]	450
Transport cost [PLN/t]	230
Scrap acquisition cost [EUR/t]	7 375
Salary costs [k PLN]	350
Sales volume [t]	7 000
Investment expenditure [k PLN]	79 000

Source: Own study based on company data.

A sensitivity analysis of NPV was then carried out, with an assumed +/- 30% variation in the development of individual risk factors. The results made it possible to identify the factors with the greatest impact on the development of NPV (Table 8).

⁴ Prices, sales volumes, fixed and variable costs, tax.

Table 8.*Sensitivity analysis of NPV to changes in project risk factors*

Risk/change factors	NPV as a result of changes in individual risk factors by assumed % level, [k PLN]						
	-30%	-20%	-10%	0%	+10%	+20%	+30%
Fastmarkets MB - prices	-105 352.1	-61 890.9	-18 429.7	17 322.5	52 526.0	87 729.6	122 933.1
Cost per kWh of electricity	23 419.0	21 829.6	20 240.3	17 322.5	17 061.5	15 472.1	13 882.7
Transport costs	20 985.1	20 207.1	19 429.0	17 322.5	17 872.8	17 094.7	16 316.6
Cost of acquiring scrap metal	92 122.9	67 632.2	43 141.6	17 322.5	-5 839.8	-33 799.3	-64 034.7
Cost of salaries	17 820.6	17 654.6	17 488.5	17 322.5	17 156.4	16 990.3	16 824.3
Sales volumes	-7 585.7	717.0	9 019.7	17 322.5	25 625.2	33 927.9	42 230.6
Investment expenditure	17 553.8	17 476.7	17 399.6	17 322.5	17 245.3	17 168.2	17 091.1

Source: Own study.

The biggest influences (changes > 5 million PLN) on the NPV are, in turn, the Fastmarkets MB price quotations for aluminium alloys 226, the product that will be sold as a result of the project, the average acquisition cost of scrap and the sales volume. If a decision is made to go ahead with this project, the manager who will manage it must pay attention to these factors. The price quotations for aluminium alloys and the average acquisition cost of scrap are of particular importance, as unfavourable (yet small) changes in their development result in a loss of economic efficiency of the project and large losses with a negative impact on the value of the company.

Further, for the scenario analysis, possible changes in the development of specific risk factors affecting the NPV were estimated. Both historical and forecast data were used. It was assumed that favourable changes in the development of these factors define the optimistic scenario, while unfavourable changes define the pessimistic scenario (Table 9).

Table 9.*Level of risk factors in project scenarios*

Risk factors	Scenario		
	optimistic	base	pessimistic
Fastmarkets MB - prices / aluminium alloys 226 [PLN/t]	13 780	10 600	6 220
Cost per kWh of electricity [PLN]	150	450	1 350
Transport cost [PLN/t]	185	230	460
Scrap acquisition cost [PLN/t]	5 530	7 375	8 850
Salary costs [k PLN]	245	350	420
Sales volume [t]	9 940	7 000	5 040
Investment expenditure [k PLN]	75 100	79 000	83 000

Source: Own study based on company data.

An assessment of the economic viability was carried out for the assumptions thus made in the development of the risk factors. If the project had been implemented under the conditions:

- optimistic scenario, the NPV would be PLN 156,098.0k, which means that it would be economically efficient (Table 10),
- pessimistic scenario, the NPV would be PLN -116,649.61k, meaning that it would be economically inefficient (Table 11).

Table 10.

Synthetic summary of calculations for assessing the economic viability of the project in the optimistic scenario

Elements of the assessment	Units of the calculation period, years							
	1	2	3	4	5	6	7	8
Net financial result [k PLN]	29 087.6	29 086.8	29 086.0	29 085.2	29 286.8	29 286.0	29 285.2	29 284.4
Investment expenditure [k PLN]	75 100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adjustment of depreciation expense [k PLN]	9 512.5	9 512.5	9 512.5	9 512.5	9 262.5	9 262.5	9 262.5	9 262.5
Net cash flow [k PLN]	-36 499.9	38 599.3	38 598.5	38 597.7	38 549.3	38 548.5	38 547.7	38 546.9
Discount factor	0.9302	0.8653	0.8050	0.7488	0.6966	0.6480	0.6028	0.5607
Discounted net cash flows [k PLN]	-33 953.4	33 401.2	31 070.2	28 901.9	26 851.9	24 978.0	23 234.8	21 613.3
NPV [k PLN]	-33 953.4	-552.2	30 518.0	59 420.0	86 271.9	111 249.8	134 484.7	156 098.0

Source: Own study.

Table 11.

Synthetic summary of calculations for assessing the economic viability of the project in the pessimistic scenario

Elements of the assessment	Units of the calculation period, years							
	1	2	3	4	5	6	7	8
Net financial result [k PLN]	-17 236.9	-17 236.9	-17 236.9	-17 236.9	-16 986.9	-16 986.9	-16 986.9	-16 986.9
Investment expenditure [k PLN]	82 900.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adjustment of depreciation expense [k PLN]	10 487.5	10 487.5	10 487.5	10 487.5	10 237.5	10 237.5	10 237.5	10 237.5
Net cash flow [k PLN]	-89 649.4	-6 749.4	-6 749.4	-6 749.4	-6 749.4	-6 749.4	-6 749.4	-6 749.4
Discount factor	0.9302	0.8653	0.8050	0.7488	0.6966	0.6480	0.6028	0.5607
Discounted net cash flows [k PLN]	-83 394.8	-5 840.5	-5 433.0	-5 054.0	-4 701.4	-4 373.4	-4 068.2	-3 784.4
NPV [k PLN]	-83 394.8	-89 235.3	-94 668.3	-99 722.2	-104 423.6	-108 796.9	-112 865.2	-116 649.6

Source: Own study.

The probability of these scenarios was assumed to be 0.15 and the baseline scenario 0.7. This allowed calculations to be carried out that were geared towards indicating μ NPV, σ NPV and CV_{NPV} (Table 12).

Table 12.

Synthetic summary of project risk assessment calculations

Elements of the assessment	Units of the calculation period, years								
	1	2	3	4	5	6	7	8	
Expected net cash flows of the scenarios [k PLN]	opt	-5 475.0	5 789.9	5 789.8	5 789.6	5 782.4	5 782.3	5 782.2	5 782.0
	base	-44 433.1	10 866.9	10 866.9	10 866.9	10 833.7	10 833.7	10 833.7	10 833.7
	pes	-13 447.4	-1 012.4	-1 012.4	-1 012.4	-1 012.4	-1 012.4	-1 012.4	-1 012.4
Expected net cash flow [k PLN]	-63 355.5	15 644.4	15 644.3	15 644.2	15 603.7	15 603.6	15 603.4	15 603.3	
Discounted expected net cash flows [k PLN]	-58 935.3	13 537.6	12 593.0	11 714.4	10 868.9	10 110.5	9 405.0	8 748.8	
μ NPV [k PLN]								18 042.98	

Cont. table 12.

Variation of scenarios [k PLN]	opt	108 183 029.3	79 038 802.5	79 034 061.2	79 029 320.1	78 975 525.1	78 970 785.8	78 966 046.6	78 961 307.5
	base	10 137.7	10 117.2	10 096.8	10 076.4	11 287.1	11 265.5	11 243.9	11 222.4
	pes	103 705 715.0	75 222 485.5	75 221 669.3	75 220 853.0	74 949 040.6	74 948 225.8	74 947 411.0	74 946 596.3
Variation [k PLN]			211 898 882.0	154 271 405.2	154 265 827.3	154 260 249.5	153 935 852.8	153 930 277.1	153 924 701.5
σ NPV [k PLN]									26 999.3
CVNPV									1.5

Own study.

Assuming that certain decision-making norms based on CV_{NPV} (Table 5) would be adopted in the company, the calculations obtained allow the conclusion that the project has low risk and can be implemented in accordance with the developed documentation (with simultaneous monitoring of risk factors), i.e. a decision can be taken to include it in the "Annual Investment Plan".

4. Discussion

After reading the considerations of the procedure developed, especially the methods and tool that complement it with the risk assessment aspect of strategic projects, it can be debated that they are based on an abstractly mapped reality and ignore many phenomena that may occur. In particular, with regard to:

- brainstorming methods, it is possible to discuss, among other things, whether it is too subjective, whether those taking part have the right knowledge and experience, whether they have prepared properly,
- methods of sensitivity analysis, it is possible to discuss, among other things, the validity of assuming changes in the development of only one risk factor from the value assumed in the baseline scenario, with the value of the other factors remaining unchanged, as they can change simultaneously,
- methods of scenario analysis, it is possible to discuss, among other things, about assuming unidirectional changes in the development of risk factors (respectively favourable in an optimistic scenario and unfavourable in a pessimistic scenario), which is hardly realistic in reality,
- probabilistic-statistical method, it is possible to discuss, among other things, about the way in which the probability of scenarios is determined, or the number of scenarios, which is small,
- tools in the form of decision standards, it is possible to discuss, among other things, about the arbitrary setting of the CVNPV level, which determines the risk assessment and indicates the corresponding decision.

The authors are aware of these problems and that other approaches, such as the Delphi method or Monte Carlo simulation, could have been used to obtain a broader context of the phenomenon under study and more accurate results. However, these were found to be more difficult, time- and capital-intensive, which could discourage their use. Therefore, it was considered, due to the selection criteria adopted (derived from the concept of methodological pluralism and the principle of triangulation), that the methods and tool included in the procedure were characterised as sufficient:

- relevance, which means that the methods and tools chosen are tailored to the needs of the specific company, taking into account the methods already in use,
- simplicity, meaning the selection of methods and tools appropriate to the competences of those who will use them, without the need for specialised external bodies,
- precision, meaning the selection of methods and tools that provide unambiguous, well- defined results to support rational decision-making.

As part of the discussion, the question can also be formulated whether the developed procedure has a generalised character and can be used by other companies? According to the Authors of the publication, yes, but after it has been adapted to their specifics, e.g. staff resources, their competences (which affects the correctness of the use of the methods), or the financial situation, the projects implemented so far and their risks (which affects the decision-making standards).

5. Summary

The results of the considerations presented in the publication were aimed at solving the research problem, defined as the selection of appropriate methods and tools for risk assessment, the results of the application of which may constitute criteria for making decisions on the implementation of investment projects of a strategic nature in a production enterprise, which is the largest producer of secondary aluminium casting alloys in Central Europe. On the basis of the conducted research, including the analysis of the research problem and the synthesis of the results obtained within its framework, it was possible to develop a procedure for planning investment projects taking into account risk, adapted to this specificity of this enterprise, aimed at making rational strategic decisions. Verification of the usefulness of the developed procedure in the course of the case study makes it possible to conclude that the selected methods and tools are appropriate, meet the identified need and are adapted to the competences of those who are to use them to assess the risks of strategic investment projects and make rational decisions about their implementation.

Although, as mentioned in the discussion, the selected methods and tools for risk assessment, are based on an abstractly mapped reality, given the criteria adopted for their selection, it can be concluded that they are characterised by sufficient relevance, simplicity and precision. Furthermore, in the authors' opinion, their logical combination into a single whole provides a solution aimed at risk assessment and investment decision-making that may also suit the needs of other companies.

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BIBLIOMETRIC ANALYSIS OF THE CURRENT STATE OF RESEARCH IN THE FIELD OF ENERGY CLUSTERS AT THE INTERNATIONAL LEVEL

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Introduction: At each stage of the research development cycle for a specific discipline or sub discipline, taking into account the global nature of the knowledge dissemination process and the dynamics of change, researchers ask themselves questions about potential areas of research, the degree of intensity of research conducted so far, leading research centers and scientists in a given research field. Bibliometric is a tool that allows to answer the above questions. The bibliometric analysis allows us to discover the current state of a research field, identify the principal authors, articles, and topics, and propose future research lines to develop it further.

Aim of the paper: The aims of the article is to present the results of bibliometric analysis of scientific research on issues of energy cluster, published between 1914 and 2022 in the Web of Science Core Collection and Scopus database.

Materials and methods: The articles were analyzed quantitatively, and by word and author co-occurrence. The author also showed in the paper among other things: documents per years by sources, documents by country or territory, the most popular publishers, document types or years with the highest number of published papers on energy clusters. Keywords analysis of bibliometric data indexed in this two databases is the main research method applied to conduct the study. The method of systematic literature review is used to outline the theoretical background of the study.

Results and conclusions: This study shows that interest in energy clusters has been growing steadily over the years in many scientific fields. Conducted bibliometric analysis has shown that the greatest interest, where energy clusters gain importance, are scientific articles (almost 80%), in which the Journal of Chemical Physics has a clear advantage. The analysis in the future should be expanded to include additional indicators. Therefore, the presented analysis is preliminary and should be the subject of further research.

Keywords: bibliometric method, energy cluster, research, Scopus, Web of Science Core Collection.

1. Introduction

Given the global nature of the knowledge dissemination process and the dynamics of change, at each stage of the research development cycle for a specific discipline or sub-discipline, researchers ask themselves questions about potential areas of research and the degree of its intensity. Bibliometrics is a tool that helps to answer the above questions. It is a set of research techniques for the quantitative analysis of publications, including scientific publications and patent documents.

The purpose of the article is to present the results of bibliometric analysis on the issue of energy cluster. The presentation of the results of the analysis focuses on scientific publications on energy cluster in 1914-2022 in one of the largest world scientific bases, i.e. Web of Science Core Collection and Scopus. Keyword analysis of bibliometric data indexed in this database is the main research method used to conduct research. Articles published in 1914-2022 were analysed quantitatively and according to the co-occurrence of words and authors. Further analysis allowed the identification of leading research centers publishing articles on energy cluster and selected key authors dealing with the studied subject. The work also analyses the period in which energy cluster topics were most popular and the areas that most often relate to the studied issue. The Web of Science Core Collection and Scopus databases also allowed to point out the type of publication and specific titles of publishers with the largest number of publications with the keyword energy cluster. The first part of the paper describes the research method from a theoretical perspective.

2. Methodology

Bibliometrics is a set of research techniques used for quantitative analysis of publications, including scientific publications and patent documents (Klincewicz, Zemigala, 2012). Bibliometric analysis also assumes the quantification of documentary information streams and the use of quantitative indicators of various databases reflecting the state of science or its specific fields (Marszakowa-Szajkiewicz, 2009). Bibliometrics or, more broadly, scientometrics, can also be treated as a separate research discipline in scientometrics, dealing with research into the development of science as an information process. Typical practical applications of bibliometrics include analysis of research and development activities, performed due to the needs of persons managing entities in the R&D sector and formulating scientific or innovation policy (Klincewicz, Zemigala, 2012). Figure 1 shows the types of issue discussed.

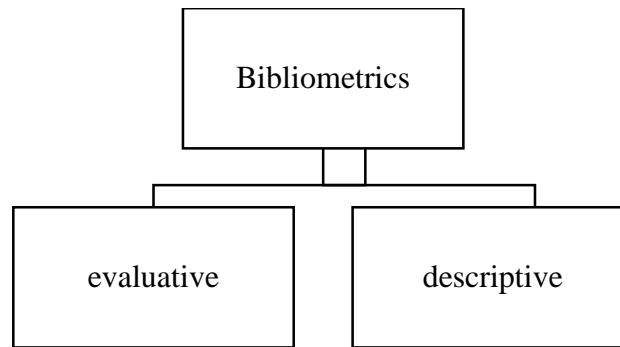


Figure 1. Types of bibliometrics. Adapted from: “*Bibliometrics in technology management and research.*” by K. Klincewicz, M. Zemigala, M. Mijal (2012), Ministry of Science and Higher Education, Warsaw, p. 14.

Evaluative bibliometrics focuses on the assessment of research centers or selected researchers and is based primarily on indexes of study citations. Descriptive bibliometrics is used in the analysis of trends published in scientific research, identification of relevant researchers or research centers (Zemigala, 2014).

Bibliometric analysis uses bibliographic indicators to analyze the most critical literature in a particular field of research (Santos et al., 2011). Bibliometric analysis allows to discover the current state of the research field, identify the main authors, articles and topics, and propose future research directions for its further development (González-Serrano et al., 2020). In bibliometric and scientometric research, great importance is attached to the analysis of networks, for example documents, keywords, authors or magazines (Franceschini et al., 2016; Albareda, Hajikhani, 2019). Clustering and mapping techniques are often used to study such networks (Bartolacci et al., 2020). The purpose of these techniques is to provide insight into the network structure. These techniques are helpful in finding answers to the questions (Waltman et al., 2010):

- What are the main topics or main research fields within a certain scientific area?
- How do these topics or areas relate to each other?
- How has a particular scientific field developed over the years?

The most important advantages of bibliometric analysis include (Ejdys, 2016):

- Obtained results are simple to interpret.
- They present quantitative data that is precise and consistent.
- They allow testing of both small and very large data sets.
- They are non-invasive – they can be made repeatedly based on available bases.
- They are based on publications and citations.
- They have a small interval between the time of conducting analysis and receiving their results.
- They allow analysis to be carried out by persons not involved in the research (Klincewicz et al., 2012).

This article includes bibliometric analysis of information on scientific publications from 1914-2022 (as of November 25, 2022) available in one of the largest scientific publications in the world in terms of the number of scientific databases, i.e. Web of Science Core Collection and Scopus. The study analyses all articles published in the index of Web of Science Core Collection™ (SSCI, SCI-Expanded, A & HCI, CPCI-S, CPCI-SSH, BKCI-S, BKCI-SSH and ESCI) on the subject of energy cluster in all available areas. The data from Web of Science Core Collection were compared with data from Scopus because there are some of the most accepted databases for collecting and analysing scientific articles.

The article uses descriptive bibliometrics. Scientific publications were searched for in the subject line, which includes the abstract, title, keywords of authors and keywords suggested by the database. The search word was energy cluster. The conclusions resulting from the analysis should be treated with great caution and the following analysis should be seen as one of the possible perspectives of researching scientific activity on energy cluster and should be supplemented with a more detailed analysis of data from both the Web of Science Core Collection, Scopus and other available, recognized world bases.

The analysis focused on data on scientific activity and related indicators, such as the number of scientific publications in individual years, the most popular areas in which publications on energy cluster were noted, type of publication and the most frequently appearing titles, authors of publications and centers that most often publish energy cluster-related materials. The article attempts to apply bibliometric analyzes to the concept of energy cluster and discusses the main limitations associated with conducting this type of analysis.

3. Results

3.1. Web of Science Core Collection

The Web of Science Core Collection database lists a total of 210,771 scientific papers related to the term "Energy cluster". Narrowing the search to Author keywords or title or abstract, 104 736 results were obtained. The database shows that the dominant form of presentation is the article (87 334 articles), proceedings papers (20 745), review articles (2554 works) and early access - 492. In the Web of Science Core Collection database there are also other types of publications such as chapters in books, editorials, notes, discussions, etc., but their number is small. Figure 2 presents the most popular publication types for the studied concept.



Figure 2. Document types.

Adapted from: “Web of Sciece”.

Considering the areas in which the above-mentioned papers were most frequently published, according to the Web of Science Core Collection division, the most frequent areas include:

- Chemistry Physical.
- Physics Atomic Molecular Chemical.
- Materials Science Multidisciplinary.
- Physics Applied.
- Enineering Electrical.
- Physics Condensed Matter.
- Astronomy.
- Computer Science.

When performing a bibliometric analysis of the term energy cluster, it is also worth taking a detailed look at how interest in this area has evolved over the years. Figure 3 presents the development of the term energy cluster between 1998 and 2022.

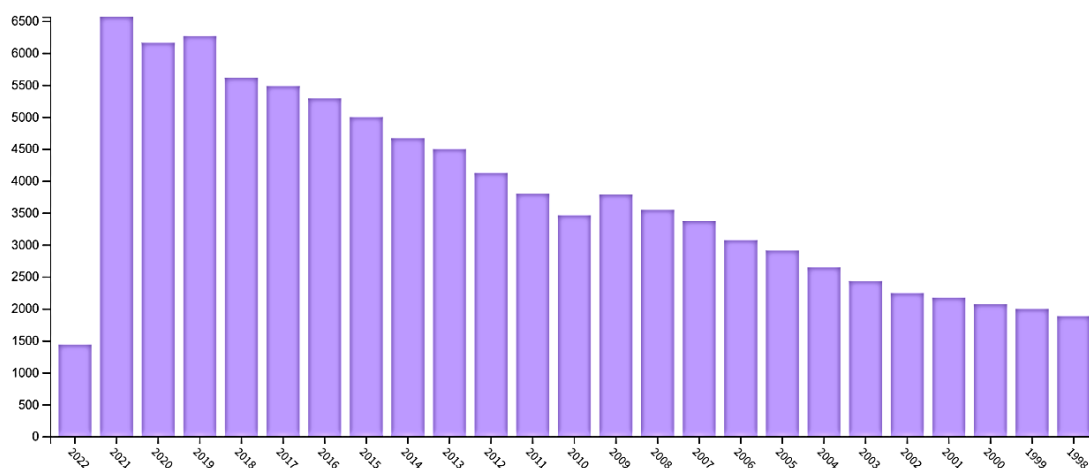


Figure 3. Publication years.

Adapted from: “Web of Sciece”.

According to Figure 3, we can observe an upward trend. In the following analyzed years, the number of publications related to the concept of Energy cluster is constantly increasing. Since 1991 the number of articles has exceeded 1000, since 2000 – 2000 works, 2006 – 3000 works, 2012 – 4000 works, 2016 – 5000, 2019 – 6000 works. Thus, it can be concluded that the researched topic has a great and not waning interest among researchers. In the following years, the continuing trend proves the timeliness of the concept of Energy cluster in the world science, especially in the field of chemistry and physics.

Publications related to the Energy cluster are most often published by publishing houses such as: Elsevier (over 20 thousand publications), Amer Chemical Soc (over 10 thousand publications), Springer Nature, IEEE, AMER Inst Physics. The detailed characteristics of the 20 most popular publications along with the number of publications are presented in Figure 4.

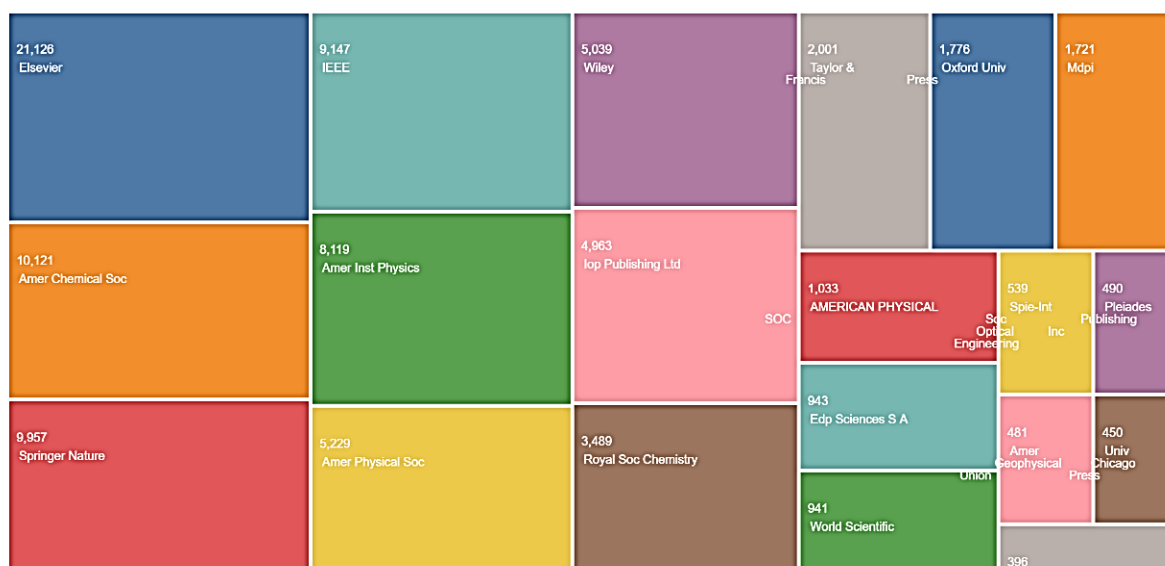


Figure 4. Publishers.

Adapted from: “Web of Sciece”.

Considering the journals in which authors most often publish articles related to energy cluster, we can distinguish:

- Journal of Chemical Physics – 5755 articles.
- Physical Review – 2934 articles.
- Journal of Physical Chemistry – 2794 articles.
- Physical Chemistry – 1715 articles.
- Astrophysical Journal – 1580 articles.

The largest number of authors are from research centers in the USA, Peoples R China, Germany, Japan, India, France, England and Spain. Analyzing the individual scientific achievements in the field of Energy cluster, several prominent authors can be identified: Zhang Y with 450 publications, Wang Y with 389 publications, Wang J with 346 publications, Li Y with 318 publications, and Li J and Zhang J with 318 publications each. The detailed characteristics of the authors who most frequently undertook Energy cluster papers along with the number of publications are presented in Figure 5.

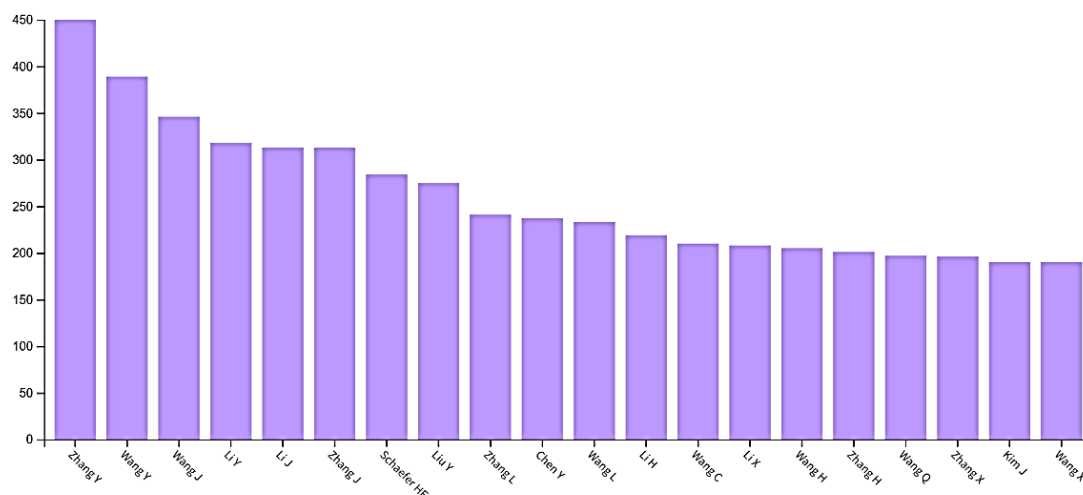


Figure 5. Authors.

Adapted from: “Web of Sciece”.

3.2. Scopus

The Scopus database yielded 907,444 papers related to the term energy cluster, which is more than 4 times higher than the results from the Web of Science Core Collection database. As in the case of the first analysis, also in the Scopus database, the search was limited to a few categories, namely Author keywords or title or abstract. The total number of results obtained was 125 210. When analyzing the types of publications, the vast majority, nearly 80%, are articles. This is followed by Conference Papers - 16.6%. Types of all publications along with their percentage share are presented in Figure 6.

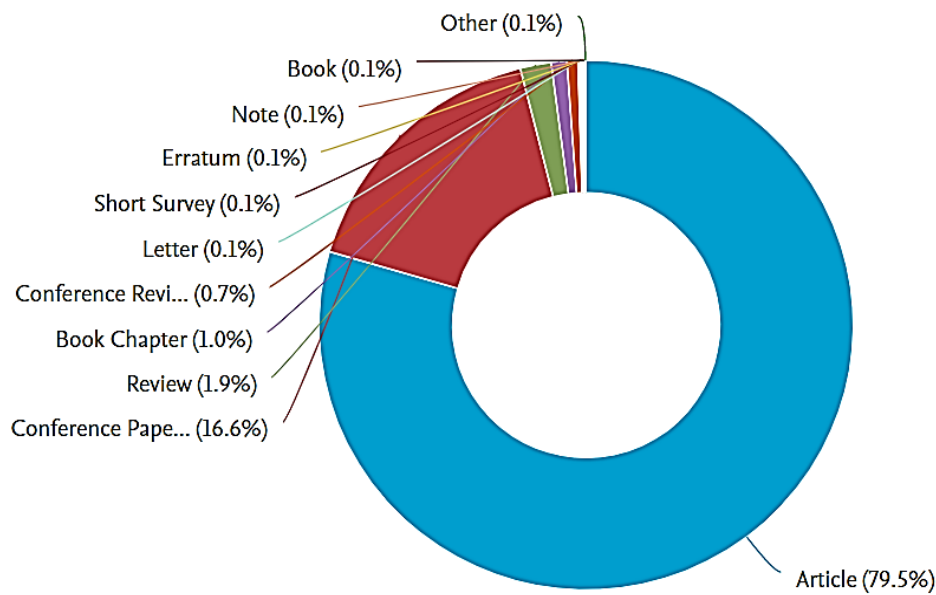


Figure 6. Document types.

Adapted from: “Scopus”.

Considering the countries where the authors were most likely to publish papers on the Energy cluster concept similarly to the first analysis, these countries include mainly: the USA (over 32 thousand publications), China (over 20 thousand publications), Germany, India, Japan, United Kingdom, France. Figure 7 shows the 10 most active countries along with the number of publications.

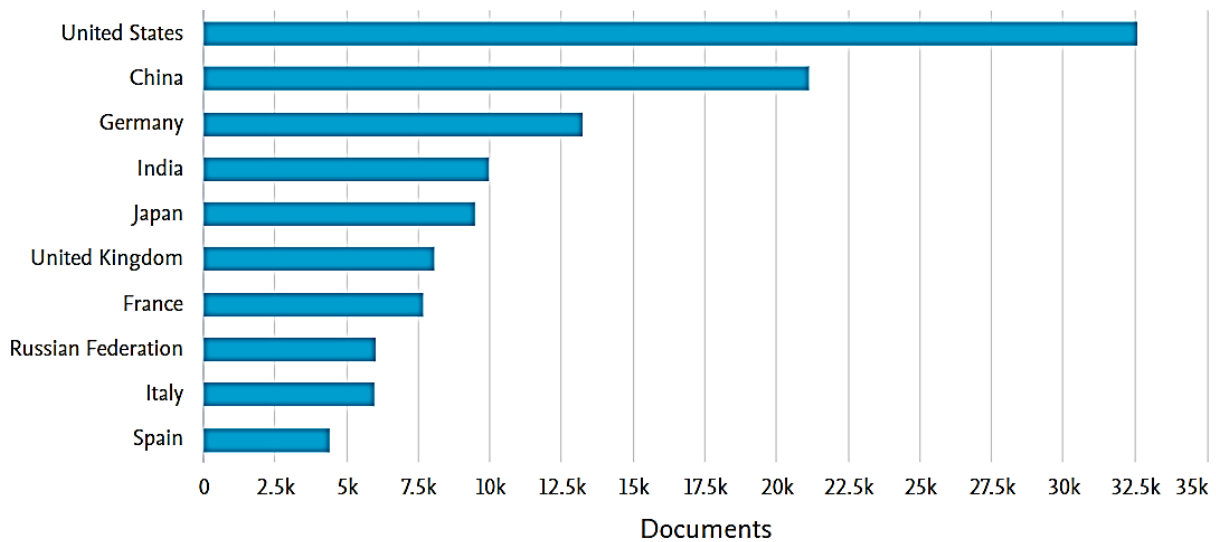


Figure 7. Documents by country or territory.

Adapted from: “Scopus”.

The most published areas were Physics and Astronomy (60,221 papers), Chemistry (40,460 papers), Materials Science (27,211 papers), Engineering (25,263 papers), and Computer Science (20,584 papers). Figure 8 shows the percentage of top areas in which Energy cluster papers were produced.

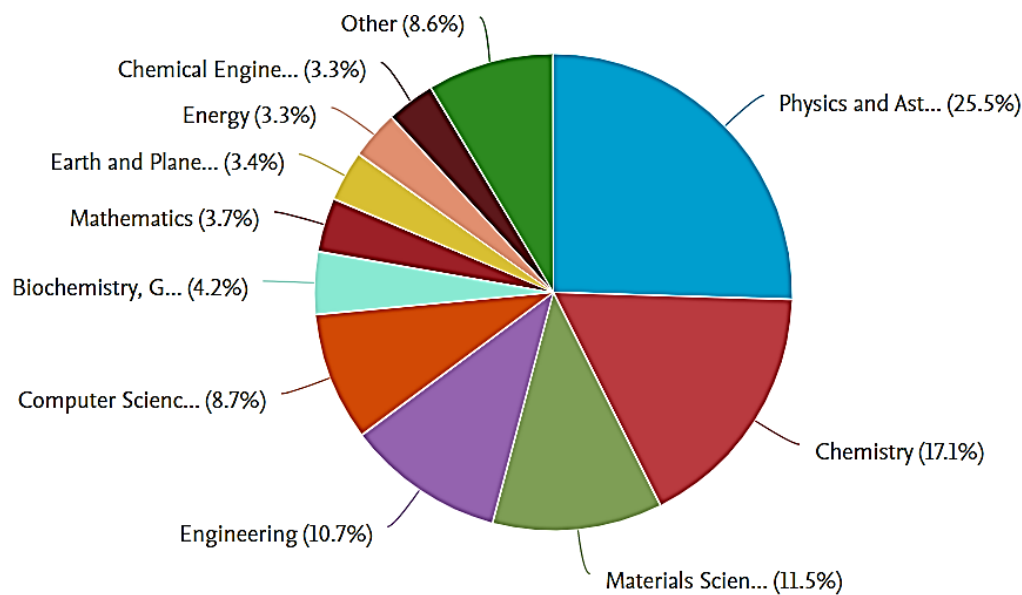


Figure 8. Document by subject area.

Adapted from: “Scopus”.

Comparing the results obtained from both databases, one can notice differences in the authors of individual publications. Figure 9 presents the authors who have most frequently published works on energy cluster according to the Scopus database. The authors with the most frequent publications include: Schaefer H.F. (328 publications), Bartlett R.J. (251 publications), Yamada I. (187 publications), Dixon D.A. (162 publications), Wales D.J. (158 publications).

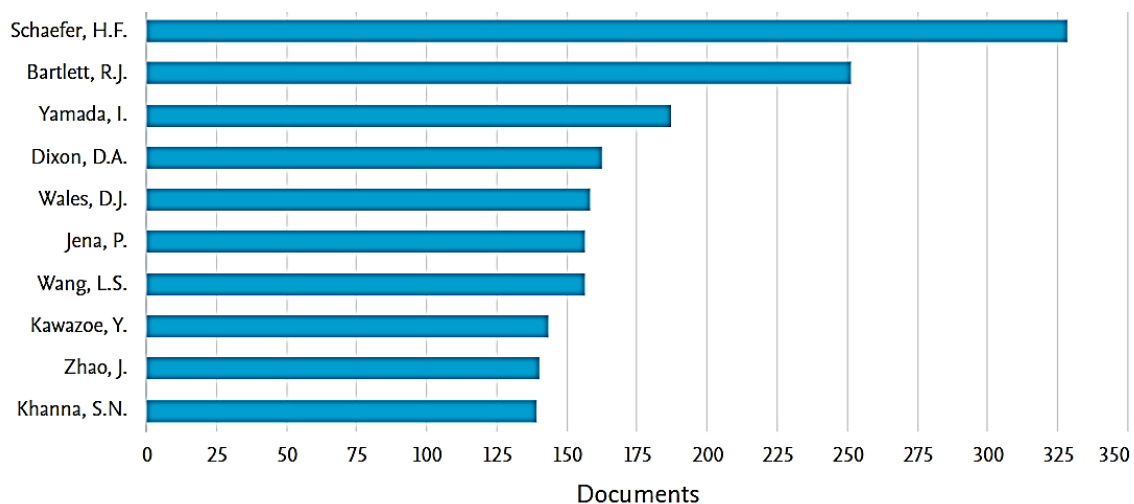


Figure 9. Document by author.

Adapted from: “Scopus”.

The highest number of publications was in 2021 - 7146 scientific papers. According to Figure 10, the data in Figure 3 were confirmed, namely the trend of publications is increasing. In 2014, the number of publications exceeded 5 thousand. In the last decade, a great interest in the Energy cluster topic can be observed. This is certainly related to the development of the main objectives of the energy cluster, i.e. ensuring local energy security, improving the local environment and increasing the competitiveness and economic efficiency of the local economy.

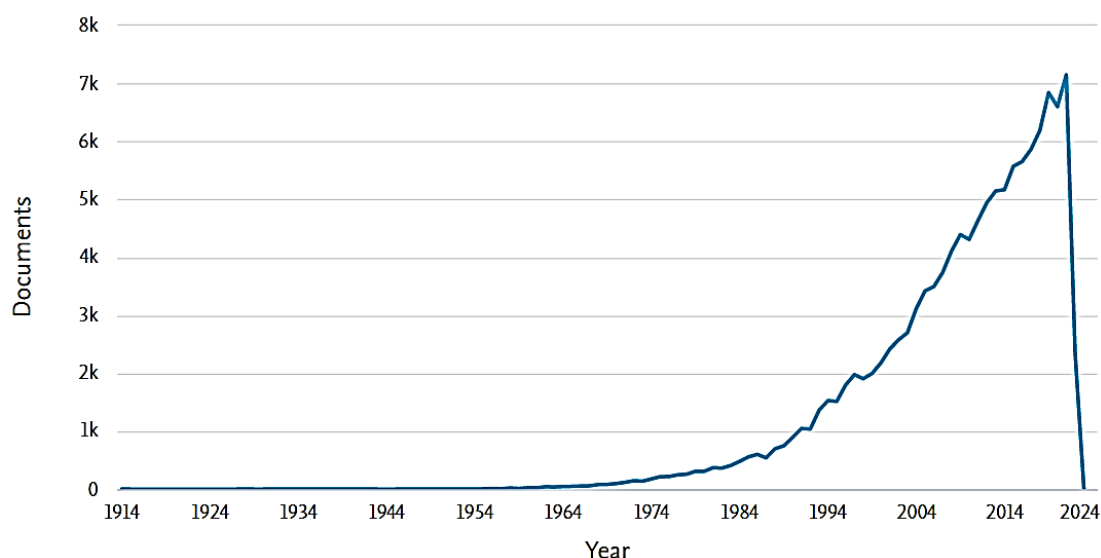


Figure 10. Publication years.

Adapted from: “Scopus”.

Considering the journals in which the keyword Energy cluster appears most often, the results are similar to the Web of Science Core Collection database. Figure 11 shows the top 5 most popular journals along with the number of publications in each year. The highest number of papers was for Journal of Chemical Physics - 6644, Journal of Physical Chemistry A - 2938, Physical Review B Condensed Matter And Materials Physics, 2324, Chemical Physics Letter 1751, Physical Chemistry Physics 1714, Astrophysical Journal - 1578.

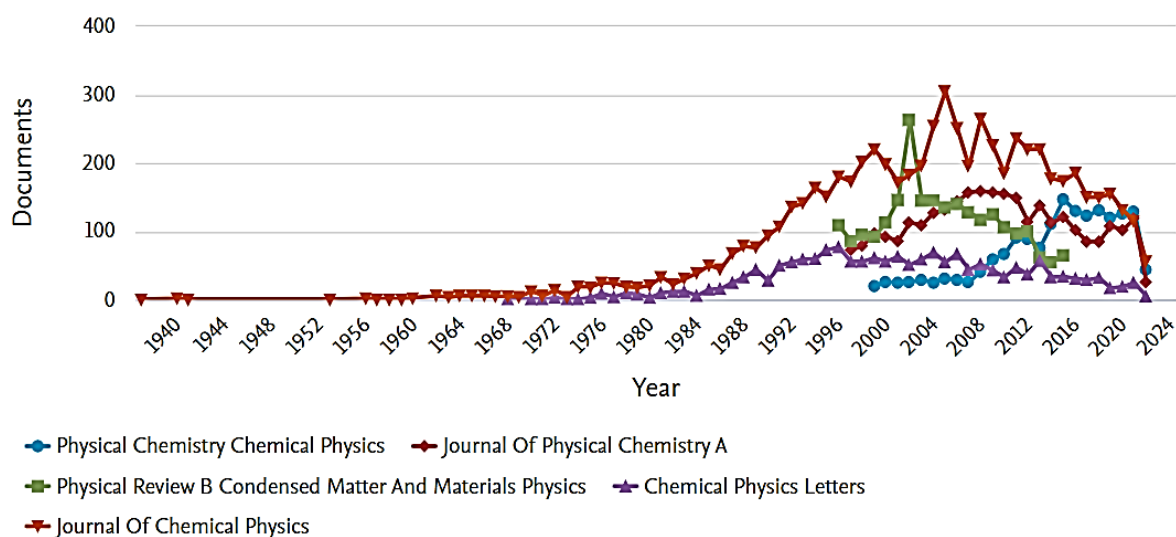


Figure 11. Documents per years by source.

Adapted from: “Scopus”.

The Scopus database also provides a list of keywords related to the study term. Therefore, words related to Energy cluster may include: Energy efficiency, density functional theory, Energy utilization, wireless sensor networks, cluster analysis, sensor nodes, molecular dynamics, binding energy. The remaining keywords and their network are presented in Figure 12.

Scopus and Web of Science, use different indexing algorithms and different sets of publications, which may affect the differences in the results of bibliometric analysis. Here are some factors that influence the differences in citations of leading authors in the two databases:

1. Indexing coverage. Both databases have their own criteria for selecting journals, conferences and publications to be indexed. There are differences in territorial and subject coverage, meaning that certain publications may be present in only one of the databases and others in both.
2. Journals unique to one database. There are journals and publications that are exclusively indexed in one database, but not the other. This means that researchers publishing in such journals will be visible as lead authors only in that particular database.
3. Indexing algorithms. Scopus and Web of Science use different algorithms to index and evaluate the quality of publications. This can affect which publications are considered important and which citations are given more prominence.
4. Indexing lag time. The two databases have different lag times for indexing new publications. This can result in leading authors of some recent papers not yet being included in bibliometric data.
5. Differences in data availability. Often, differences in citations are also due to the fact that different institutions or countries have access to only one database, which affects authors' preferences in choosing where to publish.

It is worth noting that both databases, Scopus and Web of Science, strive to provide the most comprehensive and accurate information possible, but differences in how they operate and collect data can lead to differences in the results displayed, including citations of leading authors in a given field. Despite these potential repetitions, bibliometric analysis is still a useful tool for assessing the impact of scientific publications and identifying important research topics.

The analysis in the future should be expanded to include additional indicators, especially regarding citations and collaborations, as well as the national dimension of publishing activity in energy clusters. The present study is mainly based on data from the Web of Science Core Collection and Scopus, but eventually these databases should be used more widely. The study can also be extended to other internationally known databases. The advantage of these databases is that they provide access to publications and knowledge from all over the world, although there are still many journals that are not included in the above-mentioned databases and therefore the picture obtained on their basis is not complete (especially since these databases include mainly English-language publications). In order to make a comparison with Polish authors and publishers, it is also necessary to look at the indicators available in Polish scientific databases. Therefore, the presented analysis is preliminary and should be the subject of further research.

Acknowledgements

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MEASURING SOCIAL MEDIA ENGAGEMENT ON SPORTS CLUB WEBSITES

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Purpose: The main purpose of this article is to measure the effects of the communication of football sports clubs using social media. An additional aim is to create a versatile, flexible tool for managing online communication.

Design/methodology/approach: The method of a taxonomic synthetic development measure was used to achieve the intended purpose. This measure was calculated using data covering the activity of selected sports clubs on Facebook (Meta) from 1 to 10 October 2022 and the users' perception of this activity. The subjects of the study were sports clubs of the highest men's football competition class in Poland.

Findings: The study resulted in a ranking of the optimal use of Facebook (Meta) in the communication of clubs with their stakeholders.

Research limitations/implications: The main limitations of the study are the variety of factors that may influence the communication management of sports clubs and the fact of similarity between the subjects of the study. The main focus of the paper is to show how data from web statistics can be used. In the future, the method can be adapted to communication management problems.

Practical implications: The research method used in the paper is flexible, which allows it to be used freely to find out the effectiveness of companies' social media activities. Companies operating in homogeneous markets are provided with a tool for identifying their competitive positioning in terms of marketing communication.

Social implications: It is assumed that, with the optimal application of the proposed statistical method, companies, not only sports clubs, gain a tool to objectively assess their communication management policy through social media. The method replaces the qualitative assessment of this management, the position among different types of media or competitors.

Originality/value: The article is aimed at firms operating in a single market, where benchmarking is used in online communication. The novelty is that this is the only application of the taxonomic method of synthetic development measure in the management of communication through social media.

Keywords: taxonomic synthetic growth measure, social media, communication management

Category of the paper: Research paper.

1. Introduction

The Internet is an important medium today. A special role here is played by social media, which are an important means of communication between the company and its customers. Internet development enabled the creation of mobile applications (Druć et al., 2021) and social reality (Zawierucha, 2021), among other things. From the role of the Internet in the modern world, it is clear that corporate communication management is a very important part of marketing policy.

An important issue in approaching the topic of measuring the effects of social media is to determine how we will define engagement with these communication channels. This can be the non-monetary return on social media investment. This means, among other things, the emotional relationship subscribers have with a company on its profile (Khan et al., 2019). Another author points out what happens when a user builds relationships with other users and brands. This is more than just liking, commenting or posting on a social network. Instead, it reveals a long-term relationship between users or between users and a brand (Hallock et al., 2019). Engagement is studied by calculating non-financial metrics as a key objective of social media marketing (Sitta et al., 2018).

Other terms for social media engagement are a concept that encompasses consumers' relationship with advertising, media and brands, creation with layers of engagement, something to participate in, something to spread, something to talk about (Le et al., 2018).

Social media engagement can be understood in many ways. Each social media can also be assessed separately. Engagement is then examined as the intensity of interactions and their implications, towards the offers and actions of a brand, product or company, whether initiated by an individual or by a company. Along with traditional marketing channels, social media outlets are integrated as a part of the marketing mix. Social media has changed the dynamics of interaction between companies and consumers that foster this relationship. Managing brand fan pages on social networking sites is a specific way the companies are using. Customers can become brand fans on these pages and indicate that they like the brand posts, share on their wall or simply comment (Khan et al., 2016).

Among the methods of studying online consumer behaviour, the predominant ones measured are through so-called online engagement metrics, including the number of users, click-through rates, page views, content likes and comments, depending on the platform (Muñoz-Expósito et al., 2017). It is also possible to take as a basis the motivation of the individual resulting from their experience with the object, manifested in object behaviour, and viewer engagement understood as the attitude towards the brand in terms of likes, comments and shares (Segijn et al., 2019). This approach will be the basis for this article.

The diversity of approaches to social media engagement confirms that there is no theoretical consensus among authors on how to measure social media engagement.

Hence, the conclusion is that studies on social media engagement indicators can be grouped and divided into different categories (Trufno, Rossi, 2021).

One of these is the most widely described 'quantitative metrics'. These predominantly assess the impact of social media engagement based on the number of comments, likes, shares, followers, etc. (Yoon et al., 2018; Khan et al., 2019; Medjani et al., 2019). This approach is also the method used in this article.

The second group of studies are those that identify indicators of social media engagement by developing a 'set of indicators'. These may use three social media metrics to measure engagement with a particular behaviour, for example conversation. In detail, the conversation rate measures the number of comments or reviews in response to a post, the amplification rate measures the amount of online content shared, and the applause rate measures the number of positive responses to posts (Li et al., 2019).

The third group of studies are 'normalised metrics', where an average measure of user engagement by dividing the sum of interesting shares by the total number of posts, or other factors such as liking, sharing or commenting (Zanini et al., 2019; Osokin, 2019; Mariani et al., 2018).

The last group of engagement studies is a qualitative approach, where contemporary social media and social research indicators are considered (Abuljadail, Ha, 2019).

This article is intended to include elements of the approach and methodology of each of the first three groups of research. It deals with a homogeneous group of actors who maintain their profiles on Facebook (Meta). To date, quantitative analysis of stakeholder engagement on club profiles has not been attempted in sports marketing. The method used in the study is a taxonomic method, which has also not been used to date to solve research problems in the field of online engagement. The taxonomic method in sport-related research has only been used in the study of sport rating systems (Stefani, 1999). The method is mainly used in geography, in studies of the attractiveness of tourist regions. The attempt made in this article is to transfer the presented taxonomic method to the field of sport communication management.

2. Research methody

The basis of the consideration is to determine the level of development of the clubs' communication with stakeholders through the social medium of Facebook (Meta).

Statistical indicators were used in the analysis regarding:

- number of posts,
- number of reactions to posts,
- number of comments on posts,
- attendance.

The datasets cover the Facebook activity period from 1 to 10 October in the case. Bearing in mind that the activities of the football clubs surveyed are similar to each other and that their activity is mainly related to sporting events, it is not necessary to extend the time range. The time range is limited intentionally to facilitate the subsequent adaptability of the indicated statistical method to the practice of sports companies.

All necessary calculations were carried out in an Excel spreadsheet using its calculation capabilities.

The statistical method used in the study is taxonomic analysis.

The procedure consists of the following steps (Bąk, Szczecińska, 2013):

- preparation of numerical data,
- selection of variables for analysis,
- ordering and grouping.

The coefficient of variation can be used to indicate the variables to be eliminated from the analysis. If the coefficient of variation takes values greater than 0.1 (or 10%) then the diagnostic characteristic should be eliminated.

$$V = \frac{S_j}{x_j} \quad (1)$$

where:

V - coefficient of variation.

x_j - arithmetic mean of the values of characteristic x_j .

The second method of feature elimination is correlation. If two features are highly correlated then they carry similar information, so one of them becomes redundant. Therefore, it is necessary to consider the correlation coefficients of all pairs of features and then eliminate those features that are most similar to the other, i.e. take correlation values close to 1.

$$R = \begin{bmatrix} 1 & r_{12} & \dots & r_{1m} \\ r_{21} & 1 & \dots & r_{2m} \\ \dots & \dots & \dots & \dots \\ r_{m1} & r_{m2} & \dots & 1 \end{bmatrix}, \quad (2)$$

where r_{jk} – Pearson linear correlation coefficient of the j -th and k -th traits.

In this article, the model method in the classical approach is used to construct a taxonomic measure of development. The classical measure is based on standardised z_{ij} values of diagnostic characteristics.

$$z_{ij} = \frac{x_{ij} - \bar{x}_j}{S_j}, \quad (i = 1, 2, \dots, n, \quad j = 1, 2, \dots, m). \quad (3)$$

The distances of each test object (d_i) with the form shown in the formula were then determined.

$$d_i = \sum_{j=1}^m |z_{ij} - \varphi_j|, (i = 1, 2, \dots, n), \quad (4)$$

where:

$\varphi_j = \max z_{ij}$ for stimulants,

$\varphi_j = \min z_{ij}$ dla destimulants.

A stimulant is a statistical characteristic whose increase in value leads to an increase in the value of the explanatory variable. A destimulant is a statistical characteristic whose increase in value leads to a decrease in the value of the explanatory variable.

The final step was the calculation of the synthetic measure of development (Formula 5).

$$\mu_i = 1 - \frac{d_i}{d_-}, \quad (5)$$

where d_- - variable calculated as the sum of the arithmetic mean of the coordinates of the distance vector (d) and twice the standard deviation of these coordinates.

This procedure was also used to determine synthetic measures of development for the communication activity of football clubs in the Polish Ekstraklasa in order to see how the effectiveness of individual clubs on Facebook evolved over the period indicated.

3. The study results

The research was conducted in two stages. The first was the presentation of basic information on the activity of the surveyed football clubs on Facebook. In the second part of the research, a taxonomic method was applied, based on statistics of all Polish Ekstraklasa clubs. It standardised selected data, such as the number of posts, reactions to these posts, comments, attendance, and its links to data on the clubs' communication with stakeholders on Facebook. This allowed the application of a taxonomic method (measure) and the classification of Poland into a specific group of countries according to these data.

The data in Table 1 was used as the baseline for the analysis.

Table 1.*Factors related to the communication of Ekstraklasa S.A. sports clubs on Facebook*

	Number of posts	Median reactions	Median comments	Number of popular posts	Number of frequently commented post	Percentage of popular posts	Percentage of frequently commented post	Max reactions
Raków Częstochowa	72	347,5	22	69	14	0,96	0,19	2900
Widzew Łódź	75	398	23	66	9	0,88	0,12	6600
Wisła Płock	69	93	2	33	2	0,48	0,03	851
Legia Warszawa	52	750,5	26,5	50	12	0,96	0,23	5200
Pogoń Szczecin	74	697,5	28	71	10	0,96	0,14	3800
Stal Mielec	90	85	6	42	3	0,47	0,03	3600
Lech Poznań	82	588,5	30	80	13	0,98	0,16	7000
Cracovia Kraków	54	122	3	32	2	0,59	0,04	684
Jagiellonia Białystok	16	71,5	10	5	0	0,31	0,00	179
Warta Poznań	58	137,5	6,5	36	1	0,62	0,02	1600
Radomiak Radom	26	134,5	26	21	2	0,81	0,08	746
Śląsk Wrocław	41	300	26	36	1	0,88	0,02	2400
KGHM Zagłębie Lubin	62	88	4	26	2	0,42	0,03	734
Górnik Zabrze	72	166,5	12	51	12	0,71	0,17	1400
Piast Gliwice	51	66	12	17	4	0,33	0,08	350
Korona Kielce	43	88	12	20	4	0,47	0,09	558
Lechia Gdańsk	54	181	21	43	6	0,80	0,11	337
Miedź Legnica	33	77	21	13	2	0,39	0,06	116

Source: Own compilation based on data from Ekstraklasa S.A. clubs profiles.

The subsequent figures in the columns of Table 1 represent data collected between 1 and 10 October 2022. The data taken for further calculations are:

1. The number of posts made by the club during the study period. It allows us to check the clubs' activity on the social network Facebook (Meta).
2. The median response to a post. The reaction represents the interest in a given post expressed by clicking an emoticon (liking, expressing displeasure or regret) next to the post. The use of the median is due to the fact that reaction numbers vary widely, so positional measures are more appropriate.
3. Median of comments per post.
4. Number of popular posts. A minimum of one hundred reactions is taken as a measure of the popularity of a post.
5. Number of posts frequently commented on. As in the previous section, one hundred comments was taken as the measure of frequency.
6. Percentage of popular posts. The rate of popular posts was calculated by dividing the number of popular posts by the number of all posts in the period under review.
7. Percentage of frequently commented posts. The index of frequently commented posts was calculated by dividing the number of frequently commented posts by the number of all posts in the period under study.
8. Maximum reactions. The column presents the maximum number of reactions to determine the maximum interest in posts by Facebook users.

Five factors were taken into account in order to calculate a synthetic development indicator in the communication process through:

1. The number of posts made by the club during the study period.
2. The median response per post.
3. Median comments per post.
4. Percentage of popular posts.
5. Percentage of posts frequently commented on.

Based on the data in Table 1, the interdependencies of each group of factors were calculated. The Pearson correlation coefficient was used for the calculations. After analysing the results obtained, none of the factor groups was eliminated.

Table 2.

Pearson's linear relationship index for groups of factors

	Number of posts	Median reactions	Median comments	Number of popular posts	Number of frequently commented post
Number of posts	1,00	0,35	-0,05	0,34	0,36
Median reactions	x	1,00	0,72	0,82	0,36
Median comments	x	x	1,00	0,50	0,55
Number of popular posts	x	x	x	1,00	0,68
Number of frequently commented post	x	x	x	x	1,00

Source: Own compilation based on data from Ekstraklasa S.A. clubs profiles.

In purpose of constructing a taxonomic measure of development, the benchmark method was used in the classical approach. The classical measure was calculated based on the standardised z_{ij} values of the diagnostic characteristics and the distances of each study object (d_i) were determined. The results of the calculation are presented in Table 3 and from the calculated indicators it can be seen that the most developed in terms of communication through the social network Facebook (Meta) are the clubs that have achieved sporting success in recent years related to high positions or promotion. The influence of tradition and the size of the centres are also apparent here.

The first group includes Legia Warsaw, Lech Poznań and Pogoń Szczecin. They have the highest synthetic development indicators, which means in practice high communication effectiveness determined by the popularity of posts and high interest in the club and its activities.

The second group includes Raków Częstochowa and Widzew Łódź, which were first and second in the Ekstraklasa table on 10 October. Sporting success led to higher interest in social media.

The third group of clubs active in the researched social media are sports-stable clubs, mainly from large, traditional centres such as Gdańsk, Wrocław and Zabrze. The only exception to this is Radomiak Radom, which stayed in the Ekstraklasa as a newcomer the season before. This is an important factor driving interest in the local club.

The fourth group of clubs active on Facebook is the broadest. For this group, the activity and fan interest in the content posted by the club is relatively average or low.

The fifth group includes only Jagiellonia Białystok, which is ranked last in each group of factors surveyed and has a relatively low level of interest.

The groups of sports clubs resulting from the study therefore show similar characteristics related to involvement in club life, curiosity about sports results and preparation for matches. Nor is it just derived from the sporting outcome. Stakeholder engagement is related to the ability to make the audience curious and the diverse use of Facebook (Meta) in a homogeneous marketing market.

Table 3.

Synthetic development index for factors related to communication of Ekstraklasa S.A. clubs

	Indicators d_i for individual factors					Sum of indicators d_i	Synthetic development indicator μ_i	Ranking	Group
	Number of posts	Median reactions	Median comments	Number of popular posts	Number of frequently commented post				
Raków Częstochowa	0,91	1,80	0,83	0,07	0,54	4,15	0,75	4	2
Widzew Łódź	0,76	1,57	0,73	0,40	1,65	5,11	0,69	5	2
Wisła Płock	1,06	2,94	2,92	2,07	3,01	11,99	0,28	15	4
Legia Warszawa	1,91	0,00	0,36	0,06	0,00	2,34	0,86	2	1
Pogoń Szczecin	0,81	0,24	0,21	0,07	1,42	2,74	0,84	3	1
Stal Mielec	0,00	2,97	2,50	2,12	2,94	10,53	0,37	10	4
Lech Poznań	0,40	0,72	0,00	0,00	1,08	2,20	0,87	1	1
Cracovia Kraków	1,81	2,81	2,81	1,60	2,89	11,91	0,29	13	4
Jagiellonia Białystok	3,73	3,03	2,08	2,77	3,44	15,05	0,10	18	5
Warta Poznań	1,61	2,74	2,45	1,48	3,18	11,46	0,31	12	4
Radomiak Radom	3,22	2,75	0,42	0,70	2,29	9,38	0,44	9	3
Śląsk Wrocław	2,47	2,01	0,42	0,41	3,07	8,38	0,50	8	3
Zagłębie Lubin	1,41	2,96	2,71	2,32	2,96	12,35	0,26	17	4
Górnik Zabrze	0,91	2,61	1,87	1,11	0,95	7,46	0,55	6	3
Piast Gliwice	1,97	3,06	1,87	2,68	2,27	11,84	0,29	13	4
Korona Kielce	2,37	2,96	1,87	2,13	2,05	11,38	0,32	11	4
Lechia Gdańsk	1,81	2,54	0,94	0,75	1,78	7,82	0,53	7	3
Miedź Legnica	2,87	3,01	0,94	2,43	2,53	11,78	0,29	13	4

Source: Own compilation based on data from Ekstraklasa S.A. clubs profiles.

4. The final results

The research and its results showed that, with the method used, the effects of communication can be measured by creating a communication ranking for individual clubs. It is also possible to monitor the ranking in cyclical studies based on the same factors in other periods. Further, by calculating a synthetic development index, it is also possible to check an entity's place among its competitors and to manage communication by modifying its activities.

An additional aim of the article was to create a tool to measure the effects of communication. In this case, the subjects of the study were football clubs playing their matches in the top division - Ekstraklasa S.A.

As a result of the research, it was shown that in addition to ad hoc results, the research method can be used as a basis for comparing communication management activities in social media. The statistical method used can also be used to measure the effectiveness of reaching and communicating with stakeholders.

Among its advantages are:

- high flexibility in the use of data sets,
- possibility to compare one's communication policy with similar entities,
- the possibility of systematic monitoring of the effectiveness of communication activities over different time periods,
- ease of application of the method to other forms of communication activities on the Internet,
- possibility to compare the effectiveness of other social media.

The drawbacks of the method, on the other hand, are the difficulty in selecting data relevant to the identified problem and the high variability of the studied environment.

The high flexibility in the use of data sets means that specific data can be substituted depending on what one wants to investigate, while maintaining the principles of logic, representativeness and objectivity. Thus, the method can be used in sports clubs when studying communication, their sporting effects, factors influencing attendance, etc.

The method used in the article gives the opportunity to compare their communication policy with similar entities. There is no phenomenon of increased competition in the sports club market. For example, there is competition in the leisure market by fans and for funding from local authorities and sponsors, and these decisions are made for the long term (by declaring to be a supporter, support or cooperation). In local markets, there is also a certain hierarchy depending on the sports performance and tradition of the club (Lech Poznań and Warta Poznań, Korona Kielce and KS Łomża Industria Kielce - handball, Wisła Płock - football and handball, Raków Częstochowa and Włókniarz Częstochowa - speedway sport and others). As the entities are similar in terms of their activities, it is possible to objectively compare which of them communicates most effectively with the environment, using a set of selected data.

The method makes it possible to systematically monitor the effectiveness of communication activities over different time periods. On their basis, communication can be managed by taking, modifying or not taking specific actions.

The method also makes it easy to apply it to other forms of communication activities on the Internet. Facebook is just one of many social media. Similar studies can look at the activity of content audiences on TikTok, Youtube, Twitter, Instagram and others. Hence, it is possible to compare the effectiveness of other social media, measured as the activity of content audiences (fans, sponsor representatives, local governments and other stakeholders).

In applying the method, it is important to use variables that are relevant to the problem and to recognise the variability of the environment. For communication management, it is worth mentioning that during the off-season there is much less interest in a sports club than during games (Kowalski, 2020), so there is no need to overload potential content audiences with information whose reception will be minimal.

The method used is an attempt to fill a research gap and can be successfully applied to manage the way sports clubs communicate with their environment, to use the free tools available on the internet effectively. The need to use them more effectively stems from the fact that the Internet is not so much about being on the Internet, but about directing attention to the information desired by communication managers.

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EMOTIONAL INTELLIGENCE IN THE CONTEXT OF ORGANISATIONAL MANAGEMENT

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Introduction/background: The issue of emotional intelligence is increasingly being addressed in terms of its role and impact on the management of organisations, particularly human resource management. The literature on the subject views its role in the context of effective management and development of organisations, as well as success. It is therefore of interest not only to researchers, but also to practitioners.

Aim of the paper: The main aim of the paper is to identify the role of emotional intelligence in the aspect of organisational management and to evaluate its level within the framework of the research conducted.

Materials and methods: The study was conducted in IT companies using a survey method. A questionnaire assessing the level of emotional intelligence of managers was used in the study. A five-point Likert scale was used in the questionnaire.

Results and conclusions: The analysis carried out showed the important role of emotional intelligence and its impact on building positive interpersonal relations in the workplace. The research conducted in IT companies indicates a relatively high level of emotional intelligence among managers.

Keywords: emotional intelligence, organisational management, manager.

1. Introduction

Emotional intelligence in the field of management science and quality is increasingly seen as an important success factor in the context of managing organisations, companies. Many authors (e.g. Goleman, 1997; Goleman et al., 2002; Cherniss, 2010) emphasise that employees, managers characterised by high levels of emotional intelligence perform better in building and managing relationships with other employees, customers, teams and generally difficult situations in life.

The concept of emotional intelligence (EI) based on different theoretical concepts is not clearly defined in the literature. Many authors (i.e. Goleman, 1995; Mayer et al., 2004; Bieniok, 2011; Singh et al., 2022) relate the understanding of this concept to the use of emotional processes for effective life and work resourcefulness. Emotional skills are considered a wealth of the global labour market, bringing many benefits to contemporary organisations. Viewed from this perspective, emotional intelligence plays an important role in the life of every individual, influencing the ability to build social relationships and cognitive development. Therefore, the issue of emotional intelligence is increasingly being researched in the context of its impact on everyday life and professional effectiveness. As one of the “soft” competences, emotional intelligence is an integral element determining social life and functioning in a work team (Gorustowicz, 2019). Goleman et al. (2002) see emotional intelligence as one of the most important factors in predicting success in a person's life (Knopp, 2006). The application of IE in practice positively influences many aspects. Referring to the cognitive aspect, emotional intelligence indicates an influence on creative thinking processes, imaginativeness (Stańczyk et al., 2015). The social aspect of IE, on the other hand, refers to the ability to adapt to functioning in uncomfortable and difficult social conditions (Stańczyk et al., 2015). An important role in shaping, motivating employees and developing emotional intelligence translating into organisational success is played by managers, leaders (Goleman, 2019).

The main objective of this article is to identify the role of emotional intelligence in the management aspect of organisations and to evaluate its level within the framework of the research carried out. In order to achieve the formulated objective, a literature analysis and research in IT companies were carried out. The research was carried out as part of a master's thesis.

2. Literature review - the role of emotional intelligence in the management of organisations

Emotional intelligence is an increasingly popular issue in the field of organisational and human resource management enriching this area of science with aspects concerning human emotional potential. Writing about the essence of emotional intelligence, D. Goleman emphasised its influence on the correct building of relationships and the acquisition of skills necessary to function among people (Kaniewska-Mackiewicz, 2016). Significant in this respect are appropriate gestures, body language and words, which constitute the power to build positive relations with other people (Bieniok, 2011). A. Carr defines emotional intelligence as the ability to recognise and manage one's own and other people's emotions in the context of forming interpersonal relationships (Carr, 2009). According to D. Goleman,

the concept of emotional intelligence is based on skills forming emotional competences which make it possible to be successful in different spheres, including the professional sphere (Stańczyk et al., 2015). Increasingly, managers, leaders emphasise the importance of interpersonal competences related to the ability to work in a team, self-organisation, resistance to stress and motivation to work (Górniak, 2012). Goleman's research has shown that efficient and effective leaders are distinguished by a high degree of emotional intelligence, which is even the basis for emotionally intelligent leadership (Goleman, 1998).

As highlighted by many authors, a high level of emotional intelligence can contribute to success in managing organisations by influencing:

- higher efficiency and productivity at work which consists of the ability to cope with difficult and stressful situations, problems as well as making courageous and accurate decisions (Cherniss, 2010);
- better communication and cooperation with employees, customers and other stakeholders, which is related to the ability to recognise and understand other people's needs and emotions (Goleman, 1997);
- increased employee engagement and motivation through the ability to build and maintain sustainable and positive relationships (Goleman et al., 2002).

There are many models of emotional intelligence in the literature, taking into account different factors and dimensions of emotional intelligence. Models based on the concepts of Goleman (1997), Mayer and Salovey (1997) and model of Rauven Bar-on (1997) are often cited.

The most cited and widespread concept of emotional intelligence is that of D. Goleman, which implies the ability to understand and control emotions, the ability to motivate, to empathise and abilities of a social nature concerning interpersonal communication (Goleman, 1997). D. Goleman distinguishes the following five dimensions among the components of emotional intelligence (Goleman, 1997):

- Self-awareness - relating to knowledge of one's own internal states and abilities, as well as knowledge and reasonable belief in oneself and one's abilities;
- Motivation - concerning the action and emotional dispositions needed to achieve new goals;
- Self-regulation - relating to mastery, control of internal states, impulses and capabilities;
- Empathy - relating to empathy with needs, emotions, feelings, the ability to put oneself in the other person's perspective;
- Social abilities - relating to the ability to function among people, to elicit their desired reactions and to control one's own emotions in interpersonal communication.

The distinguished dimensions of emotional intelligence are closely interlinked to form a comprehensive framework covering the assumptions of emotional intelligence (Goleman, 1999).

In the other hand, Jack's Mayer and Peter's Salovey (1997) concept of emotional intelligence is based on personality traits and mental abilities relating to both the emotional sphere and the intellect.

Rauven Bar-on's (1997) model, on the other hand, is based on the notion of emotional intelligence, defined as a set of non-cognitive competences, abilities enabling one to deal effectively with environmental conditions. The researcher analysed and verified the literature on personality and identified 5 pillars distinguishing: interpersonal abilities, acceptance, independence, emotional awareness, and assertiveness (Knopp, 2006).

3. Methodology

In order to realise the aim of the thesis, a study of the emotional intelligence of managers managing organisations and teams of IT employees was conducted. The research addresses the topic of shaping relationships and atmosphere among employees based on the concepts of emotional intelligence according to the model of D. Goleman (1997) distinguishing five dimensions, i.e. empathy, self-control, self-awareness, motivation, interpersonal communication.

The survey was addressed to people working in IT companies employed in the Silesian and Lower Silesian voivodships. The specialised IT sector is a strategic sector of great importance for the development of Poland, being part of the National Intelligent Specialisations (NIS) (*Krajowa Inteligentna Specjalizacja...*, 2020).

The study was conducted using a survey questionnaire. A five-point Likert scale was used to assess the individual dimensions of managers' emotional intelligence, where 1 means definitely no; 2 - no; 3 - don't know; 4 - yes; 5 - definitely yes. The survey yielded 395 completed questionnaires. After verifying the completeness of the data, 351 questionnaires were accepted for analysis. The structure of the surveyed people of IT companies is presented in Table 1.

Table 1.

Structure of surveyed employees in IT companies

Gender	Female	33,90%
	Male	66,10%
Age	18-25	27,60%
	26-35	27,10%
	36-45	24,80%
	46-55	11,10%
	> 55	9,40%

Cont. table 1.

Company size	up to 9 employees	8,2%
	10 to 49 persons employed	21,70%
	50 to 249 persons employed	26,20%
	more than 250 persons employed	43,90%
Position	employee	64,10%
	managers	35,90%

Source: own elaboration.

As can be seen from the data presented in Table 1, the largest group of respondents were people working in large companies with more than 250 employees. The largest group were men (66.10%) and people aged 18-25 (27.60%) and 26-35 (27.10%). Among the respondents, 64.1% were employees and 35.90% were managers.

4. Results and discussion

The results of the study of the level of emotional intelligence in the specified five dimensions, i.e. self-awareness, self-control, empathy, motivation and interpersonal communication, are presented in the tables below.

The results regarding the assessment of managers' self-awareness in the context of the emotional intelligence survey are presented in Table 2 below.

Table 2.

Evaluation of the awareness dimension in percentage form

Emotional intelligence dimension	%	%	%	%	%
1. Self-awareness	1	2	3	4	5
1.1. The manager makes rational decisions	10,30%	16,20%	8,50%	39,60%	25,40%
1.2. The manager is able to admit own mistake	11,40%	14,00%	12,00%	33,00%	29,60%
1.3. The manager is able to admit that another person is right person	10,00%	13,70%	10,50%	33,90%	31,90%
1.4. The manager is aware of his/her own inadequacies and the need for continuous development	10,00%	13,70%	10,50%	33,90%	31,90%
1.5. The manager is a credible and confident person	9,70%	13,10%	8,80%	38,50%	29,90%
1.6. The manager is a person with a "human face"	10,50%	13,40%	12,30%	33,60%	30,20%

Source: own elaboration.

As can be seen from Table 2, the research carried out showed (taking into account the answers rated at 4 - yes and 5 - strongly yes) that, in the opinion of the respondents, managers overwhelmingly make rational decisions (65%), are able to admit their own mistakes (62.60%) and admit that another person is right (65.8%). According to the respondents, managers are less than 66% aware of their imperfections and the need for continuous development, and are reliable, confident (68.4%) and "human-faced" (63.80%). The data in Table 2 show that, managers show the highest level in acknowledging the rightness of other

employees (65.8%). Thus, it can be seen from Table 2 that the respondents mostly rated positively on all the variables of the self-awareness dimension of managers.

Table 3 shows the results for the dimension of managers' self-control in the aspect of emotional intelligence (Table 3).

Table 3.

Evaluation of the dimension of self-control in percentage form

Emotional intelligence dimension	%	%	%	%	%
2. Self-control	1	2	3	4	5
2.1. The manager separates the emotions of private and professional life	10,70%	17,40%	10,00%	36,50%	25,40%
2.2. The manager shows a calm way of expressing his/her dissatisfaction with unexpected results of work	10,70%	12,30%	15,10%	36,50%	25,40%
2.3. The manager is able to control stress	10,00%	13,40%	10,50%	36,50%	29,60%
2.4. The manager avoids conflicts	9,60%	12,30%	13,10%	34,50%	30,50%
2.5. A manager is a person positive about work	10,80%	12,50%	10,30%	35,90%	30,50%
2.6. The manager shows an objective attitude towards his/her employees	9,30%	11,70%	15,70%	36,80%	26,50%

Source: own elaboration.

Considering the responses presented in Table 3 and the evaluated responses of 4 - yes and 5 - definitely yes, it is concluded that managers largely separate the emotions of their private life from their professional life (61.90%). Respondents noted that team leaders are able to calmly show dissatisfaction with unexpected results of their work (61.90%) and demonstrate the ability to manage stress according to 66.1% of respondents. 65% of respondents indicated that managers avoid conflict. 66.4% of the respondents rated them as people with a positive attitude towards work and in 63.3% objective towards their employees.

Table 4 below shows the results on the dimension studied - empathy, as one of the elements that make up the concepts of emotional intelligence.

Table 4.

Evaluation of the empathy dimension in percentage form

Emotional intelligence dimension	%	%	%	%	%
3. Empathy	1	2	3	4	5
3.1. In case of a difficult situation for me, I can count on my manager's understanding	9,50%	14,50%	10,00%	37,00%	29,00%
3.2. If I have a problem with a task or a conflict with another employee, I can ask for help from my manager	10,80%	12,30%	11,10%	36,80%	29,00%
3.3. The manager is able to take the other person's perspective when helping with a work issue	10,00%	13,00%	8,30%	36,20%	32,50%
3.4. The manager initiates a conversation when they see that I need help	10,00%	14,00%	13,80%	34,80%	27,40%
3.5. The manager supports me by overseeing the progress of my work	10,80%	12,30%	10,80%	35,30%	30,80%
3.6. The manager's empathetic attitude has a positive effect on building working relationships	10,10%	14,20%	10,80%	33,30%	31,60%

Source: own elaboration.

As the results summarised in Table 4 show, according to the respondents, the vast majority (66%) can count on their manager's understanding in the case of situations that are difficult for them. 65.8% of the respondents indicated that in cases of problematic tasks or conflict with another employee, they can turn to their supervisors for help. Almost 69% of respondents believe that managers are able to take the other person's perspective when providing assistance in professional matters. 62.2% of respondents indicated that a manager initiates a conversation when help is needed. 66.1% of respondents consider their managers to be supportive when overseeing work progress. Nearly 65% of respondents believe that a manager's empathetic attitude has a positive impact on building employee relationships (Table 4).

Table 5 presents the results concerning managers' motivation treated as one of the dimensions of the emotional intelligence construct.

Table 5.

Evaluation of the motivation dimension in percentage form

Emotional intelligence dimension	%	%	%	%	%
4. Motivation	1	2	3	4	5
4.1. The manager is fully engaged in his/her responsibilities	9,10%	1,70%	11,40%	37,90%	27,90%
4.2. The manager actively extends his/her knowledge by attending training courses	9,80%	12,50%	14,50%	34,20%	29,00%
4.3. The manager demonstrates a high degree of enthusiasm towards their work	11,10%	10,30%	8,80%	37,90%	31,90%
4.4. The manager is enthusiastic about their role	10,20%	12,30%	12,30%	38,70%	26,50%
4.5. The manager verbally appreciates his/her employees	10,00%	13,40%	9,40%	36,20%	29,10%
4.6. The manager cares about the motivation of his/her employees	10,50%	12,00%	11,40%	38,70%	27,40%

Source: own elaboration.

According to the results obtained, presented in Table 5, managers are highly committed to their duties (65.8%) and actively extend their knowledge by participating in training (63.20%). Nearly 70% of respondents believe that managers show a high degree of enthusiasm towards their work. Over 65% of respondents believe that managers are enthusiastic about their role (65.2%) and verbally appreciate their employees (65.3%). As many as 66.1% of respondents believe that managers care about the motivation of their employees.

The structure of the data obtained on the interpersonal communication dimension, which is the last dimension studied and makes up the emotional intelligence construct of managers, is presented in Table 6.

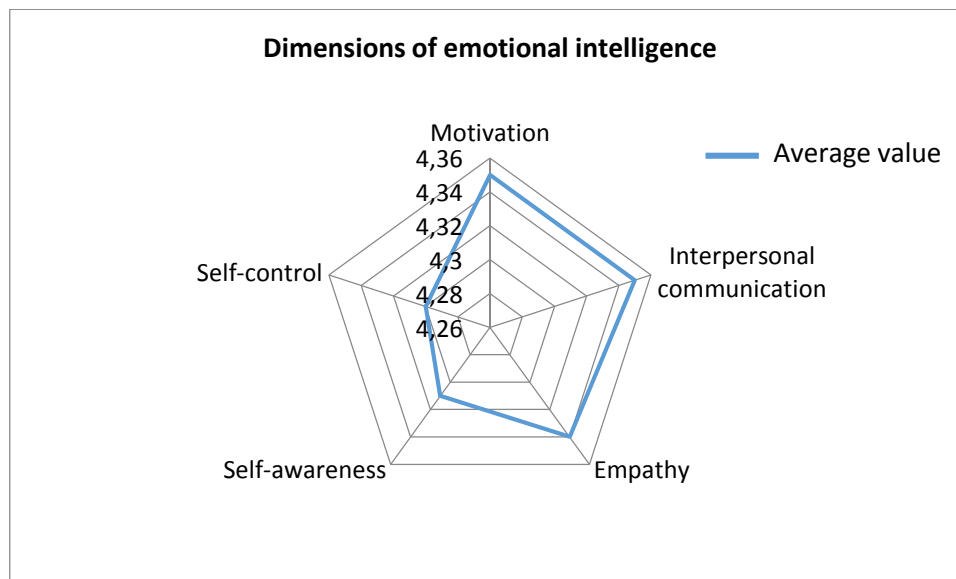
Table 6.*Evaluation of the interpersonal communication dimension in percentage form*

Emotional intelligence dimension	%	%	%	%	%
5. Interpersonal communication	1	2	3	4	5
5.1. I feel comfortable talking to with my manager	9,70%	13,70%	12,50%	35,00%	29,10%
5.2. The manager simply and clearly conveys information	10,50%	12,80%	12,30%	37,00%	27,40%
5.3. The manager clearly expresses expectations of my job	11,80%	10,50%	11,40%	33,30%	30,00%
5.4. The manager is able to listen actively	11,20%	10,50%	11,10%	37,60%	29,60%
5.5. The manager uses constructive criticism	9,90%	12,00%	9,70%	38,50%	29,90%
5.6. The manager is able to talk with their employees	10,60%	12,50%	11,40%	25,60%	29,90%

Source: own elaboration.

As with the assessment of the previous dimensions of emotional intelligence, the dimension of interpersonal communication was also rated positively by the majority of respondents. As can be seen from the data presented in the table above, 64.1% of the respondents feel comfortable communicating with their manager. 64.4% of respondents feel that the manager communicates in a simple and clear way and 63.3% of respondents feel that the manager clearly expresses expectations of the job. Most respondents also believe that team leaders are able to listen actively (67.2%) and use constructive criticism (68.4%). Among the positive responses, the variable concerning the manager's ability to talk to employees received the lowest value (55.5%).

Figure 1 shows the mean values obtained from the respondents' answers in the individual dimensions of emotional intelligence, i.e. self-awareness, self-control, empathy, motivation and interpersonal communication (Figure 1).

**Figure 1.** Mean values of individual dimensions of emotional intelligence.

Source: own elaboration.

From the data presented in Figure 1, it can be seen that the level of value of the individual five dimensions comprising the emotional intelligence construct is at a similar level. The highest value was obtained for the dimension of motivation and interpersonal communication, with an average value of 4.35, followed by the dimension of empathy (4.34) and self-awareness (4.31). The lowest mean value was shown for the dimension of self-control (4.30). The average value was calculated from the sum of the weighted average of all the responses collected on a dimension, divided by the number of responses and the scores obtained.

5. Conclusions

The literature analysis conducted indicates the significant role of emotional intelligence in the management of organisations and the growing awareness of its importance among employees and managers. Organisational managers play an important role in developing emotional intelligence (EI) (Goleman, 2019; Wong, Law, 2002). Given the identified role of emotional intelligence in the success of organisations, managers should support employees in developing these skills for improved work performance (Wall, 2008). On the other hand, they themselves should be characterised by high levels of emotional intelligence and continuously develop it.

The results of research conducted among employees of IT companies in the Silesian and Lower Silesian Voivodeships indicate a relatively high level of emotional intelligence among managers. The individual dimensions (i.e. self-awareness, self-control, empathy, motivation, interpersonal communication) comprising the construct of emotional intelligence distinguished on the basis of Goleman's (1997) concept are at a similar level (Goleman, 1997). The results of the study highlight the importance of all dimensions of emotional intelligence. Among all the assessed dimensions, the dimension of motivation and interpersonal communication was rated highest. The results of the study indicate that the level of emotional intelligence of managers significantly contributes to the formation of appropriate relationships among employees.

In order to increase work effectiveness, it is important that all dimensions of emotional intelligence are constantly strengthened and developed by both employees themselves and the organisation's leaders. This is related to the need to raise competencies in this area and to increase knowledge in dealing with and managing emotions.

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CONDITIONS FOR THE IMPLEMENTATION OF PROJECTS FINANCED BY THE EUROPEAN UNION DURING THE COVID-19 PANDEMIC

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Introduction/background: Obtaining funding for the implementation of a project entails the need to adapt the project to the requirements set by the European Union, as well as adequate competence on the part of the project team. This was particularly difficult during the Covid-19 pandemic, as even the most experienced and specialised teams could not fully anticipate the pandemic situation, which forced a number of changes in relation to the running of projects. These changes ranged from projects started before the outbreak of the pandemic to those that had already started during the pandemic. Given the authors' personal experience of working on EU projects during this period, there was very little information on how to implement changes in accordance with the health restrictions imposed by the Ministry of Health. At the time of the epidemic, even what appeared to be basic information had to be changed or clarified, however, to comply with the guidelines for implementing European projects. Despite the challenges posed by the COVID-19 pandemic, many organisations and actors implemented projects successfully. The question then is what factors influenced the successful implementation of these projects?

Aim of the paper: The aim of the paper is to identify and define the conditions affecting the successful implementation of EU co-financed projects during the COVID-19 pandemic.

Materials and methods: The study used a diagnostic survey method and desk research analysis, and the research tool used was an original interview questionnaire.

Results and conclusions: The following were identified as the most important factors influencing the success of EU projects during the COVID-19 pandemic: the high level of knowledge of team members and their personality traits, the ability to transfer knowledge effectively, communication skills on the part of the project manager and team members, and the provision of appropriate tools and technology to carry out the work remotely.

Keywords: EU project management, project success, COVID-19, crisis management.

1. Introduction

The possibility of obtaining financial support for projects from European Union (EU) funds has been the subject of enormous interest in Poland in recent years, as it represents an opportunity for development for many entities. The multiplicity of options to choose from among operational programmes that make it possible to obtain financial support from EU funds means that many entities with no experience in running projects decide to submit an application and obtain funding. However, this is connected with the necessity of effective and purposeful spending of the obtained funds, because one of the many conditions for obtaining and using EU funds is their proper public management (Tkaczyński, Świstak, Sztorc, 2011, pp. 23-24). Obtaining funding involves managing the project in accordance with the requirements set by the European Union. The European Union, when awarding funds for a specific project, always imposes certain rules and nomenclature on the implementing entities. Additionally, as indicated by Nistor & Muresan, projects financed by the European Union have special characteristics that differentiate them from other projects and need an adapted type of management (Nistor, Muresan, 2012, pp. 535-542). It also requires the project teams to be competent. However, even the most experienced and specialised teams could not fully anticipate the situation related to the COVID-19 pandemic, which forced a number of changes in relation to the running of projects. These changes ranged from projects started before the outbreak of the pandemic to those that had already started during the pandemic. Given my personal experience of working on EU projects during this period, there was very little information on how to implement changes in accordance with the health restrictions imposed by the Ministry of Health. At the time of the epidemic, even what appeared to be basic information had to be changed or clarified, however, so as to comply with the guidelines for implementing European projects.

Despite the challenges posed by the COVID-19 pandemic, many organisations and actors implemented projects successfully, hence the aim of the paper was to identify factors affecting the successful implementation of projects co-financed by the European Union during the COVID-19 pandemic.

The paper is organised as follows: the theoretical background section contains issues concerning EU-funded projects. It describes the specifics of EU projects, as well as activities supporting the management of European projects during the COVID-19 pandemic. The second part presents a description of the research methodology - research objectives, research questions, research methods and the research sample. Part Results presents an analysis and interpretation of the research results, including factors influencing the success of EU-funded projects during the pandemic.

2. Theoretical background

2.1. Specificity of European projects

There are certain characteristics that a project should have in order to be called a European project, i.e. (Trocki, Grucza, 2007, pp. 13-14):

- clear definition of target groups and final (ultimate) beneficiaries,
- use of specific arrangements for financing, coordinating and managing the project,
- having monitoring and evaluation systems in place,
- having a financial justification - which must show that its implementation will bring more benefits than the resources invested in it.

The thematic range of EU projects that are possible to implement in Poland is extremely wide. Given the multitude of possibilities for obtaining funds, it was necessary to introduce regulations that would differentiate the projects and the way they are carried out in Poland. In relation to the selected geographical scope in this paper, the main document influencing the type of projects implemented is the Detailed Description of Priority Axes of the Regional Operational Programme for the Silesian Voivodeship (DDPA ROP SV) for 2014-2020, version 21.0. This regulation is a kind of compendium of information related to the European Funds in the Silesian Voivodeship, as it contains not only a detailed description of Priority Axes, but also, inter alia, a description of procedures used to select projects for implementation in the Silesian Voivodeship. This regulation is a kind of compendium of information related to European Funds in the Silesian Voivodeship, as it contains not only a detailed description of Priority Axes, but also, inter alia, a description of procedures used to select projects, methods of calculating the contribution of European Funds to projects, financial plans (necessary to assume the implementation of specific projects), as well as - a description of support for additional territorial instruments for the allocation of EU funds, among which we can mention Integrated Territorial Investments (ITI) or revitalisation measures (Szczegółowy Opis Osi..., 2021, p. 4).

Furthermore, the main document regulating all issues related to the implementation of EU projects in Poland is the Partnership Agreement. This document regulates and indicates all the directions of the European Union intervention - in other words, these are the problematic issues that large-scale European projects should be able to solve. These issues are usually very complex and therefore require increased financial resources. They can be divided into three main directions: Cohesion Policy, Common Agricultural Policy, Common Fisheries Policy (Szczegółowy Opis Osi..., 2021, p. 4).

Considering the area of activity, the overarching document that has the greatest impact on the implementation of territorial activities in Poland is the Cohesion Policy. It is a set of rules that governs the main investment policy in the European Union and is addressed to all territorial areas of the EU. The Cohesion Policy is implemented through three main funds: (1) European

Regional Development Fund (ERDF), (2) European Social Fund (ESF), (3) Cohesion Fund (Wprowadzenie..., 2014, pp. 1-5).

The document that combines the recommendations indicated in the Partnership Agreement and the Cohesion Policy and also refers directly to the Silesian Voivodeship is the DDPA ROP SV. This document was created on the basis of the "Guidelines for a detailed description of priority axes of national and regional operational programmes 2014-2020", and contains information that refers to the general principles and rules for the implementation of the entire programme, the implementation of individual Priority Axes and measures and sub-measures within their framework.

It should be noted that the above-mentioned documents by no means exhaust the pool of available regulations, as the Guidelines and further regulations should also be referred to when implementing undertakings co-financed from the EU funds. Additionally, in the case of each implemented project, the following should be taken into account as basic documents: the application for project financing, rules of calls for proposals (one for each sub-measure), settlement schedules (called payment application schedules in the nomenclature of EU projects) and information and letters addressed to entities by the Managing Authority.

2.2. Actions to support project management during a crisis situation

The COVID-19 pandemic has brought significant changes in human life, business (Zhimin Wang, Zixiao Liu, Junyan Liu, 2020), and project management. The COVID-19 pandemic can certainly be categorised as an emergency. It is an infectious disease that is caused by the SARS-CoV-2 virus. It is transmitted between people during direct contact and causes symptoms similar to seasonal influenza. At the time of the pandemic, information on COVID-19 disease was up to date, so there was a need to constantly review new restrictions and adapt them to project implementation (Duszyński, 2020, p. 10).

Taking into account the medical aspects, the overall situation in the country was regulated by decrees of the Ministry of Health, which affected the regulation of social and professional life throughout Poland, but the situation was so dynamic that it would have been very difficult to track all the changes during the pandemic. This caused considerable difficulties in the implementation of current tasks in projects and the need to take measures to mitigate the effects of the pandemic. Hence, this section of the paper will focus on ways to counteract the negative effects caused by the COVID-19 pandemic.

The COVID-19 epidemic had all the hallmarks of a crisis situation. Considering the concept of a project crisis, it can be characterised as an unforeseen event that has potentially negative effects and can significantly cause the implementation of a project in terms of both production and service, employment, condition and even reputation to be significantly prolonged (Wąsowicz, 2004, pp. 282-289). Another definition is indicated by G. Gierszewska, who defines a project crisis as a pile-up of difficulties that cause a threat to the execution of the

main project activities (Goździewska-Nowicka, Janicki, Słupska, 2016, p. 142). The situation with the COVID-19 pandemic therefore fits into the scope of this type of definition.

A project can be considered to be at risk when there are a number of escalating risks that can directly affect the project's exit from the framework. In such situations, it is essential to turn to the underlying assumptions of the implementation of the project in question and consider whether the cost of the endangered project is still feasible for the sponsor and whether the organisation wants to continue with it (Skalik, 2009, p. 228). In the case of EU-funded projects, the document that governs the relationship between the project organisation and the sponsor organisation is the project agreement - for obvious reasons, this includes provisions for dealing with natural disasters and other strictly emergency situations.

In projects, a crisis can trigger specific reactions. On the one hand, its occurrence can be seen as a state of threat to the continued, correct and effective feasibility of a project, but it can also cause the project team together with the project manager to show additional commitment in order to counteract the difficulties. Nevertheless, solving a crisis during project implementation is possible when project managers look at difficult situations from the point of view not only of the symptoms, i.e. how the situation affects the project, but it is also necessary to look at the causes of the situation (Goździewska-Nowicka, Janicki, Słupska, 2016, pp. 141-142). Furthermore, it should be noted that during a COVID-19 pandemic, quantitative and qualitative changes in a macro-organizational environment may result in additional demands and project team may in turn prioritize dealing with COVID-19 demands over their primary tasks (Koch, Schermuly, 2021, pp. 1265-1283).

Considering the possibilities of dealing with a crisis in a project, there are different ways of dealing with difficult situations. These can include:

- problem-solving cycle, i.e. a series of steps to solve a specific problem within a project, and which takes place in three main stages: formulating objectives, creating solutions and selecting the solution to be implemented (Pawlak, 2006, p. 52),
- updating the project risk management plan, which is the result of activities such as risk identification, quantitative risk assessment, risk handling planning and risk monitoring and management (Żurek, 1999, pp. 65-68). It should be remembered that risks exist throughout the life cycle of projects (Rasool, Franck, Denys, Niandou Halidou, 2012, pp. s78-s98) and should be monitored at every stage of the project,
- use of the scheme of rescuing a project at risk, proceeding in three steps: (1) diagnosing those elements that have influenced the possibility of the project's collapse and, on the basis of these, taking decisive actions that will influence the restoration of the project to its original state of implementation, (2) taking intensified action to quickly identify further risks that could occur as a result of the changes introduced in phase one, (3) extending to include an element of defining checkpoints in the project; not only in terms of the plans to be implemented within the project, but also in terms of the results of the project implementation (Kisielnicki, 2011, pp. 138-141),

- using the competences of the project leader or setting up a group of experts to take a team approach to a project at risk, as the experts' knowledge may come from different fields and industries, thus presenting the project at risk in a different light (Skalik, 2009, pp. 229-231),
- implementation of a contingency plan, which is worth starting from the definition of the threat, its identification and then - determining the cause of its occurrence; a number of activities undertaken here by the project manager should focus both on a broader view of the effects to date on the project and also on monitoring the elements that are necessary and most relevant for the further continuation of the project (Skalik, 2009, p. 245),
- examining the decision-making model - in the case of an event such as a global disease, a consultative model of decision-making, in which the person with authority makes the decision but consults the most relevant members of the project team beforehand, seems important (McGary, Wysocki, 2005, p. 246),
- updating the communication plan, which is a component of any project plan and determines, among other things, who will be involved in the communication process, the frequency of contacts and their form (Wróbel, 2007, pp. 125-127). In this context, it is worth mentioning the use of new technologies, as the literature emphasizes that digital technologies help to become more resilient to future disruptions (Hald, Coslugeanu, 2021).

In the contemporary available literature, there are few sources that can explicitly state what to do in the event of a global pandemic that limits direct contact and carries a high risk of serious illness. Hence, all the issues described above are in some way adapted to the new reality. Considerations in topics related to countering project crises and making (often difficult and consequence-laden) decisions can add a new element to the common knowledge on the topic of supporting project management during a COVID-19 pandemic.

3. Methods

The aim of the paper was to identify and determine factors influencing the successful implementation of EU co-funded projects during the COVID-19 pandemic. To achieve the aim, the following research questions had to be answered: i.e. (1) Did the activities and responsibilities of the team members of the EU projects analysed change as a result of the COVID-19 pandemic? (2) What actions were taken by project management as a result of the pandemic? (3) How did the COVID-19 pandemic affect project participants? (4) How were projects implemented during the COVID-19 pandemic evaluated? (5) Is there a need to continue

to use the surrogate activities used during the COVID-19 pandemic during project implementation under 'normal' circumstances?

The diagnostic survey method was chosen to realise the objective adopted in the paper, which consists of collecting information and facts in terms of assessing both functional and structural phenomena. On the occasion of the application of this method, it is also possible to draw conclusions on the dynamics of the development of the above-mentioned phenomena (Apanowicz, 1997, p. 60). Bearing in mind that the nature of the research was individual, and that the information was analysed in relation to each of the respondents, a standardised interview technique was chosen, and for it - a proprietary tool was created, i.e. an interview questionnaire. In addition, the method of document research - desk research - was applied, in this way, using comparative analysis it was possible to juxtapose the subjective statements of the surveyed persons and the factual state, the image of which was the documentation presenting the direct implementation of individual steps in the projects.

The interview questionnaire was designed to ensure that the answers to each question conveyed a sense of the changes being made within the EU project, taking into account the activities implemented during project implementation during pandemic COVID-19. Interviews were conducted among members of the project teams. The interview responses were designed to identify possible changes and their impact in terms of project implementation during pandemic COVID-19 from the perspective of a person involved in working on a specific project. In turn, the documents that were considered in the analysis process were: (1) grant applications presenting model assumptions for project implementation; containing information on budget, indicators, expenditures, funding levels and other substantive information directly serving project implementation, (2) payment applications (substantive and financial reports on interim project implementation), (3) payment application schedules (regulating the frequency of payment applications; defining tranches of individual partial funding), (4) guidelines published by Managing Authorities, (5) letters and decisions (correspondence between project implementers and other stakeholders in a broad sense).

The research carried out covered the period from 1.01.2019 to 30.10.2021 and the territorial scope covered the Silesian Voivodeship.

The collected research material consisted of twelve in-depth interviews. The respondents were both men (one person) and women (eleven people). The youngest person interviewed was 24 years old (female) and the oldest was 41 years old (female). The people taking part in the study were members of the teams of 3 EU projects and they actively participated in the projects described, so that their statements are a complete record of the reality that took place during the time period studied. Prior to the survey, respondents were informed of the confidentiality of the research.

The respondents took part in 3 different projects, which belonged to two different Actions related to EU funding. Project No. 1 and project No. 2 had similar methods of implementation and settlement, while project No. 3 in its assumptions and structure was definitely different

from the previous ones. Table 1 presents the characteristics of the projects in which the respondents participated.

Table 1.

Characteristics of the projects in which respondents were involved

	Project No. 1	Project No. 2	Project No. 3
Priority Axis:	IX. Social inclusion		VII. Regional labour market
Action:	9.1 Active inclusion		7.1 Active forms of counteracting unemployment
Sub-measure 9.1.3	Active inclusion programmes for people and groups at risk of social exclusion – SIA (Strategic Intervention Area)		Improving the employability of jobseekers and unemployed people - competition
Selection mode	competition		competition
Project implementation period	1.01.2019 - 31.12.2020		1.01.2021 - 31.12.2022
Budget	approx. PLN 2.5 million	approx. PLN 2.5 million	approx. PLN 1.5 million
Project objective	increase the level of social activity of the inhabitants of a neighbourhood in a specific municipality by implementing community-based activities of an integrative nature in accordance with the community organising method		increase in the labour market participation of economically inactive, unemployed or under low-wage civil law contracts over 30 years of age through specific vocational support
Number of persons planned to be supported	200	200	108
A project team directly involved in one project	7 persons, including project management	7 persons, including project management	3
Selected key indicators to be achieved	<ul style="list-style-type: none"> • total number of people taking part in the project (200 per project), • number of people with disabilities participating in the project (20 per project), • number of people who took part in the vocational training and wish to become employed or employed after leaving the project - approximately 35 people per project. 		<ul style="list-style-type: none"> • total number of people taking part in the project (108 in total), • number of people with low qualifications (54 people), • number of unemployed persons supported by the programme (50 persons), • number of people working after leaving the project (61), • number of people who obtained qualifications (40 people), • vocational effectiveness - defined as taking up a job and keeping it for at least three months after leaving the project (61% of all people supported in the project).

Source: own study.

As it results from the analysis of Table 1, Project 1 and Project 2 were implemented by the same entity - a foundation. They had similar assumptions and structure, they were also treated as 'twin' projects in the nomenclature of the Marshal's Office, which meant that they had the same implementation time and very similar project assumptions in common. These projects assumed the implementation of stationary support for people who would be interested in changing their often disadvantaged social situation. The aforementioned support was of an educational and training nature, and all activities undertaken as part of the project had to

comply with the detailed project budget. Project No. 3, on the other hand, was implemented by an enterprise and consisted of structured vocational support aimed directly at the needs of people who were disadvantaged in the labour market. The start of activity in the project was preceded by forms of support related to the identification of needs within specific persons (career counselling, job placement). The next step of participation was to take part in vocational training, which was an opportunity to change or acquire a profession. Selected individuals also had the chance to undertake a paid three-month work placement as part of the project.

4. Results

This section of the paper presents the results obtained. The first of these **concerns the activities and responsibilities of the respondents in the projects analysed**, as shown in Figure 1.

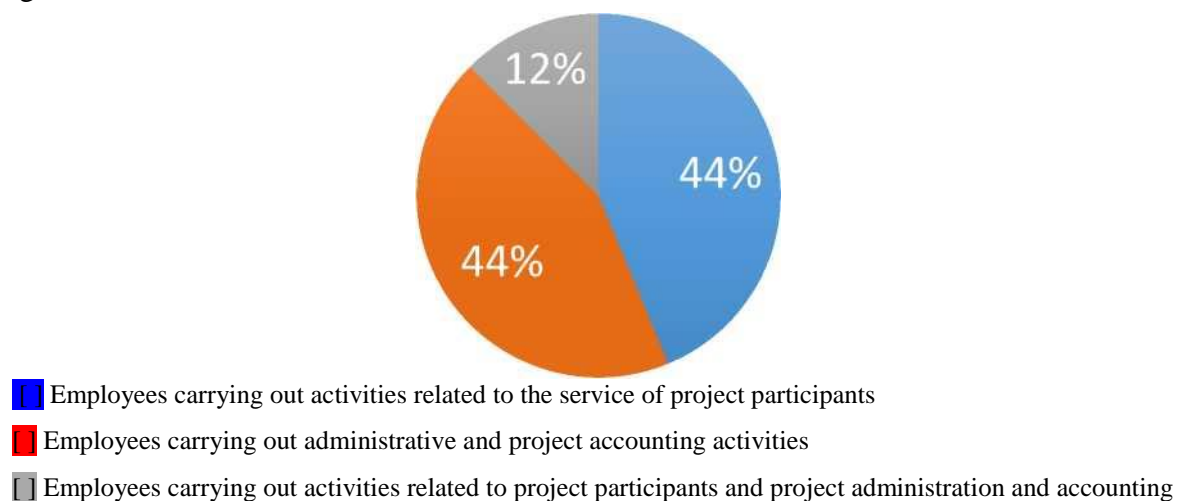


Figure 1. Activities and responsibilities of respondents in the analyzed projects.

Source: own study.

12% respondents from the entire study group dealt only with issues related to project accounting which is why for this group carrying out their daily work during the COVID-19 pandemic was not so difficult. For the remaining respondents, it became necessary to find methods that could replace contact with participants in the project. The specificity of the projects described was to support disadvantaged people, so project participants were often elderly people (who find it difficult to switch to communication devices), or jobseekers or the unemployed (these participants in turn often faced a financial barrier and could not afford to switch to remote contact). Therefore, it became necessary to be creative in contacting participants in the project and to find alternative methods of contact, which, on the one hand, would comply with the pandemic restrictions (not endangering one's own and the project participant's health) and, on the other hand, would allow the projects to achieve the right results.

Another element analysed was the **impact of the pandemic on the project's work performance**. It can be inferred from the respondents' answers that there was a change in working conditions as a result of the pandemic. Particularly noteworthy is the fact that there was a virtually complete shift to remote working/hybrid working/shift work in relation to the pandemic period - this was a decision forced by the pandemic restrictions, in which it was important to observe the principles of social distance. However, given that many of the project participants were unable to visit the organisation's premises in any case, due to their age or illness, the decision to change to remote and shift work seems a good one. In addition, the pandemic affected the way existing work duties were carried out. In the initial phase of the epidemic, changes had to be made quickly and with no guarantee of success - as the situation was unknown. The management consulted changes with the middle level, so elements of consultative decision making can be seen. There was also a problem when any staff member ended up on sick leave due to COVID-19 infection, as evidenced by the documents underpinning each staff member's work commitment, such as attendance lists. In addition, when an individual employee became infected with COVID-19, the whole team was placed in quarantine, as described in the payment claims submitted to the Intermediate Body. This meant that decisions had to be made more than once for smaller staff teams.

Project management actions taken in the wake of the pandemic were the next area of study. The results of these analyses are shown in Figure 2.

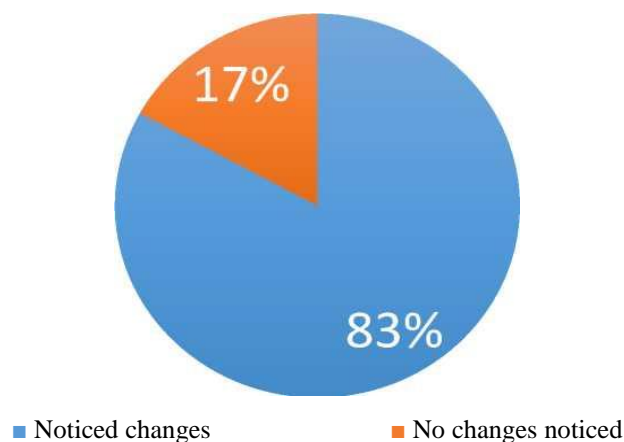


Figure 2. Respondents' assessment of changes in management activities in the face of a pandemic.

Source: own study.

As can be seen from the analysis of Figure 2, there is a discrepancy in the answers of the respondents due to which project they worked in and which issues in the project they had to deal with on a daily basis. The project teams in Project No.1 and Project No. 2 (in total 83% of respondents) were generally larger and based on the decisions of the project management. In addition, they were working in a mode of constant change and many unknowns, which compounded unfavourable situations that could cause many problems in their projects. The changes implemented by the management were assessed as sufficient for the project, although there was also a voice that indicated that more could have been done in this regard.

There were also recurring elements of greater flexibility in decision-making regarding staff - laptops and mobile phones were issued to all project team members on the basis of handover protocols. In the case of project 3 (17% of respondents), no major changes were observed - this is due to the fact that the two people hired to handle this project were closely associated with the management and, in addition, started the project at a time when much was already known about the pandemic itself. The need for change at such a point in time was therefore not that great, as can be seen in the statements of the respondents.

With regard to the respondents' response to the topic of the **impact of the Covid-19 pandemic on project participants**, all respondents agreed that project participants felt the changes associated with project implementation. Much depended on the specific characteristics of the individual - older people went through this difficult period in a different way to young people, for example. However, with more and more knowledge available about the disease itself and subsequent cases of the disease, people (in the sense of society) learned over time to live with the pandemic. Participation in the project is no exception. For those who really cared about the support offered, adapting to the new rules went much faster, although one can find statements that some participants wanted to drop out for various reasons. It is worth noting a major change, which none of the respondents wrote about explicitly, but elements of which are present in the statements - is a change in the way of communication. It has changed dramatically, both from the point of view of the team member - project participant (leaving face-to-face communication in favour of remote contact) and also from the point of view of the management - team member (implementation of remote communication methods, remote meetings via the Messenger platform, a large role of telephone contact and even - a group on Whatsapp messenger). One can also notice traces of pandemic restrictions in the statements of Staff carrying out activities related to project participants and project administration and clearance the Staff carrying out activities related to project participants and project administration and clearance respondents - in the projects implemented by the foundation, masks, visors and other personal protective equipment or disposable office supplies were issued on the basis of the attendance lists (when there was already the possibility of group meetings in the projects). However, all the substitution measures described here, aimed at project participants, are nothing more than the creation of new rules of operation in the project, which is directly related to the contingency plan - implemented to ensure that the project has a *raison d'être* and produces the predefined results despite the problems.

Considering the respondents' **evaluation of the success of the projects** following the changes imposed by the pandemic, in the case of projects No. 1 and No. 2, in addition to confirming the information obtained from the analysis of the documentation, it can be concluded that many respondents expressed satisfaction with the results of the projects - and not only related to the achievement of indicators, but also satisfaction with helping other people. Thus, it can be concluded that respondents mainly evaluated the success of the project through the prism of the satisfaction of the project recipients, who in this case were the

participants in these projects. In the case of project No. 3, the information obtained from the respondents confirms the picture drawn from the analysis of the documentation, i.e. the project has all the hallmarks of a successful undertaking. This indicates that the stage of preparation of project assumptions, even before the start of its implementation, was correctly realised. The construction of the grant application itself is therefore also correct and with further effective actions and no delays the project has a good chance of success.

The final element of the study was an analysis of whether, in the opinion of the experts, it was justified to **continue carrying out replacement activities** in the projects analysed. Its results are presented in Figure 3.

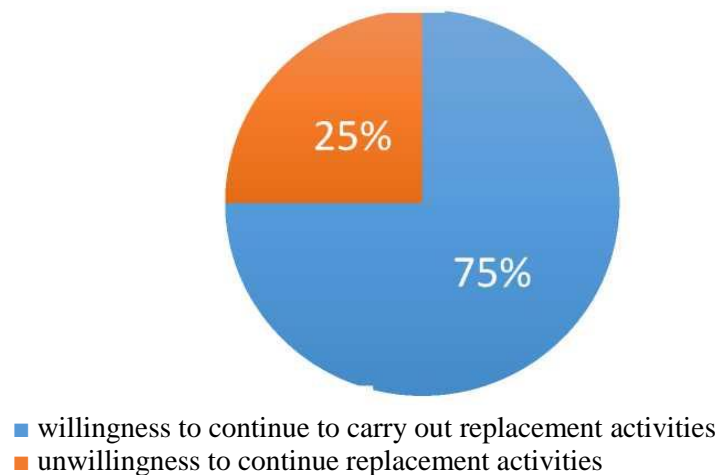


Figure 3. Respondents' willingness to continue replacement activities.

Source: own study.

As can be seen in Figure 3, 25% of respondents have unwillingness to continue to carry out replacement activities and as many as 75% have willingness to continue to carry out replacement activities. In the opinion of the respondents, the pandemic nevertheless brought with it some positive developments that can be used in further project implementation. These are subjective in nature, but show what good can be learned from a project crisis situation. Respondents emphasised here that a form of remote working, electronic documentation or remote meetings should as much as possible be a part of modern work, because in many cases it strongly improves and speeds up activities. At the same time, however, they emphasised that in some situations, such as conducting training courses, direct contact is absolutely necessary. Flexible working hours and the possibility to work any hours were also mentioned as an advantage. Remote recruitment was also pointed out as a good complement to traditional recruitment.

5. Conclusions

In summary, based on the research conducted, it is possible to detail factors that had a positive impact on project implementation during the COVID-19 pandemic and that can be applied to emergency situations. These included:

- appropriately high level of knowledge among project team members of their responsibilities and of the sources of information on the progress and implementation of projects, including: data on risk factors that may affect the implementation of the projects of which they are a part,
- personality factors of the team members, including - the ability to adapt to the current situation, to work under pressure, creativity in the choice of means of communication, the ability to learn quickly and for the project team and project management to have communication competence - also with regard to finding new channels of communication,
- ability to communicate technology-related knowledge effectively to project participants, including older people,
- management's willingness to provide employees with the appropriate tools and technology to perform work remotely if necessary to further support the project implementation,
- management's flexibility in deciding on a work schedule that will promote employee safety.

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PROCESS ANALYSIS - PROJECT STAKEHOLDER MANAGEMENT IN A SELECTED OUTSOURCING COMPANY

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Introduction/background: A great many factors influence the course of a project. Both internal and external ones. One of the most important of these is undoubtedly the project's stakeholders, i.e. all those persons or entities who have an influence on and interest in the project. Stakeholder management focuses on the relationship between the project company and its stakeholders. These relationships can have both positive and negative impacts on the success of the project.

Aim of the paper: The aim of the paper is to diagnose and analyse the project stakeholder management process in a selected outsourcing company.

Materials and methods: This paper is based on a critical analysis of the literature and a questionnaire survey among 56 employees of the outsourcing company under study.

Results and conclusions: Based on the results obtained from the questionnaire survey, the rationale for improving project stakeholder management in the surveyed outsourcing company was identified.

Keywords: stakeholder management, outsourcing, project management, project success.

1. Theoretical basis for project stakeholder management

Stakeholders are individuals or a group of individuals directly involved in a project. In the literature we can come across many definitions describing who stakeholders are. Among the most common characteristics of stakeholders in these definitions are their influence on the achievement of the objectives and the implementation or completion of the project (Dinsmore, 1990), the fact that they have a "vested interest in the outcome of the project" (Cleland, 1985) and that they have an interest in it (Wright, 1997). In the European commission publication Aid delivery methods 2004 you can also find a definition where stakeholders are not only individuals but also institutions whose direct or indirect influence can be both positive and negative (European Commission, 2004).

They all have in common the fact that they are influenced by the project, and have an impact on the project and thus on the activities of the organisations that carry out the project. According to R.E. Freeman's assumptions about stakeholders, each stakeholder wants his or her interest and opinion to be prioritised. This implies that there are specific expectations of the stakeholder from the company carrying out the project. The stakeholder expects the completion of their designated tasks as soon as possible. These assumptions serve the decision-making processes taken by organisations during the implementation of a given project (Encyclopedia of Management).

Among the stakeholders, we can distinguish two main subgroups related to the implemented project. These are internal and external stakeholders. Both the former and the latter have an equal influence on the initiation, course and success of a project.

Understanding the importance of stakeholders to the effective and efficient implementation of projects has led to the development of principles, ways and instruments for interacting with them that make up what is known as project stakeholder management (Trocki, Grucza, 2009). In fact, according to J. K. Pinto, stakeholder management consists, as in the case of a project, of the process of planning, organizing, directing, motivating and controlling the resources necessary to deal with various groups of external and internal stakeholders (Pinto, 2009).

Project stakeholder management includes the processes necessary to identify individuals, groups or organizations that may influence or be influenced by the project, in order to analyse stakeholder expectations and their impact on the project, and to develop appropriate strategies for stakeholder involvement in decisions and execution (PMBOK Guide, 2013). In addition to identifying them all, it is important to consider and analyse their expectations and impact on the project, because as Cleland and King point out (Cleland, King, 1998), they influence the project at all times.

Stakeholder management includes three phases: analysis, planning and implementation, which are linked to the various project management processes. This is because it is important to effectively involve all of these individuals and groups in the work of the project. This is because an important part of stakeholder management is not only establishing, but constantly maintaining communication with stakeholders and identifying their needs. Stakeholder management is mainly related to the sphere of contacts between people involved in the project.

2. Research methodology

The aim of the research contained in this paper was to diagnose and analyse the project stakeholder management process in a selected outsourcing company. In order to achieve the main objective of the research, an attempt was made to find answers to the following research questions:

- Does the surveyed outsourcing company use project management methods, if so, which ones?
- Are project stakeholders identified during project planning and what methods and tools are used?
- Does and how does the company manage and interact with its stakeholders, and what factors influence stakeholder relations?
- How does the surveyed company communicate with project stakeholders?
- What is the degree of stakeholder influence on project parameters?
- What stakeholder attributes influence project success?
- What is the impact of stakeholders on the success or failure of the project?

In order to obtain answers to the research questions posed, a questionnaire survey was carried out based on a prepared survey questionnaire. The survey questionnaire was developed on the basis of a critical analysis of the literature on the topic of the paper. The questionnaire was distributed via the Internet and took the form of an online survey distributed using Microsoft Forms application in the internal network of the surveyed company. The survey was prepared in two language versions - English and Polish. The survey was conducted between January 2022 and April 2022.

The survey questionnaire contained closed and open-ended questions. It consisted of 23 questions, of which 21 questions were closed questions and the remaining two were open questions. The first 4 questions were aimed at identifying and characterising the surveyed group of respondents (metrics). The next two questions were about the impact of stakeholders on the project. The next questions were about stakeholder identification, stakeholder involvement and numbers, and the stakeholder attributes that have the greatest impact on the project. The survey also explored respondents' attitudes towards the project, project management methods and methodologies used, modes of preferred communication and stakeholders' expectations of the project. The final three questions of the survey explored the success or failure of projects and respondents' views on the impact of stakeholders on project success and opportunities to prevent project failure.

The selection of the research sample was purposive. The request to complete the questionnaire was sent to employees of the surveyed outsourcing company who directly managed projects or indirectly manage project stakeholders. These individuals were identified by analysing their job description according to the company's existing structure.

Statistical methods such as arithmetic mean, median, percentage were used to analyse the survey results obtained.

3. Survey results

Fifty-six respondents took part in the survey, with the questionnaire being sent to 70 respondents, representing an 80% return of completed questionnaires. Respondents who participated in the survey were 45% (25 people) with a Master's degree. Those with a Bachelor's degree taking part in the survey represented 30%. The remaining groups were those with a master's degree in engineering (6% of respondents), postgraduate education (6%) and the smallest group of respondents had a secondary or baccalaureate degree. More than half of the respondents, i.e. 34 people, had completed more than 6 projects in the last five years, with 13 people (23%) having completed more than 10 projects. A quarter of the respondents (14 people) had carried out between 3 and 5 projects in the last five years and 8 people (14%) had carried out only one or two projects. Respondents to the survey are those who have worked for the company for more than seven years - 19 people (34%). 25% (14 people) of respondents are employees who have been with the surveyed company for five to seven years, and 13 respondents (23%) have been with the company for three to five years. Five respondents (9%) have been with the company for less than one year and only five people (9%) have been employed with the company for one to a maximum of two years. The respondents of the surveyed outsourcing company are mostly employees of the Operations department (22 people - 39%) and the Service Readiness department (20 people - 36%). Three (5%) of them were employed in the Vendor Management department, two (4%) respondents each worked in the Account Management and Products departments. One (1.5%) each worked in Delivery and Sales. Five respondents (9%) worked in other departments.

The data collected shows that the vast majority of respondents have experience of working on projects in the outsourcing company surveyed and are employed in a department that has close contact with project stakeholder management. In addition, the vast majority have completed a larger number of projects in recent times, which provides a basis for their opinion and assessment of the impact of stakeholders on project success.

3.1. Application of project management methodology in the outsourcing company under study

According to the respondents, project management methodologies are used in the surveyed outsourcing company, as evidenced by 73% of positive answers. Only 14% of respondents, i.e. 8 believe that no methodologies are used in the company, while 7 have no opinion. The most commonly used methodologies are the traditional ones, such as Kanban and the waterfall model. 18 respondents indicated that they use Agile, 13 respondents use PRINCE2 and 26 respondents use Six sigma and Lean Management. Only five respondents indicated that they use the Project Management Body of Knowledge and Project Management Institute methodologies. 22 respondents answered that they also use other methodologies not specified

in the survey. Building an organisational policy, following the procedures and processes within it can sometimes be difficult to reconcile with stakeholder expectations. The survey shows that this is usually possible, but sometimes it conflicts with stakeholder interests. 23 respondents, or as many as 41%, believe that the organisational policies, procedures or processes built do not allow stakeholder expectations to be taken into account. The implication is that current company policy may in some cases hinder the implementation of a project or require an individual approach with the client in order to reach a compromise and thus the success of the project.

3.2. Identification of project stakeholders at the project planning stage in the surveyed company

When starting a project and planning its course, one of the key tasks is to identify the project stakeholders. Knowing who you will be working with or potentially dealing with is essential to planning how you will work on a project. By identifying the project stakeholders, we can plan how many people or groups of people we will communicate with, how much communication will take place and we can speculate on which stakeholder relationships may present possible difficulties later in the project.

In the surveyed outsourcing company, between 6 and 10 stakeholders are involved in the project according to the answers given by the respondents, this was indicated by as many as 36% of the respondents, i.e. 20 people. 28% of respondents indicated that between 1 and 5 stakeholders are involved in their project and 23% work in a project involving between 10 and 20 stakeholders.

In the surveyed companies, respondents identify stakeholders based on their own and others' experiences (71%, i.e. 30 people), by heuristic methods, i.e. brainstorming (26 people) and by using a stakeholder matrix (36%, i.e. 20 people) and the organisation's stakeholder register (29%, i.e. 16 people). Only 9% of the respondents (5 people) indicated that they use benchmarking for stakeholder identification and 6 people (11%) also indicated other stakeholder identification methods and tools not specified in the questionnaire. From the responses received, it appears that 6 people (11%) do not identify project stakeholders. It can therefore be concluded that the vast majority of respondents do not use specific stakeholder identification methods, but base the process on their own experience, intuition, logic or information exchange with other project participants. Figure 1 shows the methods and tools used to identify project stakeholders.

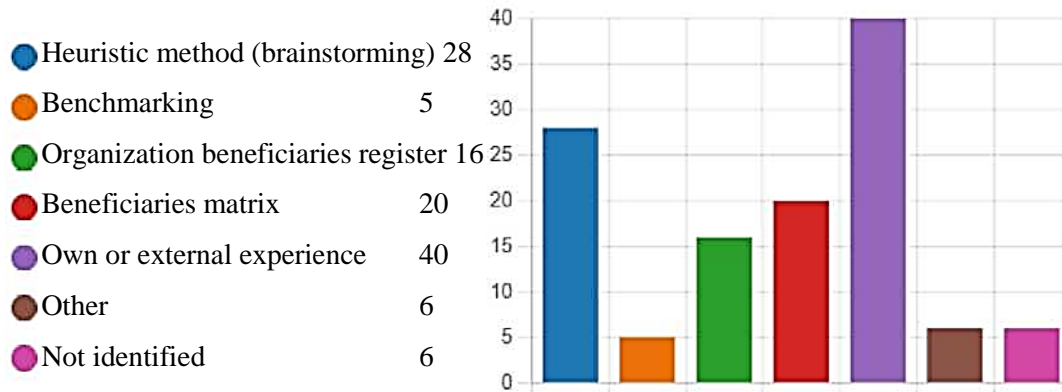


Figure 1. Methods and tools for identifying project stakeholders.

Source: own study.

3.3. Performance management with project stakeholders

Respondents, according to the answers given, manage stakeholder relationships (68% of respondents). Achieving the organisation's mission is a key part of any business. Every employee should constantly remember to fulfil their responsibilities based on it. The responses show that by building relationships with stakeholders, the vast majority of respondents, as many as 79%, achieve the organisation's mission. However, 12 respondents (21%) say the opposite which we can interpret in two ways. Either the organisation's mission conflicts with the building of stakeholder relationships (which, however, seems unlikely), or the stakeholder relationships being built are not in line with the organisation's mission. However, among these 12 respondents, two do not manage stakeholder relations at all. We can therefore conclude that the actual percentage of respondents who build stakeholder relationships that do not allow the organisation to achieve its mission is only 3%.

In project management, stakeholder relationship analysis can assist in planning project work and also help to forecast the occurrence of potential difficulties. This can contribute to increasing the probability of project success. Identifying stakeholder expectations based on their needs certainly has an impact on stakeholder communication, and meeting these needs can sometimes improve the quality of project delivery. When we identify stakeholder expectations and needs correctly, we can avoid communication noise that can disrupt the project. The survey responses show that 71% of respondents carry out a stakeholder analysis, i.e. who the project stakeholders are and what they expect. However, 29% of respondents do not carry out such an analysis. This can not only affect the success of the project, but also hinder ongoing collaboration.

An important factor influencing stakeholder relations, especially in multinational companies or those that collaborate with other foreign companies, is the culture of the country and of the region. Another equally important factor influencing stakeholder relations is the experience of the stakeholders as well as the project team itself. There are also internal factors

within the company, i.e. factors that are directly influenced by the company, such as the bonus system for an employee based on the performance evaluation on a particular project. At the same time, there are also external factors, i.e. factors on which the company has only indirect influence, for example the prestige of the implemented project. In the surveys conducted, respondents identified factors that influence the relationship with stakeholders. Among the key factors influencing relations with stakeholders, as many as 49 people (88%) indicated experience, 39 people (70%) indicated the culture of the country. Conversely, 25 people (45%) of respondents felt that internal factors influence stakeholder relations and 15 people (27%) felt that external factors do. Factors such as common language, soft skills, analytical skills, knowledge of the implementation environment, policy, legal changes, communication, mutual respect, attitude, relationship and trust were also among the indications of respondents. Figure 2 shows the factors influencing stakeholder relations in the surveyed company.

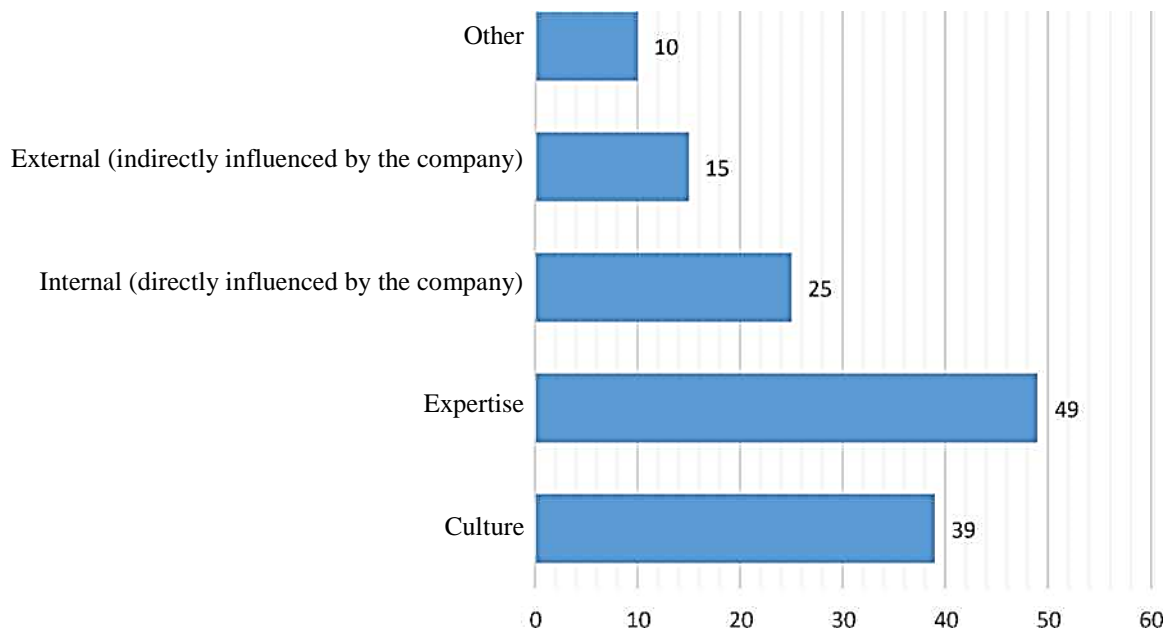


Figure 2. Factors influencing stakeholder relations in the surveyed company.

Source: own study.

3.4. Type of communication with project stakeholders in the surveyed company

Ways of contacting both stakeholders and colleagues have undeniably changed since the outbreak of the Covid-19 pandemic. Originally, people were forced to contact each other via telephone and the internet. As restrictions eased, the possibility of personal contact increased significantly. The change that occurred may have been a hindrance for some, but for others it may have been a more comfortable form of contact. In the company surveyed, online meetings are the preferred form of communication with stakeholders. A similar, but slightly lower level of popularity than online meetings was also enjoyed by personal contact and email. Contact via chat was most ambivalent about, but a positive attitude to this form of communication prevailed. The survey also found that telephone contact was the least preferred form of contact

with stakeholders. This may be partly due to the fact that not all employees in the company have access to a company phone, and using a private phone for business purposes can be costly and uncomfortable.

3.5. Degree of influence of stakeholders on individual project parameters

The timeliness of the project, the quality of its execution and the scope of work and budget are the main project parameters that can be influenced by stakeholders. The degree of this influence is difficult to quantify. However, it is possible to see during project work that some of these parameters are less influenced by stakeholders and others more influenced during the project. Employees of the outsourcing company surveyed believe that project stakeholders have the greatest influence on project quality. Slightly less influence was observed in the aspect of the timeliness of the project. Much less influence was observed in the aspect of project scope and the least influence was observed in the aspect of project budget.

3.6. Stakeholder attributes influencing project success

In addition to the fact that stakeholders can influence project parameters, it is significant that stakeholder attributes themselves can influence project success. The stakeholder identification referred to earlier may allow the identification of those attributes that have the greatest impact on project success or failure. Respondents indicated that communication with stakeholders has the greatest impact on the project (50%). One fifth of respondents (11 people) indicated that their involvement in the project was the most important. 7 people (12%) responded, that stakeholders' experience is the most important influence on the project and slightly fewer (9%) that their motivation is the most important. Only 3 people (5%) thought that the stakeholders' attitude towards the project was the most important. The remaining two people indicated other attributes not specified in the survey. This suggests that communication with stakeholders is the aspect that most strongly influences the project and should therefore be strongly considered in project planning. This can take place through pre-planned regular meetings, conferences, assemblies, meetings and the like. Figure 3 illustrates the stakeholder attributes that influence project success.

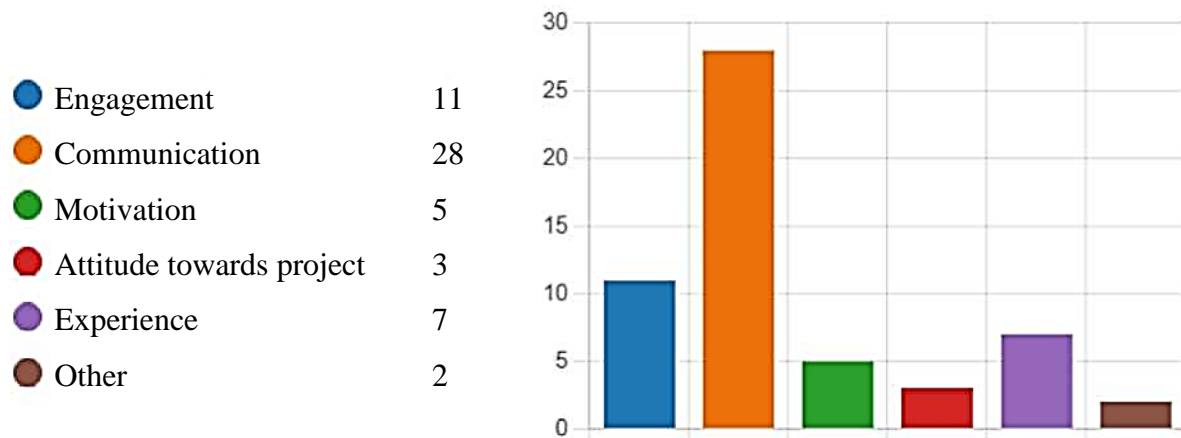


Figure 3. Stakeholder attributes that influence project success.

Source: own study.

3.7. Influence of project stakeholders on the success or failure of the project

Respondents of the surveyed company (with the exception of one respondent), say that stakeholders have a high (17 people - 30%) or very high impact (28 people - 50%) on the success of the project. 10 respondents considered that stakeholders have a medium influence on the success of the project. This allows us to conclude that the influence of stakeholders on project success is a key element that should be taken into account when planning and implementing a project. When talking about the success of a project, one should not only think about the fulfilment of the project's objectives, the completion of the tasks or the achievement of the set goal. A project can only be successful if it is completed on time. Failure to meet the project deadline does not necessarily mean that the project has failed completely, however, it may be related to its incomplete success. In the surveyed outsourcing company, as many as 80% (45 people) took part in a project which was not successful, i.e. a project which did not meet the assumed premises and did not finish on time. This suggests that there were some difficulties in these projects, which may not have been taken into account when planning the project.

Project failure can result from many different factors. Changing circumstances, changes in personnel, changing needs of the contracting authority, and other internal and external factors can make changes to a project or even make it fail. Stakeholders can also have an equally strong influence on its success or failure. From the survey responses, the failure of the project in which the respondents were involved was largely related to stakeholders. Of the 45 people who experienced project failure, two thirds (30 people) indicated that the project was not successful because of a stakeholder or group of stakeholders. The opposite opinion was held by 15 people. This therefore supports the assumption that stakeholders are a key role in projects and that effective stakeholder management can help to reduce the risk of project failure.

4. Recommendations for improving stakeholder management in a selected outsourcing company

Based on the results obtained from the surveys, participatory observation and the experience gained as a member of the project team at the surveyed company, it can be concluded that, despite the best efforts, in order for the project plan to be successfully implemented as a key factor, it is necessary to take into account the cooperation with the project stakeholders and at each stage of the project implementation to revise the established plan in this regard. While making changes may prove difficult for some, it can be a key factor that will ultimately lead to project success. In order to improve the management of project stakeholders in the studied enterprise, it is suggested to implement the following measures:

1. Wider use of agile management methodologies, so as to plan the various stages of projects more in real time, or to adapt more flexibly to customers' expectations.
2. More in-depth analysis and identification of all stakeholders during the project planning phase.
3. Develop and introduce a consistent stakeholder identification model, which will be valid in the company.
4. Develop internal standards for project stakeholder management using a permanent workflow based on proven management models and methodologies.
5. Detailed planning of collaboration with project stakeholders taking into account the preferences and effectiveness of different communication channels.
6. Carry out systematic supervision and control of the progress of the project, especially with regard to the completion of tasks, timeliness and quality of services delivered.

5. Summary

A survey conducted at a selected outsourcing company provided insight into the stakeholder management process in projects there.

The results from the surveys show that the selected outsourcing company does not have developed stakeholder management tools. The company's employees use a variety of methods to identify and manage stakeholders and rely heavily on personal experience (71%) and heuristic methods (50%).

Online and face-to-face meetings proved to be the most preferred form of contact with stakeholders according to survey respondents, indicating that real-time contact with the possibility of non-verbal feedback is an important part of relationship building and collaboration for respondents.

Significantly more of the company's projects than expected are not fully successful (80% of the respondents were involved in a project that was not fully successful) and, according to the respondents, this is very often influenced by individual stakeholders or stakeholder groups - this opinion was expressed by one third of the respondents. At the same time, the same number of respondents said that these failures could have been prevented by better stakeholder management.

Based on the results from the surveys, the rationale in for the improvement of the company to improve stakeholder management was identified. It was recommended that the company should focus more attention on stakeholder management in the project planning and stakeholder identification phase and keep a close watch on the project progress, especially when it comes to internal project stakeholders.

In addition, it was suggested that there is a need for a greater exchange of experiences from the projects carried out and the development of schemes and approaches to improve stakeholder management and thus reduce the rate of project failures.

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IMPACT OF EU FUNDED PROJECTS ON STRENGTHENING LOCAL COMMUNITIES IN ZBROŚLAWICE MUNICIPALITY

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Introduction/background: Raising the standard of living of local communities is one of the objectives of activities undertaken by local government units. The most important and essential in regional development is therefore social development. One of the stimulators of regional growth are European Union funds. The improvement of the social and professional situation of the residents of municipalities in the Silesian Voivodeship has been mainly influenced by EU funds implemented through the Regional Operational Programme of the Silesian Voivodeship 2014-2020 under the European Social Fund (ESF). The municipality of Zbroślawice has implemented several such projects.

Aim of the paper: The aim of the paper is to examine and analyse the impact of ESF-funded projects implemented in the municipality of Zbroślawice to strengthen social and professional activity of local communities in the period 2019-2021. The paper is based on research conducted for the master's thesis of Marcel Nalepa, whose scientific supervisor is Dr. Joanna Toczyńska.

Materials and methods: In the study, cabinet research was conducted on the basis of data from the Central Statistical Office using the methods of universal statistics on the analysis of the socio-demographic situation of the Municipality of Zbroślawice. The aim of the research was to identify problem areas prior to the start of the social projects implemented in the period 2019-2021. Subsequently, field research was conducted in the Municipality using the method of comparative analysis of project documentation and reporting documentation on two ESF-funded projects in order to determine the degree of achievement of the assumed target indicators in the projects. The research further involved a diagnostic survey of the opinions and perceptions of project participants using a questionnaire method.

Results and conclusions: As a result of the research, weaknesses and problem areas in the level of social life of the Municipality's residents were identified and solutions were proposed in the form of the need to implement specific projects. In addition, the research hypothesis assuming that the actions taken by the Municipality of Zbroślawice and the projects implemented in the period 2019-2021 contributed to strengthening the social and professional activity of local communities and strengthening the human potential of the Municipality was confirmed.

Keywords: EU projects in the municipality, social projects in local governments, impact of EU projects on social participation.

1. Strengthening human potential as an objective of regional development

Regional development is defined in various ways in the literature on the subject, but the central idea that runs throughout is that of the people who live in the region. It is the people living in a region who have the greatest influence on it. Regional development can result in:

- increasing the economic development of a region,
- improving the living standards of local communities (e.g. reducing the unemployment rate for a given region),
- developing the competitiveness of the local authority.

The development of individual local government units in aggregate can contribute to the development of the whole country, which is one of the tasks of the public administration (Właźlak, 2010, p. 42).

At the state level, these activities are referred to as regional policy, while at the regional level, as local policy. The function of local policy is to strive for the development of local communities living in communes and districts. The stimulants for development are the determinants directly related to society, i.e. the needs of the community, the culture and the attitude towards implementing regional change.

Continuously since Poland's accession to the European Union, all local government units (LGUs) - municipalities, districts, voivodships - have benefited from sources of funding from European funds. The municipality of Zbroslawice is a relatively small municipality with extensive needs for support under various European Union aid programmes. At present, the municipality of Zbroslawice is located in an underdeveloped region with a GDP per capita level below 75% of the EU-27 average. The fact that the municipality belongs to such a region results in a higher level of project co-financing than in more developed regions.

2. Municipality of Zbroslawice as a beneficiary of EU funds in the programming period 2014-2020

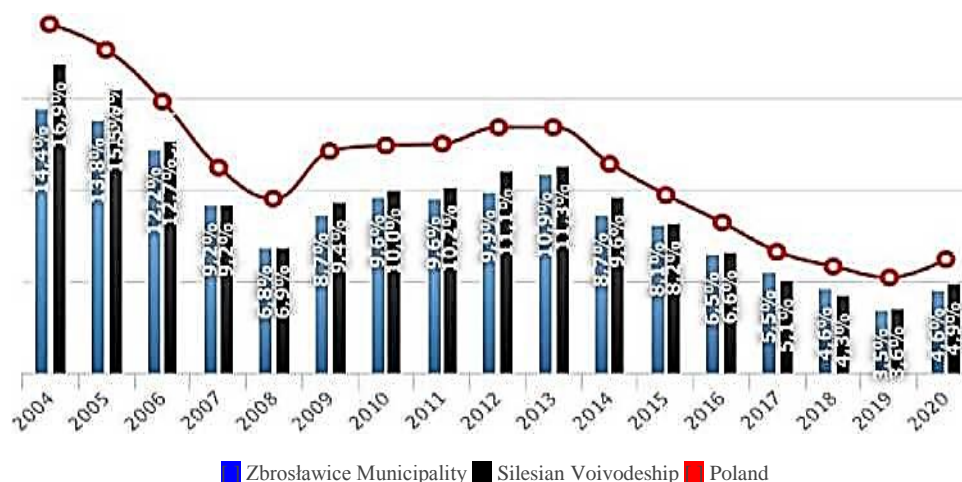
The municipality of Zbroslawice is located within the boundaries of the Silesian Voivodship of Tarnogorski powiat. The area of the municipality is 148 km², of which over 98 km² is agricultural land (<https://bdl.stat.gov.pl/>). As of the end of 2020, the municipality of Zbroslawice had 16,385 residents, of which 49.7% are men and 50.3% women. Between 2008 and 2021, the number of residents increased by 3.5%. The average age of the residents of the municipality is comparable to the average age of the Silesian Voivodship and the whole country and is 42.1 years. The largest group is made up of those aged 35-49 (<https://bdl.stat.gov.pl/BDL/...>). Details are presented in Table 1.

Table 1.*Demographic structure of the population of Zbroslawice Municipality as at 31.12.2020*

Description	Total	Women	Men
Population	16 385 (100%)	8 234 (100%)	8 151 (100%)
Pre-reproductive age (0-17)	2 898 (17.7%)	1 419 (17.2%)	1 479 (18.1%)
Working age (18-59 for women) (18-64 for men)	10 026 (61.2%)	4 598 (55.8%)	5 428 (66.6%)
Post-working age (Women > 60 Men > 65)	3 461 (21.1%)	2 217 (26.9%)	1 244 (15.3%)

Source: Own study based on Central Statistical Office data.

According to the data, there are only 171 people working per 1000 residents in Zbroslawice municipality. This is significantly less than the same figures for the voivodeship or the entire national territory. In 2020, the average salary in Zbroslawice municipality was PLN 4858 gross, which is much lower than the average salary nationwide, which was PLN 5523 gross in this period. A large proportion of economically active people go to work outside the municipality of Zbroslawice, there are as many as 1620 such people. On the other hand, 713 people from outside the municipality found work in the municipality. The balance of arrivals and departures for work is therefore negative and amounts to -907 people. The unemployment rate in the municipality of Zbroslawice is 4.6 %, which is lower than the unemployment rate of the Silesian Voivodeship, as well as the general unemployment rate in Poland, which is 6.2 % as of 2020. Figure 1 shows the dynamics of the unemployment rate development in the municipality of Zbroslawice between 2004 and 2020.

**Figure 1.** Estimated unemployment rate in the municipality of Zbroslawice from 2004 to 2020.Source: https://www.polskawliczbach.pl/gmina_Zbroslawice, 12.03.2022.

The unemployment figures in the municipality are encouraging. The effect of projects carried out in the field of social and professional assistance can be seen here. However, in 2020, despite the projects carried out, unemployment increased significantly, which may be the result of the COVID-19 pandemic. The analysis carried out made it possible to identify weaknesses and problems requiring immediate intervention by the local authorities. Table 2 illustrates the weaknesses, problems and possible solutions proposed to the municipality of Zbroslawice.

Table 2.*Identified weaknesses and problems in Zbrosławice municipality and proposed solutions*

Weaknesses	Problem areas	Proposed solutions
Steady increase in population of post-working age, steady decline in people of working and pre-working age	Inheritance of poverty and exclusion	Implementation of professional development projects, community projects
Increase in unemployment among middle-aged people resulting in potential social exclusion	Labour market mismatch for the employed, inheritance of poverty and exclusion	Implementation of projects of the following nature: employment, social, revitalisation
Reduction of jobs in traditional economic sectors (mining, energy), accumulation of social exclusion in the most vulnerable places, increasing poverty	Degraded areas of the municipality, the need to create new jobs, reorientation and retraining of people made redundant and seeking employment locally	Projects of a revitalising degraded areas and social projects increasing employment and self-employment opportunities and counteracting social exclusion

Source: own study.

A local government unit with efficient and effective sources of funding, however, expand its range of financial support by initiating development projects co-financed by community funds. Municipal revenues should be diversified and prepared for various types of crises. This is particularly true in the current situation. Due to the introduction of the amendment to the Polish Order from 01.07.2022, local government units may face financial problems. Until now, around 40% of the PIT (Personal Income Tax) went to the budget of local government units. At that time, the PIT in the first tax bracket was 17%, while from 1.07.2022 it has been reduced to 12%, which may result in a drastic decrease in revenues to the budgets of municipalities, districts or provinces. In such a situation of financial uncertainty, it is advisable for territorial local government units to be more active in activities aimed at obtaining EU funds to achieve the set goals. As part of the 2014-2020 financial perspective, 22 projects co-financed by the European Regional Development Fund (ERDF) and the European Social Fund (ESF) have been implemented in the municipality of Zbrosławice. Table 3 shows the most important projects of the municipality in this period.

Table 3.*Key projects implemented in the municipality of Zbrosławice from EU funds in the period 2014-2020*

Name of the project	Measure no. in ROP SV	Fund	EU funding	Total value project
Installation of photovoltaic systems	4.1	ERDF	PLN 2 004 806.79	PLN 2 585 469.73
Active Zbrosławice	9.1	ESF	PLN 272 000.00	PLN 320,000.00
A more active Zbrosławice	9.1	ESF	PLN 267 266.56	PLN 314 431.25
Open doors - activating local residents	7.1	ESF	PLN 1 419 704.68	PLN 1 670 240.80
Ambient comfort	11.1	ESF	PLN 320 037.54	PLN 376 514.76
Thermomodernisation of public buildings - phase 1	4.3	ERDF	PLN 672 203.87	PLN 1 641 065.97
Enhancing the cultural attractiveness of the region - St. Mary's Church	5.3	ERDF	PLN 997,508.67	PLN 1 190 672.95

Cont. table 3.

Modernisation of the wastewater treatment plant in Przechlebie - phase 1	5.1	ERDF	PLN 10 097 142.00	PLN 15 946 950.00
All together	9.1	ESF	PLN 3 458 572.65	PLN 4 068 909.00
Purchase of rescue and firefighting equipment for Fire department	5.5	ERDF	PLN 78 388.35	PLN 785 000.00
Construction of a water main and sanitary sewer in Ziemiećice	5.1	ERDF	PLN 552 425.00	PLN 1 694 893.43

Source: own study based on subsidy map <https://mapadotacji.gov.pl/>, 27.04.2022.

The Municipality of Zbrośławice has obtained a total of PLN 26,935,936.26 from EU funds to finance projects in the 2014-2020 funding period. The implementation of all projects, both financed from own funds and EU funds, contributed, among other things, to improving the quality of life of the residents, meeting the needs of local communities, as well as stimulating the economic development of the municipality of Zbrośławice and increasing the attractiveness of the municipality's area in a broad aspect. These aspects were improved thanks to a well-developed development strategy, which made it possible to identify priority actions.

3. Characteristics of projects implemented in the municipality of Zbrośławice within the framework of Measure 9.1.5 of the ROP SV (Regional Operational Programme – Silesian Voivodeship) 2014-2020

In the period 2019-2021, 2 projects have been implemented in the municipality of Zbrośławice under Measure 9.1.5 of the Regional Operational Programme of the Silesian Voivodeship 2014-2020 (ROP SV). These are the projects Active Zbrośławice and A More Active Zbrośławice.

Active Zbrośławice project 2019-2020

The project, entitled Active Zbrośławice, was implemented for priority axis IX - Social inclusion, measure 9.1 - Active integration, sub-measure 9.1.5 - Strengthening the socio-professional potential of local communities, support for measures resulting from LSR (Forest Development Fund) covering rural and fishing areas. The project was co-financed by the European Social Fund (ESF). The municipality of Zbrośławice became the project leader. A project partner was selected, which was the Community Public Library. The goal of the project is to strengthen the social potential of 25 people at risk of social exclusion (15 women and 10 men) and to raise the professional competences of 10 people selected from a group of 25 (6 women and 4 men) at risk of social exclusion. The project is in line with the specific objectives of the Regional Operational Programme and the Development Strategy for the Silesian Voivodeship "ŚLĄSKIE 2020+" - Operational objective B.2. Development of competencies, skills and increase of the level of activity of the residents.

The project is of an anti-discriminatory nature, both in terms of gender, disability and the risk of social exclusion, particularly due to poverty. The project is implemented in accordance with the strategy of the Local Action Groups (LAGs).

The target group of the project is the local community of Zbrośławice Municipality, including in particular people at risk of poverty or social exclusion and their immediate environment. As part of the project, activities such as:

1. Social skills training for people at risk of social exclusion.
2. Information meetings on grassroots initiatives.
3. Educational speakers.
4. Animation activities.
5. Organisation of 5 neighbourhood picnics.
6. Festival organisation - Dramatalia.
7. Professional training.
8. Career guidance meetings.
9. Organisation of certified training courses.

The project started on 1.06.2019 and ended on 30.05.2020. It was co-financed by the European Social Fund and the amount of funding was PLN 304,000.00. The total cost of the project was PLN 320 000.00.

Project A More Active Zbrośławice 2020-2021

The project entitled “A More Active Zbrośławice” was implemented under Priority Axis IX - Social inclusion, Measure 9.1. Active inclusion, Sub-measure 9.1.5. Active inclusion programmes for people and groups at risk of social exclusion. The project leader was the Municipality of Zbrośławice, while the Municipal Public Library in Zbrośławice was selected as the project partner. The goal of the project is to strengthen the social potential of 25 people at risk of social exclusion (15 women and 10 men) and to raise the professional competences of 10 people selected from a group of 25 (6 women and 4 men) at risk of social exclusion. The project was linked to the strategies of the Upper Silesian Forest Region [*Leśna Kraina Górnego Śląska*]. According to this strategy, the following problems in the social sphere were identified:

1. Varying social activity of residents in relation to municipalities, with a particular focus on young people.
2. Social isolation of young people.
3. Poor sports, leisure and cultural offer.
4. Poor social integration between immigrant and indigenous populations.

The project targeted people at risk of social exclusion and communities living in the municipality. The social and environmental activities were intended to significantly increase access to services for communities that do not have this opportunity on a daily basis, mainly because of where they live. The project implemented activities such as:

1. Social skills training.
2. Educational speakers.
3. Organisation of 6 neighbourhood picnics.
4. Organising a neighbourhood festival.
5. Professional skills training.
6. Certified vocational training.
7. Career counselling.

The project started on 1.01.2021 and ended on 31.12.2021. It was co-financed by the European Social Fund. The amount of EU funding was PLN 267 266.56, while the total cost of the project was PLN 314 431.25.

The municipality of Zbroślawice, through the implementation of projects of a social nature, undertakes activities aimed at strengthening the social activity of local communities. These projects have effectively contributed to reducing the unemployment rate in the municipality and have become a stimulus for social development.

4. Research objectives, research hypothesis, research methods, data sources

For the research conducted, the following research hypothesis was assumed: the activities undertaken and projects implemented by the municipality of Zbroślawice in the period 2014-2020 contributed to strengthening social and professional activity of local communities and strengthening human potential. Two main methods were used in the research: analysis of project documentation and a survey.

Study 1: Examination of project and reporting documentation

The purpose of the desk study was to determine the extent to which the assumed target values of indicators were achieved in the projects Active Zbroślawice and A More Active Zbroślawice, which were implemented under priority axis 9.1 of the Regional Operational Programme of the Silesian Voivodeship. The analysis was performed on the basis of measurable project indicators. Documents such as:

1. Application for funding for the implementation of the project within the framework of the Regional Operational Programme of the Silesian Voivodeship 2014-2020 (Active and A More Active Zbroślawice).
2. Beneficiary's applications for payment under the Regional Operational Programme of the Silesian Voivodeship 2014-2020 (Active and A More Active Zbroślawice).
3. Partnership agreement for the implementation of the project A More Active Zbroślawice.

Study 2: Surveys

The aim of the survey was to determine the respondents' knowledge of the projects implemented in the municipality of Zbrosławice to strengthen the social and professional activity of the local community and to determine the impact of these projects on the lives of the residents. The survey was conducted partly online in May and June 2022 by sending out questionnaires via e-mail (38 people completed the questionnaire electronically, while 10 people filled out a traditional paper sheet). The research sample consisted of women and men. A total of 48 people responded. Thirty women and 18 men responded. The respondents were informed prior to the survey about the purpose of the study and the anonymity of the entire questionnaire. The research tool, a questionnaire, was developed by the authors of the study. According to M. Łowicki, a questionnaire is a sheet containing questions and a space for answering, from which the respondents choose the answer that suits them best (Łobocki, 2004, p. 98).

In the first part, respondents answered questions about the Active Zbrosławice and A More Active Zbrosławice projects, while in the second part they filled in data about themselves in the form of a metric. The survey contained both open and closed questions. The survey was conducted using the diagnostic survey method. This method involves obtaining key answers about the views and feelings of the respondents.

5. Background of the study 1. Comparative analysis of achieved and assumed target values in ongoing projects

Active Zbrosławice project

Measurement of the implementation of the assumed values took place at the moment of receiving the first form of support financed from the European Social Fund on the basis of documentation of support forms and application forms. Monitoring was conducted on an ongoing basis and reported in accordance with the payment schedule. Table 4 presents the degree of achievement of the project's values.

Table 4.

Target values, achieved and degree of achievement of target values within the Active Zbrosławice project

Indicator name	Unit of measurement	Break-down	Target value	Initial value	Value achieved	Implementation rate (%)
Number of people at risk of social exclusion supported by the project	Persons	F	15	15	17	113.33
		M	10	10	8	80.00
		Total	25	25	25	100.00

Source: own study based on payment application.

In the initial phase, the project achieved the planned indicators in the target groups by 100%. In the subsequent implementation phase, 2 new participants were selected as a result of the death of 2 participants. The project achieved its target number of participants, which was 25 in total.

Indicators specific to the implemented project - is the number of 10 persons at risk of poverty or social exclusion, seeking employment, participating in activities through which they gained professional qualifications, and finding employment after leaving the programme. The targeted values were 6 women and 4 men. Measurement of the attainment of the target values took place when participants changed their situation through:

1. Job search - measured on the basis of a certificate from the District Employment Office or a statement on job search.
2. Undertaking education or training - measured based on certificates or attestations from schools.
3. Employment - measured by contracts (indicator was measured up to 6 months after project completion).

The project assumed an employment effectiveness criterion of at least 25% of participants. The employability effectiveness indicator (EEI) defines the percentage of people participating in the project who obtained employment within 3 months of its completion (Toczyńska, 2017, pp. 4-6):

$$EEI = \text{number of people who found employment within 3 months after the end of the project} / \text{number of people who completed participation in the project} \times 100\%$$

The EEI for the project under review was 48%. ($EEI = 12/25 \times 100\% = 48\%$). This means that the required minimum employment level for the study group was achieved. Table 5 illustrates the achieved project indicators over a period of 3 months after project completion.

Table 5.

Specific indicators of the Active Zbrosławice project 3 months after completion

Indicator name	Unit of measurement	Break-down	Target value	Value achieved in the reporting period	Value reached 3 months after project completion	Implementation rate (%)
Number of people at risk of poverty or social exclusion seeking employment, participating in training, working after completing the programme	Persons	F	6	8	8	133.33
		M	4	2	4	100.00
		Total	10	10	12	120.00

Source: own study based on data from Zbrosławice Municipal Office.

During the course of the project, 10 people found jobs, which met the target values by 100%. However, the value achieved in the reporting period was slightly different from the target. For women, it was 133.33% (target value - 6, achieved value - 8) and for men, it was 50% (target value - 4, achieved value - 2).

Three months after the end of the project, the indicators achieved had improved significantly. The implementation rate was 120%. There was no change in the number of women working, which was still 8, but the number of men working had changed from 2 to 4.

The project was a success as it met its targets, which contributed significantly to strengthening both social and professional activity in the local community.

A More Active Zbroślawice project

The project A More Active Zbroślawice was in a way a continuation of the earlier project Active Zbroślawice. The project recruited 25 project participants residing in low-density rural areas in the municipality of Zbroślawice. It was of an anti-discriminatory nature, both in terms of gender, disability and risk of social exclusion, particularly due to poverty. The project met the minimum levels of social and employment effectiveness, which in relation to people at risk of social exclusion was 34%, with a minimum requirement of 25%. During the project implementation period, the following was carried out:

- Social skills workshops divided into groups of 10+15 people.
- 12 educational meetings.
- 30 hours of professional skills enhancement activities.
- 4 certified vocational training courses.
- 4 themed picnics.
- Dramatalia community festival.

The project was designed to bring together 25 people at risk of poverty or social exclusion. As in the case of the previous project, measurement took place at the moment of receiving the first form of support financed by the European Social Fund on the basis of documentation of the forms of support and the participants' application forms together with documents certifying the current situation of the project participant. Measurement tools included:

- source documents proving the participant's eligibility,
- qualitative surveys of participants,
- declaration of participation,

Table 6 shows the values achieved for the number of project participants.

Table 6.

Values achieved in the AMore Active Zbroślawice project

Indicator name	Unit of measurement	Break-down	Target value	Initial value	Value achieved	Degree of implementation
Number of people at risk of social exclusion supported by the project	Persons	F	15	15	15	100.00
		M	10	10	10	100.00
		Total	25	25	25	100.00

Source: own study based on data from. Zbroślawice Municipality (2022).

From the start of the project until its completion, the project met 100% of the targets in terms of the number of project participants.

As for the specific indicators of the implemented project, the project envisaged the professional activation of 10 participants. The target value for women was 6, while for men it was 4. The measurement of the indicator took place 4 weeks after the end of participation in the project. Measurement tools included:

1. Certificate confirming the acquisition of professional qualifications, by an external authorised body. Monitoring was carried out on an ongoing basis and changes at stages.
2. 4 progressive measurement of the acquisition of competencies, with source documents confirming the employment and achievement of the indicator reported in the payment applications.

Table 7 illustrates the achieved values of specific project indicators.

Table 7.

Specific indicators of the A More Active Zbroślawice project 3 months after project completion

Indicator name	Unit of measurement	Break-down	Target value	Value achieved in the reporting period	Value reached 3 months after project completion	Implementation rate (%)
Number of people at risk of poverty or social exclusion seeking employment, participating in training, working after completing the programme	Persons	F	6	6	6	100.00
		M	4	4	4	100.00
		Total	10	10	10	100.00

Source: own study based on data from Zbroślawice Municipal Office.

The project assumed an employment effectiveness criterion of at least 25% of participants. The EEI for the analysed project was 40% ($EEI = 10/25 \times 100\% = 40\%$). This means achieving the minimum level of the employment effectiveness indicator at the level of 25%. The project also assumed professional activation of 10 people. The target value was achieved. 10 people, 6 women and 4 men, found work 12 weeks after the end of the project, which contributed to meeting the target values in 100%. According to the latest data obtained from the municipal office in Zbroślawice, as many as 17 participants of the project 'A More Active Zbroślawice' have now found employment. Ten women and seven men taking part in the project have found employment. These data clearly illustrate the effectiveness of the project.

Summarising the results of Study 1, it can be concluded that both projects Active Zbroślawice and A More Active Zbroślawice contributed to strengthening social and professional activity of local communities. This is evidenced by the assumed and achieved employment effectiveness indicators of project participants.

6. Course of the survey 2. Survey for the evaluation of the impact of the projects on the local community in the opinion of the participants of the projects Active Zbroślawice and A More Active Zbroślawice

The survey was conducted in May/June 2022. The respondents to the questionnaire were people participating in the projects "Active Zbroślawice" and "A More Active Zbroślawice". The questionnaire was sent to 50 people. Ultimately, 48 people took part in the survey. 30 women and 18 men took part in the survey.

The analysis of the data marked in the metric concerned social and occupational determinants. The age of respondents in the five categories is shown in Fig. 2. The largest group is in the 41-50 age range.

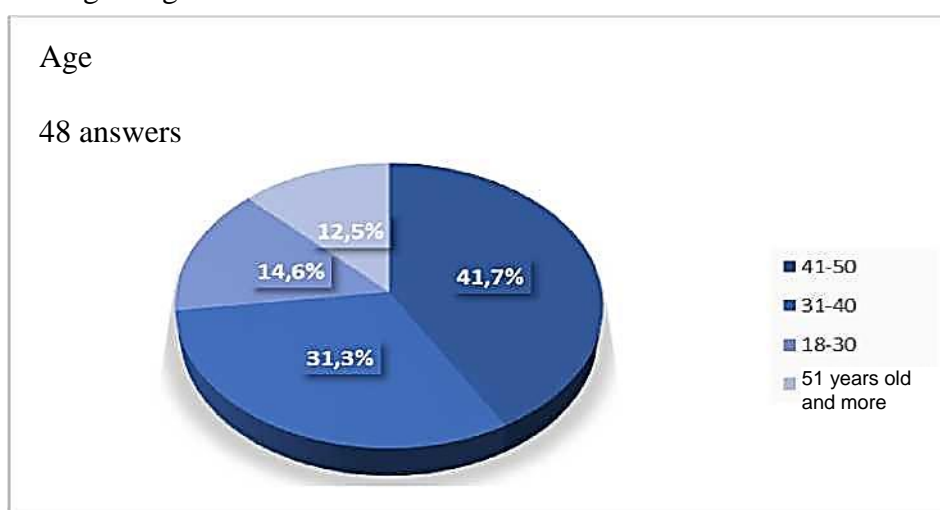


Figure 2. Age of respondents.

Source: Own study based on survey results.

When analysing the educational level of project participants (Figure 5), it is easy to note that the most numerous groups include representatives with primary education (47.5%) and basic vocational education (47.9%). Secondary education was held by 4.2% of respondents, and no one had a university degree. This shows that people with a lower level of education most often have problems concerning their professional situation and social exclusion. This in turn supports the thesis that projects should be launched to improve their social and professional competences.

The next question from the metric concerned the employment status of the respondents after the end of the projects. This question can be considered the most important in the entire survey, as it clearly indicates the number of people working after the end of participation in aid projects. The most numerous group was found to be employed - 75% of respondents found employment 3 months after the end of the project.

The core part of the survey was the questionnaire. Question one in the questionnaire was designed to find out which specific project the respondents had participated in. The question was of a closed nature.

"How did you find out about the implementation of the Active and A More Active Zbroślawice projects?" was another question asked to respondents. The question aimed to identify the main channel of communication, between the municipality and people at risk of social exclusion. The distribution of answers is illustrated in Figure 3.

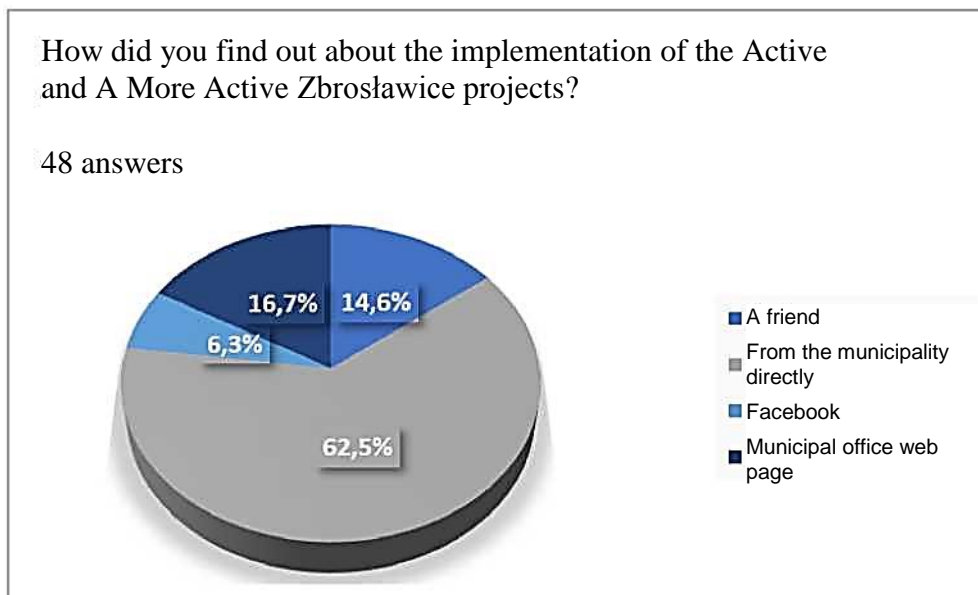


Figure 3. Channels of communication of the municipal office with project participants.

Source: Own study based on survey results.

The analysis of answers to the next - 3 question "Did your professional situation improve after participating in the project?" allowed us to effectively and quite quickly determine the usefulness of the Active and A More Active Zbroślawice projects. The answer "Yes" was given by 81.3% of the respondents.

"Did you participate in all the training courses of the ongoing projects" was another question to determine people's involvement in the projects. The majority of people were very committed to the project in order to improve their professional situation. 68.8% of all respondents participated in all the training provided by the projects surveyed.

The analysis of the answers to the next fifth question, "How do you evaluate the projects implemented in the municipality of Zbroślawice aimed at strengthening social and professional activity?" made it possible to determine the satisfaction of project participants. The most numerous group were those who assessed the projects implemented in the municipality very well (45.8%) or well (37.7%), which gives a total of 83.5% of those satisfied.

Question number six "After participating in the project, did you manage to find employment by improving your professional competences?" was aimed at determining the effectiveness of the project's training to improve participants' professional competences. 75% of the respondents declared to have found employment by improving their professional competences. This group consisted of 36 people.

The next question concerned the sector in which employment had been found (Fig. 5).

In Figure 4, the number 12 represents the number of people, which is 33.3% of all respondents who marked the first answer. Similarly, the number 10 represents 27.8% of all respondents who marked the second answer, and so on.

If you have found employment after participation in the project, in which sector?

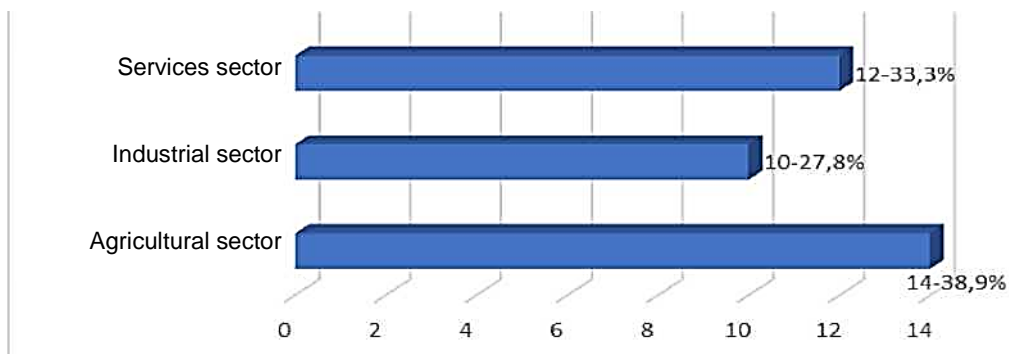


Figure 4. Percentage share of sectors in the employment of people participating in the surveyed projects.

Source: Own study based on survey results.

Another question included in the survey was an open one, “What impact do you think the projects implemented in the municipality of Zbrosławice have on local society?” aimed to determine the impact of the projects implemented in the municipality of Zbrosławice according to the opinion of those involved. Only 21 survey participants answered the question. The answers varied, however, the main motive was improving the living conditions of the residents. On the other hand, some people answered that the projects implemented in the municipality of Zbrosławice are helping them to get back on their feet and, consequently, are helping them to become professionally active.

The distribution of answers to the multiple-choice question “What do you think should be improved in order to make the residents of the municipality of Zbrosławice more economically active?” is presented in Figure 5. In Fig.5, the number 8 represents the number of people, which is 16.7% of all respondents who marked the first answer. Similarly, the number 26 represents 54.2% of all respondents who marked the second answer, and so on. The residents, and at the same time the participants of the projects, clearly indicate that the best way would be to create new jobs. This was the answer chosen by 56.3 % of all respondents.

What do you think should be improved in order to make the residents of the municipality of Zbrostawice more economically active? (max. 2 answers) 48 answers



Figure 5. Development directions of the municipality in the social sector according to the respondents.

Source: own study based on survey results.

The next question, "How long were you unemployed before joining the projects?" was aimed at determining the career break of the project participants. The largest number, 19, had been unemployed for about a year before joining the project.

The distribution of responses to the final multiple-choice question, "What, in your opinion, is the main factor in getting an attractive job?" is illustrated in Figure 6. In Fig. 6, the number 31 represents the number of people, which corresponds to 64.6% of all respondents who marked the first answer. Similarly, the number 16 represents 33.3% of all respondents who marked the second answer, and so on.

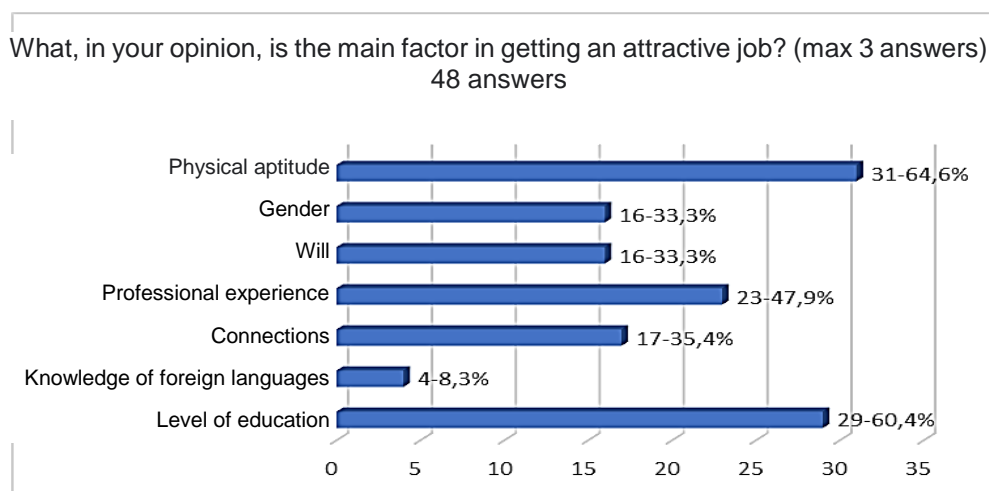


Figure 6. Factors for obtaining an attractive job according to the respondents.

Source: own study based on survey results.

The responses presented were quite unexpected, as the majority of respondents (31 people, 64.6%) believe that physical aptitude is the main factor for receiving an attractive job. 29 people, on the other hand, believe that the level of education is the main factor for receiving an attractive job. The least frequently selected category, surprisingly, turned out to be knowledge of foreign languages, with only 4 people believing that knowledge of foreign languages allows one to receive an attractive job offer.

7. Summary

On the basis of the results of desktop analysis and surveys, it is evident that the projects implemented in the municipality of Zbrosławice, aimed at strengthening social and professional activity of local communities, had a positive impact. The assumed project indicators have been achieved and, consequently, the projects have significantly contributed to improving the professional situation of a large group of participants in the “Active Zbrosławice” and “A More Active Zbrosławice” projects. Through the projects, the municipality achieved the target indicators at a level above the minimum required (the required 25% employment effectiveness - achieved 40% and 48%), and this contributed to a positive impact on the local community in terms of employment and reduction of social exclusion. More than 75% of the people participating in the projects managed to become economically active. This shows the positive impact of the municipality's measures to reduce unemployment and avoid social exclusion of the municipality's residents.

Respondents see a great impact of the projects under 9.1.5 ROP on their social and professional status. Most of the respondents believe that it is thanks to participation in the project that their life situation has improved. Project participants also indicated, in their opinion, further development directions of the commune in the aspect of professional activation of residents, which should be oriented mainly towards the creation of new jobs for residents living in the commune.

Summing up the entire study, the assumed study hypothesis stating that the activities undertaken by the municipality of Zbrosławice and the projects implemented in the period 2014-2021 contributed to strengthening the social and professional activity of local communities and strengthening the human potential was confirmed.

The municipality of Zbrosławice strives to improve the lives of its residents through the implementation of social tasks. A larger number of implemented projects would allow even better effects to be achieved, e.g. in terms of lowering the unemployment rate, social integration and communication, caring for the environment, better education, health care and active leisure. Systematic monitoring of areas at risk of social exclusion will allow for early detection of social risks and elimination of the risk of social exclusion and rising unemployment rates. It is recommended for the municipality to create a task force for raising funds from EU funds and for effective project management, so that the implementation of social or investment projects is not an occasional event, but becomes part of a systematic practice of experience in line with the municipality's strategy for improving the life of local communities in the municipality of Zbrosławice.

Acknowledgements

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PROCESS FOR CREATING BYLAWS FOR AN ORDINARY ASSOCIATION

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Introduction/Background: One of man's freedoms is the freedom of association. In the modern world, we can exercise this freedom in a great variety of organisational and legal forms. One such form is the association. However, we have different associations. One type of association is the "ordinary association". The basic internal law of this association is the bylaws. Therefore, the correct definition of its content is essential for the subsequent correct and efficient functioning of this association.

Purpose of the paper: The purpose of the paper is to define a model for the process of creating bylaws for the operation of an ordinary association. This will be achieved by identifying the essential elements of these bylaws and showing the interdependence of these elements and their impact on the subsequent functioning of the association.

Materials and methods: The primary research method used is the legal analysis, supplemented by an analysis of court case law and an analysis of the scientific literature on the problem under study.

Results and conclusions/ Practical implications: The model of the process of creating bylaws of an ordinary association can be used in practice by those who intend to create such an association. An undoubted problem for those intending to create an ordinary association is to define the internal legal norms in such a way that the association can effectively carry out its activities in the future. This paper identifies the most difficult element necessary for the creation of an ordinary association - the bylaws.

Social implications: an ordinary association is one of the basic organisational forms in which one can actively influence social life, especially the local community. With this legal form, one can be creative and realise one's own needs and the needs of others. The entity must have bylaws for its activities.

Keywords: ordinary association, bylaws, formation of ordinary association.

1. Introduction

Modern man, in most European countries, but not only European countries, is able to enjoy many freedoms, including freedom of life, personal freedom, freedom of communication, movement within the territory of a country (European Union), choice of place of residence,

freedom of conscience and religion, expression of one's views, freedom of association in trade unions, political parties, freedom to choose an occupation and a place of work, freedom of artistic creativity, scientific research and publishing its results, freedom of teaching, use of cultural goods, freedom of economic activity. The source of all these freedoms is the inherent and inalienable dignity of man (Article 30 of the Constitution of the Republic of Poland). Guaranteeing each of these freedoms is a fundamental goal of the legal systems of individual states and international organisations such as the European Union (Witkowski, 2011). Each type of freedom is important, complex and multi-faceted. In this paper, I address one aspect of freedom of association in Poland.

Freedom of association in Poland can be exercised in very different organisational and legal forms (Pisarczyk, 2016). One such form is an association. It is a voluntary, self-governing, permanent association with non-profit purposes. An association, irrespective of its type, independently defines its objectives, programmes of activities, structures, adopts internal acts concerning its activities. This is guaranteed by the legal norms set out in Article 2 of the Act of 7 April 1989 Law on Associations (hereinafter: AsLaw). However, we have different types of associations. The basic type of associations is, according to the wording of the referred to Act, an "association", which, after registration by the registration court in the National Court Register, acquires the status of a legal entity.

One type of association is an 'ordinary association'. Unlike an "association", an "ordinary association" has no legal personality, only legal capacity (Hadrowicz, 2020). However, an analysis of this problem is beyond the scope of this paper. These two types of associations are also distinguished by the type of internal law act. The basic act of internal law of an association is its statute, whereas in an ordinary association the act is the bylaws - Article 40 of AsLaw (Barański, 2019). The proper determination of the content of this act is essential for the subsequent proper and efficient functioning of the association.

The Law on Associations does not provide for the institution of an entity managing the process of creating an association, including an ordinary association, but this does not mean that such a person is not desirable from the point of view of the efficiency, effectiveness and substantive correctness of the process of creating this association. In any decision-making process both formal and material decision-makers are needed (Knosala, 2005). The creation of bylaws is not only a part of the process of establishing an ordinary association, but also, from the point of view of management, it is an act that defines the system of goals, values, and shapes the intra-organisational bond (Kozuch, 2004, 2020). Persons who intend to establish an ordinary association (at least three persons) should hold a founding meeting, where they adopt a resolution to establish an ordinary association, adopt bylaws, elect a board or a representative representing the ordinary association, which will apply in writing to the administrative body supervising ordinary associations for entry in the register of ordinary associations. This authority in counties is the starost (Wilk, 2019) and in cities with poviats the president of the city.

2. Model for the process of drafting bylaws for an ordinary association and their content

2.1. General comments

An ordinary association usually operating in a local environment should be an entity helping to resolve social conflicts and interacting with local decision-makers in the fields of culture, education, order, peace and public safety (Olejniczak-Szałowska, 2016). When embarking on the process of drafting the bylaws of an ordinary association, persons who wish to establish such an association must be aware that an ordinary association has no legal personality but only legal capacity and, consequently, every member of the association is liable for the obligations of the ordinary association. This liability is an unlimited liability with all its assets jointly and severally with the other members of the association and with the association. This is different from the case of an "association", which, after registration in the National Court Register, acquires legal personality and its members are not liable for its obligations with their assets. In ordinary associations, however, it is different.

The bylaws of an ordinary association should specify the following:

- type of association (ordinary association),
- name of the association,
- objective(s),
- area of operation,
- means of operation,
- seat,
- representative representing the association or the board,
- rules for amending the bylaws,
- method of acquiring membership,
- method of loss of membership,
- method of dissolution of the ordinary association.

The mentioned issues are obligatory, they are specified in Art. 40, par. 2 of the Law on Associations. Other issues should also be defined in the bylaws, although the Act does not explicitly require them, e.g. definition of the rights and obligations of the members, conditions for the validity of the resolutions of the association's authorities, ways of obtaining financial resources and including the establishment of membership fees. Some decisions taken at the beginning of the management process of a given project are crucial (Bednarski, 1998) and will have consequences throughout the whole period of activity of an ordinary association. Such a project is the bylaws.

2.2. Type of association, name, objectives and means of operation

The designation of the type of association as "ordinary association" should be included in any resolution adopted by the persons forming the association. First of all, this designation should include: the resolution establishing the ordinary association and the resolution adopting the bylaws. In practice, the adoption of the bylaws may be an element - an appendix to the resolution on the establishment of the association. In that case, the assembled persons vote on the resolution containing the bylaws.

Among the general provisions, the bylaws of the association should specify its name. The provisions of the second chapter of AsLaw, determining the rules for the formation of associations registered in the National Court Register, do not apply to ordinary associations. However, this does not mean that the norms contained in this chapter may be interpreted a contrario when establishing an ordinary association. An example is the norm prescribing that the name of an association must be distinguishable from other associations, organisations and institutions. The name of an ordinary association must not be misleading as to the identity of that entity. In this respect, the judgment of the Supreme Court - Chamber of Labour, Social Insurance and Public Affairs of 5 December 2013, ref. III SK 10/13, OSNP 2015/1/17; (Hadrowicz, 2020) should be considered as also referring to ordinary associations. The identification of the name allows to individualise the entity. Besides, a name is a personal good and is subject to legal protection. From a practical point of view, specifying the name of the association to distinguish it from other entities will allow to avoid future confusion as to the identity of the entity, for example as mundane as when delivering correspondence, engaging in cooperation with other entities or undertaking supervisory activities.

An ordinary association, unlike an "association", cannot carry out economic activities, set up field organisational units, carry out paid public benefit activities, nor can it associate legal persons. On general principles, it bases its activities on the voluntary work of its members. Having legal capacity, however, it may employ staff, including its members.

The association's objectives must correspond to the nature of the association, which is to represent the collective interests of its members vis-a-vis public authorities. An ordinary association, like any association, is a permanent non-profit association. The funds from the association's activities cannot be paid out, distributed to the members, and must be used to achieve the association's objectives. An ordinary association, as opposed to an "association", cannot carry out economic activity and even cannot carry out paid public benefit activity (art. 42 AsLaw). The purpose(s) of an ordinary association must be defined in its bylaws. In practice, they usually refer to the affairs, activities and life of the local community. Although it is not a legal requirement, but the aims of the association should correspond to its name, in fact the name should correspond to the aims the association will pursue. Examples of names of associations from the City of Gliwice include: Stowarzyszenie Kupców Na Lipowej, Slava Pomoc Ukrainie, Stowarzyszenie Gier Planszowych Gambit, Uczniowie Drogi Mesjasza.

The objectives of the Stowarzyszenie Kupców Na Lipowej are e.g. to strive for modernisation of the market, promotion of the market, improvement of the quality of the surface, marking and numbering of stands, striving for fair conditions of use of the market. The aim of the Association Slava Pomoc Ukrainie is, among others, to provide assistance and support to people in need in Poland, to help people in difficult life situations, to provide organisational, legal, financial, material, psychological, transport and accommodation assistance.

Examples of associations from the district of Będzin are: Czyste Przeczyce i Mierzęcice, Towarzystwo Przyjaciół Akademii Młodego Muzyka w Siewierzu, Stowarzyszenie Rogo Senior, Stowarzyszenie "Księstwo Siewierskie". The objectives of the Association of Czyste Przeczyce i Mierzęcice include: promoting ecological development of infrastructure and development of green areas, popularisation of landscape values, improvement of the inhabitants' safety, support and cultivation of local traditions, popularisation of active leisure, promotion and organisation of volunteer work, caring for the development of local entrepreneurship, and development of general and specialist knowledge and professional qualifications, support for employment, conducting tourist and sightseeing activities, support for agriculture, action to counteract unemployment. The objectives of the Towarzystwo Przyjaciół Akademii Młodego Muzyka w Siewierzu are: to develop the project "Akademia Młodego Muzyka w Siewierzu", to popularise playing musical instruments, to make children and young people musical, to make music together, to popularise musical culture and traditions.

The area of operation of an ordinary association is not restricted by law. On the examples of associations registered in the records of several poviats (and a city with poviat rights), two tendencies can be observed. Some associations have specified the territory of Poland as their area of operation, while others have specified the territory of a town, a municipality or several neighbouring municipalities. It seems to be preferable to define an area with a larger administrative district. Even if the wider area of operation is not often used, there will potentially be such a possibility should the need arise.

Means of operation. The means of operation should give the association the opportunity to achieve its objectives and should therefore depend on the objectives. The previously mentioned Stowarzyszenie Kupców Na Lipowej, among other things, identified the following means of operation: organisation of meetings, cooperation with other organisations, entrepreneurs and local government, submission of motions, opinions and initiatives to institutions, local government administration, social and professional organisations, as well as institutions of the judiciary. Association Slava Pomoc Ukrainie among the means of operation indicated: organising public collections, charity actions, providing support and assistance to people in difficult life situations, social and charitable assistance, organisation of events and meetings, promotion of empathetic attitudes, cooperation with public administration bodies and other institutions and entities.

The means of operation of the association from the Będzin district - Czyste Przeczycie i Mierzęcice include: organising meetings, concerts, exhibitions, cooperation with the external environment, submitting motions and opinions to the relevant administrative authorities, conducting educational and informational activities, entering into agreements and cooperation contracts with other entities, election committees or socio-economic organisations. The means of operation of the Towarzystwo Przyjaciół Akademii Młodego Muzyka w Siewierzu include organising and assisting in the organisation of instrumental classes, systematic testing of the acquired skills during music rehearsals, raising funds for the Society's activities, assisting in the purchase of instruments, costumes, sheet music resources and other necessary equipment, organising and helping to organise concerts, musical events, performances with the participation of the "Akademia Młodego Muzyka w Siewierzu " and cooperating orchestras, choirs, soloists and various types of musical ensembles, organising or co-organising workshops, trainings, courses and other forms of improving musical skills.

The selected examples of ordinary associations, their objectives and means of operation allow the conclusion that these elements are closely linked. In particular, the objectives determine the means of operation and the name of the association is relevant to the objectives to be pursued by the association.

Registered office of the association. By the term registered office, the law generally means the locality. However, the Law on Associations in Article 40b requires that the address of the registered office be indicated. Specifying the address of the registered office is not only of formal but also of practical importance. Official correspondence to the association, in particular regarding registration and other correspondence from the supervisory authority or the court, will be addressed to this address.

2.3. Representative representing the association or the board

Another element of the bylaws of an ordinary association is alternative in nature. It can either have a representative representing the association or a board (Suski, 2018). The person creating the bylaws must ask itself how to make the governing entity function effectively (Stoner, Freeman, Gilbert, 2001; Austen-Tynda, 2009). If the bylaws will provide for the function of a representative to represent the association, this representative should be elected during the formation process of the association at the founding meeting. The founders of an ordinary association, after the adoption of the bylaws, should adopt a resolution to elect a representative. Subsequently, the representative should take steps to submit an application for entry in the register of ordinary associations (art. 40, par. 5 of AsLaw), kept by starosts and city presidents in cities with powiat rights. The law does not provide for an official form for such an application. In practice, many county and city offices have posted a template for such an application on their websites in the Public Information Bulletins. The educational practice of the offices improved after 2016, after the amendment of the Law on Associations, which introduced changes in the requirements to be met by ordinary associations (Glinka, Chyla, 2017). The application for registration of an ordinary association should include:

- identification of the authority to which the application is made,
- definition of the request ("I request that an ordinary association be entered in the register of ordinary associations"),
- determination of name of an ordinary association,
- name, residential address, ID number of the representative representing the association (if the association is represented by a board, then it is necessary to specify these details of all the members of the board; if, in addition, the association has an internal control body, then the details of the members of this body must also be specified),
- address of the registered office of the ordinary association,
- signature of the representative (if the application is submitted by the association's board, then it should be signed by all the members of the board).

The application for registration must be accompanied by the bylaws, a list of the founders of the ordinary association containing their names, surnames, date of birth, place of birth, place of residence, and, next to the person concerned, his/her own handwritten signature. An additional document is the minutes of the founding meeting containing the identification of the persons present, voting at the meeting, identification of the course of the meeting and the resolutions and results of voting on the resolutions. Particularly important resolutions are the resolution on the formation of the association, the resolution on the adoption of the bylaws and the resolution on the election of a representative or the election of the management board. If the bylaws provide for an internal control body, a resolution on the election of the members of this body should also be adopted. All the mentioned documents are so called registration files, to which persons with a legal interest (e.g. a creditor of the association) can have access.

Representative of the association. The representative of an ordinary association should be elected by a person who enjoys the confidence of all the founding members. Such person is the one who represents the association both internally and externally (Suski, 2018). He/she will undertake independently all the acts of ordinary management and, with the prior consent of all the members of the ordinary association and upon their granting of a power of attorney to perform the acts, he/she will also undertake acts exceeding the scope of ordinary management. The Law on Associations, in Article 41a, paragraph 3, lists an exemplary catalogue of actions exceeding ordinary management. These include: acquisition and disposal of real property or the right of perpetual usufruct, establishment of a limited right in rem, conclusion of a credit or loan agreement, assumption of debt, acknowledgement of debt, discharge of debt, accession to debt, conclusion of a surety agreement or conclusion of another similar agreement, assumption of other obligations exceeding the value of 10,000 PLN.

Irrespective of the nature of the act giving rise to the liabilities of the ordinary association, each member is liable to the creditors of the association jointly and severally with the association and the other members with all its assets. It is true that the liability arises as soon as the execution from the assets of the ordinary association is ineffective, however, the action

against a member of the ordinary association may be brought before the execution from the assets of the association proves to be ineffective. For these reasons, the choice of the right person - a representative representing the ordinary association, a person of trust - is particularly important.

An ordinary association may be represented by a "representative", whose status I have already presented, or there may be a board instead of a representative. The Law on Associations regulates very little about the board. If an association decides to have such a body as a board, Article 40(2) of AsLaw only provides for the necessity to determine in the bylaws such issues as the procedure for electing the board, supplementing its composition, its competence, the conditions for the validity of its resolutions, the manner of representation and, in particular, contracting property obligations. The Law does not impose detailed solutions on these issues. It is up to the association, as a self-governing association, to create the norms of internal law in this respect on its own.

The first issue to be determined is the number of persons comprising the board. Although the law does not *expressis verbis* exclude a one-person board, it is generally accepted that the board should be a collegial body. For practical reasons, it should be an odd number - 3 or 5 persons. This is related to the conditions for the validity of its resolutions. With an even number of board members, there may be more difficulties in terms of the board's ability to pass resolutions. If the composition is 3 or 5, it is easy to determine whether a resolution has been passed by a majority or not. On the other hand, also with a board with an even number of members, the conditions for the validity of resolutions can be determined in such a way that there is no ineffectiveness in action. It is common practice that resolutions of collegiate bodies are adopted by a majority of votes (simple or qualified) in the presence of, for example, at least half of the members of the body. It may be stipulated that, in the event of a tie, the chairman of the board has the casting vote. It is also desirable to provide for such a legal solution in the event that the number of board members is an odd number. The board will then be able to validly adopt resolutions with an incomplete membership in the presence of, for example, two board members, one of whom votes in favour and the other against.

The bylaws of the activities must specify the procedure for the election of the board and the completion of its composition. Therefore, it is advisable that the bylaws provide for the existence of such a body as the general meeting of members, which would elect (members of) the board, supplement its composition (or elect a representative representing the association) by resolution. The Law on Associations does not explicitly provide for such a body as a general meeting of members and it seems that an ordinary association does not have to have such a body. However, it should be borne in mind that the board (or a representative), in order to perform actions exceeding the scope of ordinary management, must obtain the consent of all members of the ordinary association and obtain a power of attorney from all members to perform such actions (Article 41a(2) AsLaw). Therefore, it seems advisable to define, by the bylaws, the existence of such a body as the general meeting of members, which will not have

decision-making powers with respect to the implementation of tasks exceeding the scope of ordinary management, but will be a platform for discussing the problems posed, setting directions, indicating the initiatives to be taken by the board, amending the bylaws, granting discharge to the board, considering the reports on the activities of the board or the representative and the internal control body, granting discharge to the board.

The existence of a body such as the general members' meeting will facilitate the obtaining of consents from individual members of the ordinary association to take an action exceeding the scope of ordinary management and powers of attorney to perform such action. However, the general members' meeting cannot adopt such consent or grant a power of attorney by passing a resolution. Both consent and proxy must be given by each member independently. This is due to the fact that each member of an ordinary association is liable for the obligations of the ordinary association without limitation with all its assets (jointly and severally with the association and the other members of the ordinary association).

The competence of the board is a necessary issue, which must be determined by the bylaws. The basic competence of the board is to represent the association externally and to act on behalf of the association, to manage the day-to-day activities, to manage the assets, the financial resources, to report on the activities of the board (to the internal control body or to the general meeting of members - if these bodies are provided for), to cooperate with the supervisory bodies, to keep the data in the register of ordinary associations up to date, to convene the general meeting of members, to obtain permission and powers of attorney from the members to undertake actions exceeding the scope of ordinary management, to adopt resolutions on the admission of new members and resolutions on the exclusion of members.

2.4. Acquisition and loss of membership

The way in which membership is acquired and lost must be set out in the bylaws. Usually the competence to admit new members and to expel them is given to the board. The bylaws may stipulate specific requirements to be met by a candidate for membership of the association and the candidate's application (membership declaration), e.g. an attachment in the form of a written recommendation by two members of the association. It may also specify the procedure for appealing against a resolution to refuse admission to the association or a resolution to exclude from the association. It is particularly important to define the prerequisites for the loss of membership. Loss of membership should occur as a result of written resignation, exclusion, death of a member of the association. The most problematic reason for loss of membership is exclusion of an association member. The bylaws should specify the grounds for exclusion. These may be, for example, non-payment of membership fees for a certain period of time. Failure to comply with the resolutions of the association's authorities, violation of the bylaws. In this respect, an interesting problem of a possible exclusion of a member is exclusion for the reason that he/she did not give consent to the management board and did not give a power of attorney to perform an action exceeding the scope of ordinary management. The mere fact of

lack of consent should not be a reason for exclusion, whereas the duties of an association member should probably include supporting and fulfilling the association's objectives. If the attitude of a member of the association, his/her activity, is of a negative nature, preventing the realisation of the association's goals, these circumstances should be defined as an acceptable reason for the exclusion of a member of the association. Of course, a member of the association should have its rights defined by the bylaws, e.g. passive and active election right to the authorities of the association, the right to submit initiatives, postulates, motions, the right to speak out on the activity of the association, the right to vote at the general meeting of the members.

2.5. Other elements of the bylaws

Another body that an ordinary association may have is an internal control body. However, this is not an obligatory body in an ordinary association. In associations, it is usually called the "audit committee". If the bylaws provide for such a body, they must also provide for the procedure for its election, its replenishment and its competence. With regard to the mode of election and replenishment, the remarks relating to the board remain valid. On the other hand, the competence of the internal control body should be to control the activity of the association, including the control of the activity of the management board (or the representative), to submit the conclusions of the control to the other bodies of the association, to convene a meeting of the other bodies of the association, to propose the discharge of the management board or the representative.

In the course of the activity of an ordinary association, the bylaws of the association, adopted at the founding meeting, may turn out to be imperfect, imperfections may come to light, which hinder the functioning of the association. For this reason, there must be rules for amending the bylaws. As the bylaws are the most important internal law of an ordinary association, this competence should be entrusted to the members of the association - the general assembly of members. This competence should not be entrusted to the board or any other body of the association.

The last necessary element of the bylaws is the determination of the method of dissolution of the ordinary association. An association is a permanent association. Therefore, the rules for the dissolution of the association should be defined in such a way that the permanence of the association is a feature of the association. The permanence cannot be absolute nor can the dissolution of the association be very easy to achieve. The competence for the dissolution of the association should belong to the general assembly of the members, and if the bylaws did not provide for such a body, this competence should remain at the disposal of a certain majority of the members of the association, e.g. 2/3 or 3/5 of the number of members of the association. The initiative to dissolve the association should belong to the board (or the representative) of the ordinary association, as well as to a certain number of the association's members e.g. 1/10 of the number of members. Irrespective of the entity that has the right to take the initiative for

a resolution in this respect and irrespective of the majority that guarantees the validity of the resolution on the dissolution of the association, the bylaws should stipulate the requirement that the resolution on the dissolution of the association must also specify the liquidator.

At the request of the supervisory authority (starost) or the public prosecutor, the court may also dissolve an ordinary association if its activity shows a gross or persistent violation of the law or the provisions of the bylaws and there are no conditions for the restoration of activity in compliance with the law or the bylaws (art. 29 AsLaw).

The court is obliged to issue a decision on the dissolution of an ordinary association when the number of members of an ordinary association is less than 3, as well as when the association does not have the authorities provided for in the law and there are no conditions for their election within more than 12 months (art. 31 AsLaw).

3. Conclusions and recommendations

An ordinary association, as stated in Article 40 of the Law on Associations, is a simplified form of association. This simplified form of association is expressed in the possible smaller number of members, including founding members, in the absence of the need to have a board and an internal control body and in many other matters. However, an ordinary association must have bylaws, which is the supreme internal law of an ordinary association. The law does not regulate very many issues that have to be defined precisely in the bylaws. The simplified form of an association does not mean that it can function without clearly defined rules. These rules must be set out in the bylaws.

Persons in the process of creating an ordinary association have to analyse a great number of issues. The law only lists the necessary elements, what the bylaws of the activity must contain, while the persons designing these bylaws, according to the principle of self-governance, at their own discretion, using their knowledge, must create legal solutions that are not only in accordance with the law, but are also in line with the expectations of the founding members.

In the process of designing the bylaws, every element of the bylaws is important. Depending on what legal solutions are adopted, this is how the association will have to function in the future. It seems that the most relevant problem is to decide whether an ordinary association will have a board or whether it will be managed by a representative representing the association. A recommendation should be made that associations with a foreseeably small number of members should have, as managing entity, a managing representative, whereas associations with a considerable number of members should rather have a board. The more multifaceted the activities of an ordinary association were to be, and the more the association was to have more objectives, especially of a different nature, the more the managing entity should be a board and not a single managing representative.

An ordinary association that will manage considerable financial means should have, besides a board, an internal control body - an audit committee that will control the activity of the association and, in particular, the managing entity - a representative representing the association or the board. The issue of the existence of an internal control body, statutorily optional, is particularly relevant in the perspective of the liability of the members of an ordinary association for the obligations of the association with all their assets.

The process of creating a model of bylaws proposed in this paper will allow the founders of an ordinary association to consciously decide on particular solutions, which solutions are legally possible, which are more and which are less favourable. Depending on the expectations of the founding members, the presented model of bylaws will allow to select the optimal solution in a particular case so that the association can function properly and achieve its goals in the future.

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RISK IN PROJECT MANAGEMENT IN THE AUTOMOTIVE INDUSTRY ON THE EXAMPLE OF A SELECTED COMPANY

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Introduction/background: Despite the existence of many standards, guidelines and methods for risk management in manufacturing companies, it is still an issue that is often overlooked in management practice. This is due to the natural reluctance of managers to deal with risks related to ongoing projects and processes, which additionally require additional organisational effort and the use of various inputs. This paper presents the problem of risk management in projects implemented in a selected automotive company.

Aim of the paper: The main aim of the paper was to develop and implement a risk management model for the project management process, which includes stages such as: identification of risk factors in ongoing projects, risk analysis and evaluation, and development of risk response methods.

Materials and methods: In the research part, heuristic and statistical methods (group, ocean of experts) were used to identify key project risks. In addition, a qualitative method such as a risk matrix was used to analyse and evaluate risks. An element of the risk management model of options in response to risk was also identified.

Results and conclusions: This paper presents how to determine the key risk factors in projects and how to use them in a risk management model for projects in the selected company. The model can be used for risk management in projects in other companies.

Keywords: project management, risk, risk management, risk factors, identification of risk factors, risk quantification, risk assessment.

1. Introduction

In a rapidly changing environment, increasing competition and growing customer demands, risk management is one of the most important tasks facing a manufacturing company. Product design and development processes are taking place under increasing pressure of time, cost reduction and higher quality. For these reasons, these processes are subject to the risk of disruption caused by various risk factors. With the increasing specialisation and complexity of production processes, risk management is increasingly being considered on an industry-specific

basis. This also applies to the automotive industry and the projects carried out there. Using an automotive company from the SME sector in the Silesian Voivodeship as an example, the paper presents a practical solution to risk management as one of the basic activities in project management. Despite its importance, the issue is not dealt with holistically and there is no comprehensive and universal approach to the issue of risk, especially in the area of its identification and quantification.

Practice shows that almost all projects run differently than planned and that many projects fail due to inadequate risk management. And it is precisely the purpose and essence of risk management to rationally maximise benefit or rationally minimise loss (Kulińska, 2009, p. 31).

It should be pointed out that risk management is a structured process and can be divided into a number of successive stages (Figure 1). The number of stages varies depending on the approach. For example, the PMBoK methodics (A Guide to the Project Management..., 2013, pp. 319-321) distinguishes six risk management processes: risk management planning, risk identification, qualitative risk assessment (quantitative and qualitative), quantitative risk assessment, response planning, risk handling, monitoring and controlling risks.

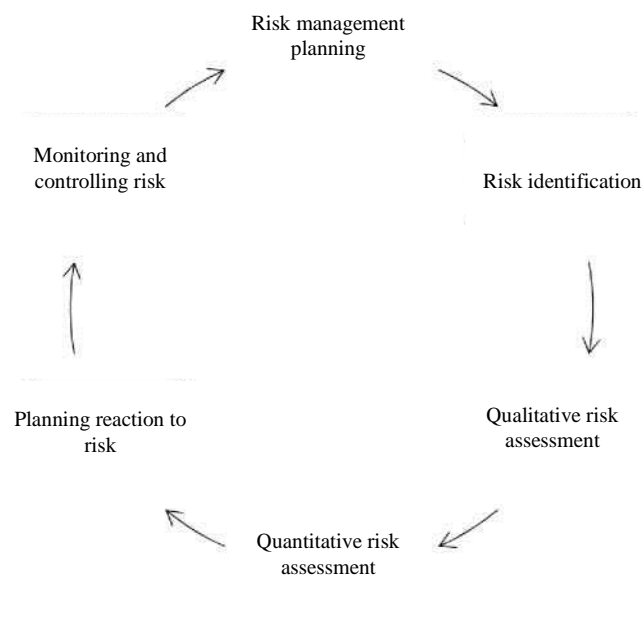


Figure 1. Stages of project risk management.

Source: own study based on PMBoK.

Similarly, the risk management process is presented in PN-ISO 31000 (PN-ISO 31000:2018, 2018) (Figure 2), which points to its basic elements, such as the risk ocean, which includes risk identification, risk analysis and evaluation, and risk handling.

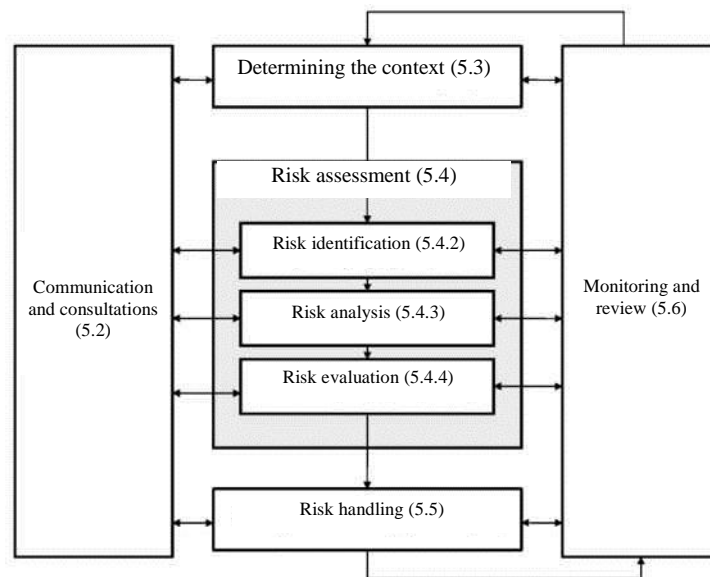


Figure 2. Steps in the risk management process.

Source: PN-ISO 31000.

Risk identification involves looking for sources of risk, so-called risk factors, i.e. areas of influence, events (including changes in circumstances) and their causes and potential consequences. The aim of this step is to create an exhaustive list of risks based on those events that can create, stimulate, prevent, hinder, accelerate or delay the achievement of objectives. The exhaustive identification of risks is important because risks not identified at this stage will not be included in future analyses (Pritchard, 2001, p. 24). Risk identification is, according to K. Czajkowska, a fundamental stage without which it is not possible to carry out the risk management process effectively (Czajkowska, 2017, p. 44). The crucial importance of this stage of risk management for the successful completion of a project is also emphasised by M. Trocki (Trocki, 2012, p. 299).

Risk analysis provides a more detailed understanding of risk. It provides input for evaluating risks and deciding how to deal with risks, together with the most appropriate strategies and methods for dealing with risks. Risk analysis includes consideration of the causes and sources of risk, their positive and negative consequences and the likelihood of those consequences occurring. So, risks are analysed by determining the consequences and their probability and other risk attributes. For this to be possible, it becomes necessary to define the criteria that will be used to assess the materiality of the risk. When defining risk criteria, factors such as, but not limited to, the types of causes and consequences (effects) that may occur and how they are measured, defining the probability of occurrence with a timeframe for the occurrence of the probability and/or consequence, how the level of risk is determined, the level of risk that is acceptable or tolerable and the views of stakeholders should be taken into account.

The purpose of risk evaluation, on the other hand, is to facilitate decisions, based on the results of the risk analysis, about which risks require the implementation of a course of action and what the priorities for implementing that course of action should be. The evaluation compares the established risk levels with the risk criteria values defined for the risk factors.

Based on this comparison, the need to proceed or not with the risk is considered. This decision will depend on the organisation's attitude towards risk and the risk criteria established. Dealing with risk refers to the selection of one or more options to affect risk and how these options are implemented. There are a number of options for dealing with risk. These may include avoiding the risk by deciding not to start or continue with the activity causing the risk, taking or increasing the risk to exploit the opportunity, removing the source of the risk, changing the probability and/or consequences (results), sharing the risk and retaining (retention) the risk based on a conscious decision (Karbownik, Wodarski, 2014; Bijańska, Wodarski, Aleksander, 2022, p. 15).

Of course, ISO 31000 also points to other elements of the risk management process, such as communication and consultation, monitoring and review, and context setting. This is to develop the so-called organisational infrastructure for risk management. It is worth noting here that also C.L. Pritchard points out that risk management planning should include the preparation of a risk management process, but also the development of an organisational infrastructure to support the project manager in activities concerning the mitigation of potential risks, the elimination of risks, the preparation of alternative actions or the definition of tolerances (temporal and monetary) to protect against its occurrence (Pritchard, 2001, p. 24).

2. Subject of study

The organisation under examination is a selected SME company based in Zabrze (Poland). The company specialises in medium- and large-scale production of metal products using the following methods: stamping of steel and aluminium strips and sheets, tube cutting and forming, and wire bending and forming. The main area of activity is the automotive sector (over 95% of volume), but also the white goods, gas and metallurgy industries. In June 2022, the company employed 60 people with an employment growth rate of 4 FTEs per quarter. The company has an implemented and maintained quality management system based on the requirements of the ISO 9001:2015 standard and the IATF 16949:2016 specification. Product design is excluded from the scope of certification of the referenced standards, as the company implements customer product designs based on the technical documentation provided. The implementation of new projects therefore consists of designing the production process based on the product design provided by the customer, including finding material suppliers and designing and manufacturing or purchasing the necessary tools.

Each year, the company carries out around twenty projects. Due to the small size of the organisation, the project teams consist entirely of employees who carry out non-project-related tasks on a daily basis. The main constraint on each of the projects undertaken is time. Most often, 24 to 30 weeks elapse between the start of work on a project and its completion.

Due to the specific nature of the industry, the quality of the product, i.e. meeting all the requirements that the customer has set out in the product technical documentation, also plays an extremely important role. These include dimensional requirements, material requirements, packaging or additional tests to confirm product properties.

The company operates in an environment of fierce competition, a rapidly changing materials market and stringent quality and logistical requirements set by customers. From this point of view, in the implemented projects, the development and implementation of a risk management model, including risk identification and assessment, becomes essential for their success. It was assumed that the risk management model for the project management process, in the selected company, would include the following elements:

- a) Identification of risk factors in ongoing projects.
- b) Risk analysis
- c) Risk evaluation
- d) Developing methods of responding to risks.

3. Development of risk management model

The development and implementation of a risk management model for the project management process in a selected company requires:

- identification of risk factors in ongoing projects,
- risk analysis and evaluation,
- developing methods for responding to risks.

3.1. Identification of risks

In order to identify potential risk factors, a two-stage brainstorming session was conducted with members of the project teams. In an ingenuity session, participants gave a maximum number of potential risk factors, which were later reviewed by a panel of experts. This resulted in a number of potential risk factors. These factors were categorised according to the quality management system processes involved in the implementation of new projects, i.e.: quoting and purchasing, process design (including tool design), logistics, quality control, common/general. This resulted in a list of thirty-three potential risk factors, categorised according to the processes of the quality management system. The list of factors is presented in Table 1.

Table 1.*List of risk factors identified in brainstorming*

No.	Offering and procurement
1.1	Incorrect calculation - underestimation of bid.
1.2	Incorrectly selected manufacturing technology at the bidding stage.
1.3	Failure to recognise legal/regulatory requirements
1.4	Failure to recognise customer requirements
1.5	New, untested supplier - risk of discontinuity of supply/poor quality
1.6	Unstable supply due to the length of the supply chain.
1.7	Linguistic/cultural barrier in dealing with supplier
1.8	Linguistic/cultural barrier in customer relations
1.9	No material available for the project
	Process design (including tool design)
2.1	Poorly designed tool
2.2	Poorly designed process
2.3	Ineffective performance analysis
2.4	Inadequate machinery
2.5	Poor supervision of tools (lack of spare parts)
2.6	Lack of oversight of tool design change
2.7	Lack of human resources to produce the pre-series
	Logistics
3.1	Overloading the own fleet
3.2	Risk of late delivery of production material
3.3	Damage to the material during transport
3.4	Damage to products during transport
3.5	Unsuitable storage conditions
3.6	Excessive freight risk
3.7	Increase in transport costs
3.8	Packaging inadequate for transport conditions
	Quality control
4.1	Unaccounted for suitable method of measurement - increase in cost of measurement
4.2	Inadequate measuring method - insufficient measuring capacity
4.3	Failure to meet product quality requirements (incorrect dimensions)
4.4	Lack of availability of measurement equipment.
	Common/general risks
5.1	Loss of data confidentiality
5.2	Threat of cyber attack
5.3	Lack of financial liquidity
5.4	Insufficient experience of the project coordinator
5.5	Insufficient experience of the project team.

Source: own study.

Group expert assessment was used to determine the materiality of the identified risk factors. It belongs to the heuristic methods that are increasingly being used to analyse management processes. The essence of the group expert appraisal method is to determine the relative importance of the assessments given by the individual experts. Hence, the team of experts making the assessment should be competent and comprised of individuals with compatible views in the field under study. Experience can be an indicator for the selection of experts.

It appears that an expert's self-assessment of his or her relative competence is relatively well correlated with his or her actual knowledge of the field. For this reason, experience can be an objective indicator to assist in the selection of individual experts. Thus, as an indicator of the degree of competence of the expert obtained from the self-assessment, the competence coefficient - K_k calculated according to the formula can be adopted:

$$Kk = (kz + ka)/2 \quad (1)$$

where:

Kk - expert competence coefficient,

kz - coefficient of the expert's degree of familiarity with the problem,

ka - argumentation factor.

The coefficients kz and ka are obtained from the expert's self-assessment and take values in the range <0.1>; thus, the coefficient Kk also takes values in the range <0.1>. In order to determine the value of the coefficient for the expert's degree of familiarity with the problem in question kz, the experts were asked to self-assess their familiarity with the problem using a rating from a five-point scale (Table 2).

The number of points obtained by the expert is multiplied by 0.1 and this number is taken as the value of the coefficient for the expert's degree of familiarity with the problem kz. The argumentation coefficient ka, in turn, takes into account the structure and sources of arguments used by the expert in expressing his or her opinion. In order to determine the value of the argumentation coefficient, the experts determined their familiarity with the problem, taking into account the source of the arguments that formed the basis of their ratings (Table 3).

Table 2.

Assessment of the expert's familiarity with the problem in question

No.	Evaluation by the expert	points
1	Expert does not know the problem	0
2	Expert knows little about the problem	1, 2, 3
3	Expert knows the problem, theoretically but is not involved in solving it	4, 5, 6
4	Expert knows the problem, and participates in solving it	7, 8, 9
5	Expert knows the problem, very well - it belongs to the expert's specialisation	10

Source: Own study based on: Męczyńska, A. (2007). Grupowa ocena ekspertów w procesach decyzyjnych zarządzania. Zeszyty naukowe. Organizacja i Zarządzanie, z. 40. Silesian University of Technology.

Table 3.

Assessment of knowledge of the issue in question, taking into account the source of the arguments

Source of argumentation	Argumentation		
	high	average	low
Expert's theoretical analysis	0.3	0.2	0.1
Practical experience of the expert	0.5	0.4	0.3
Generalisation of the work of indigenous authors	0.05	0.035	0.02
Generalisation of the work of foreign authors	0.05	0.035	0.02
Expert intuition	0.1	0.08	0.06

Source: Own study based on: Męczyńska, A. (2007). Grupowa ocena ekspertów w procesach decyzyjnych zarządzania. Zeszyty naukowe. Organizacja i Zarządzanie, z. 40. Silesian University of Technology.

The coefficients for the expert's degree of familiarity with risk in projects (kz), argumentation (ka) and competence (Kk) were determined on the basis of the experts' self-assessment. The results are presented in Table 4.

Table 4.

Summary of coefficients for the expert's degree of familiarity with the problem, argumentation and competence

Expert	kz	ka	Kk
E1	0.7	0.85	0.775
E2	1	0.75	0.875
E3	0.7	0.45	0.575
E4	0.7	0.7	0.7
E5	1	0.85	0.925
E6	0.1	0.25	0.175
E7	0.3	0.6	0.45
E8	0.5	0.6	0.55
E9	0.5	0.45	0.475

Source: own study.

Experts for whom the competence coefficient (Kk) reached a value greater than or equal to the threshold value $s = 0.5$ were qualified for the next part of the study. This group consisted of 6 people (experts E6, E7 and E9 were not qualified).

The identified experts were asked to rate the potential risk factors. The study was conducted using a questionnaire in an MS Excel spreadsheet, in which the experts were asked to rate the importance of the potential factors on a scale from 0 to 100 points. The results of the assessment are shown in Table 5.

Table 5.

Summary of expert assessments for risk factors

No.	Risk factors	E1	E2	E3	E4	E5	E8
1.1	Incorrect calculation - underestimation of the offer.	75	70	60	65	60	55
1.2	Incorrectly selected manufacturing technology at the bidding stage.	55	50	40	45	45	40
1.3	Failure to recognize legal/regulatory requirements.	85	75	55	60	65	50
1.4	Misunderstanding of customer requirements	80	85	65	70	75	70
1.5	New, untested supplier - risk of not maintaining continuity of supply/insufficient quality.	85	85	80	80	90	75
1.6	Unstable supply due to length of supply chain.	80	70	90	75	70	75
1.7	Language/cultural barrier in dealing with supplier	30	20	40	45	50	35
1.8	Language/culture barrier in dealing with client	30	25	25	25	20	30
1.9	Lack of material availability for the project	80	65	45	55	30	45
2.1	Poorly designed tool	55	50	65	50	55	50
2.2	Poorly designed process	45	40	55	50	55	65
2.3	Ineffective performance analysis	50	40	50	50	45	50
2.4	Inadequate machinery	75	80	70	55	60	50
2.5	Poor supervision of tooling (lack of spare parts)	60	60	50	55	60	65
2.6	Lack of supervision of tool design change	90	70	40	35	45	50
2.7	Lack of human resources to produce pre-series	65	60	40	45	30	45
3.1	Excessive workload on own fleet	30	25	20	15	30	40
3.2	Risk of late delivery of material for production	55	55	70	65	60	65
3.3	Damage to material during transport	30	30	35	40	35	30

Cont. table 5.

3.4	Damage to products during transport	60	55	60	65	60	60
3.5	Inadequate storage conditions	60	65	65	55	60	60
3.6	Excessive freight risk	20	20	35	40	20	35
3.7	Increase in transport costs	20	30	45	35	40	20
3.8	Packaging inadequate for transport conditions	50	45	20	40	30	35
4.1	Inadequate measurement method - increase in measurement cost	60	65	45	60	55	65
4.2	Inadequate measurement method - insufficient measurement capacity	50	55	45	75	70	45
4.3	Failure to meet product quality requirements (incorrect dimensions)	85	85	50	60	75	75
4.4	Non-availability of measuring equipment.	70	75	60	70	40	70
5.1	Loss of data confidentiality	40	40	40	45	40	45
5.2	Threat of cyber attack	55	50	50	50	55	45
5.3	Lack of liquidity	60	65	65	60	65	55
5.4	Insufficient experience of project coordinator	20	20	35	40	20	25
5.5	Insufficient experience of the project team.	40	20	45	50	35	35

Source: own study.

Kendall's concordance coefficient ω (Cieslak, 2001, p. 21) was used to characterise the degree of agreement between experts' opinions.

In the next stage of the research, the relative importance of objects method was used to identify the risk factors to be taken into account in the projects implemented by the organisation. The relative importance of objects method uses designations as follows:

M - number of experts participating in the group evaluation,

N - number of sites assessed,

m_j - number of experts evaluating the site,

m^* - number of experts evaluating at least one site,

$m_{\max j}$ - the number of experts who gave the maximum number of points when evaluating the j -th object,

c_{ji} - score awarded to the j -th site by the i -th expert,

n^* - number of objects assessed by at least one expert.

In the method of relative importance of objects, the experts first assessed the potential risk factors and then the generalised opinion of the experts and the degree of agreement of their opinions were determined. The basic indicator of the generalised opinion of the experts is the mean evaluation value M_j determined for each j -th object, calculated according to the formula:

$$M_j = \frac{\sum_{i=1}^{m_j} c_{ji}}{m_j} \quad (2)$$

The greater the value of M_j , the greater the importance of the factor in question. A complementary indicator of generalised expert opinion and the relative importance of objects is the frequency of awarding the highest possible rating that an object can receive K_{\max} calculated according to the formula:

$$K_{\max j} = \frac{m_{\max j}}{m_j} \quad (3)$$

where $j = 1, \dots, n$.

Of great importance for the opinion on the significance of an object (factor) is the sum of the ranks received by this object S_j . When determining the sum of the ranks, only those objects that have been assessed by a minimum of one expert and only those experts who have assessed a minimum of one object are taken into account. The determination of the sum of the ranks is carried out in the following steps:

1. A completed matrix $[c'_{ji}]$ is created. If the i -th expert is considered insufficiently competent then c'_{ji} is assumed to be the mean value of the evaluation of the factor in question. Otherwise $c'_{ji} = c_{ji}$.
2. For each expert, the sequence of their evaluations is ordered in descending order, resulting in a sequence c''_{jio} , where: $j = 1, 2, \dots, n$.
3. Each grade in the above sequence is assigned a rank of $r'(c''_{jio})$ according to the rule:
 - if the string is strongly decreasing then $r'(c''_{jio}) = j$,
 - if there are words in the sequence that are the same, they are given the same rank equal to the arithmetic mean of the ranks they would have if they were different.
4. The rank of object j , with the evaluation io -th expert, is equal to the rank of the evaluation that this object has received and of expert io .
5. The sum of the ranks awarded by the group of m experts to the j -th object is calculated according to the formula:

$$S_j = \sum_{i=1}^m r_{ji} \quad (4)$$

The following risk factors had the highest average score (above 60 points):

- 1.5 New, unproven supplier - risk of failure to maintain continuity of supply/inadequate quality (82.50 points).
- 1.6 Unstable supply due to length of supply chain (76.67 points).
- 1.4 Failure to recognise customer requirements (74.17 points).
- 4.3 Failure to meet product quality requirements (due to incorrect dimensions) (71.67 points).
- 4.4 Failure to recognise legal/regulatory requirements (65.00 points).
- 4.5 Inadequate machinery (65.00 points).
- 1.1 Incorrect calculation - underestimation of bid (64.17 points).
- 4.4 Lack of availability of measurement equipment (64.17 points).
- 3.2 Risk of untimely delivery of production material (61.67 points).
- 3.3 Lack of liquidity (61.67 points).
- 3.5 Inadequate storage conditions (60.83 points).
- 3.4 Damage to products during transport (60.00 points).

For all risk factors, the k_{max} index was 0. This means that in no case did the experts give the highest rating. To characterise the concordance of the experts' opinions, the Kendall concordance coefficient was calculated, the value of which was $\omega = 0.72$ and, with the scale proposed by A. Stabaryła, is assessed as good (Stabryła, 2005, p. 106).

The average values of the scores assigned to the individual risk factors M_j are shown in Figure 2.

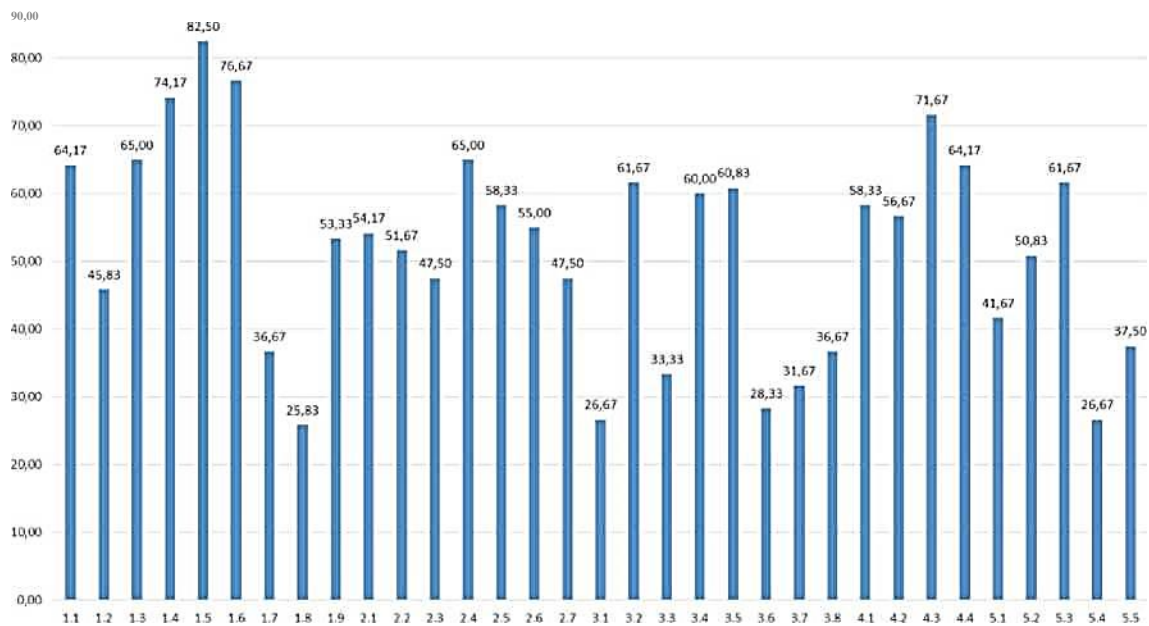


Figure 2. Average M_j scores for potential risk factors.

Source: own study.

It should be noted that the identified risk factors revolve around three main thematic areas. The first is suppliers and supply logistics in the broadest sense, including but not limited to supply chain disruptions or transport risks. The second area is made up of risk factors that can be called technical related to production and support infrastructure. The last group contains elements that are related to the business as such and concern, for example, incorrect calculation, failure to recognise or misrecognise various types of requirements or lack of financial liquidity.

It was assumed that all of the aforementioned risk factors (with an average score of more than 60 points) are critical and must always be assessed in the risk assessment model for projects in the company under review.

3.2. Risk analysis and evaluation in projects

The projects carried out by the company under study follow an established project management model. This has allowed risk analysis to be incorporated into the relevant stages - at project initiation (when the project information sheet is created) and during the stages called 'project progress review', carried out after each project milestone. A minimum of three reviews must occur during the life of each project, so that a minimum of four risk analyses will be carried out throughout the project.

The risk assessment matrix (Wroblewski, 2015), adopting a three-stage scale for assessing the probability and a three-stage scale for the effects of events considered as risk factors, was used for the risk assessment. This is a graphical method of assessing the level of risk using a two-dimensional matrix in which one variable is the probability of a hazard occurring and the

other is the effects of that hazard. The assessment of the probability and consequences of events can be carried out on different scales. In the present case, a scale of 1 to 3 was adopted for both the probability of events and their consequences of occurrence. A value of 1 means low probability and low impact, a value of 2 means medium probability and medium impact and a value of 3 means high probability and high impact.

Risk probability levels have been adopted for specific events that are specific to individual risk factors (Table 6).

Table 6.

Description of the likelihood of risk factors

No.	Risk factor	P	Description
1.6	Unstable supply due to the length of the supply chain.	small	Domestic supplier
		medium	EU supply
		large	Supplier from, outside the EU
1.5	New, untested supplier (risk of discontinuity of supply/poor quality)	small	Supplier audited with no major discrepancies
		medium	No audit has been carried out but the supplier is certified to a minimum of ISO 9001:2015
		large	Audit not carried out, supplier not certified
1.4	Failure to recognise customer requirements	small	Known customer (previously identified requirements)
		medium	New customer, quality contract signed
		large	New customer, no quality requirements presented
4.3	Failure to meet product quality requirements (incorrect dimensions)	small	Low-complexity product
		medium	Medium to high complexity product similar to those already produced
		large	Medium to high complexity product different from those previously produced
1.3	Failure to recognise legal/regulatory requirements	small	Known country of destination of the product, previously identified requirements
		medium	Known country of destination of the product, previously unrecognised requirements
		large	Country of destination unknown
2.4	Inadequate machinery	small	A product similar to those previously produced
		medium	Product different from, those previously produced with indication of manufacturing technology
		large	Product from, a different (from, existing) product group
1.1	Incorrect calculation - underestimation of the offer	small	Low-complexity product offered
		medium	Offered product of medium to high complexity similar to those previously produced
		large	The product on offer is of medium to high complexity different from what has been produced so far
4.4	Lack of availability of measurement equipment	small	Requires the use of manual means of measurement
		medium	Requires the use of a measuring machine
		large	Requires the use of means of measurement that are not in the measuring laboratory's equipment
3.2	Risk of late delivery of production material	small	Local supplier, standard material
		medium	Local supplier, dedicated material
		large	Foreign supplier

Cont. table 6.

5.3	Lack of financial liquidity	small	Determined batch sizes, date of commencement of batch production and conditions for release of tool payments
		medium	Known production start date, unknown series sizes
		large	Tentative date for start of series production, unknown volume
3.5	Unsuitable storage conditions	small	Material/product insensitive to conditions storage
		medium	Material/product that can be provided appropriate storage conditions
		large	Material/product particularly sensitive to storage conditions such as temperature, humidity, soiling
3.4	Damage to products during transport	small	Product not prone to deformation
		medium	Product susceptible to deformation, similar to previously produced (proven method packaging)
		large	Product susceptible to deformation, different than previously produced product (no proven packaging method)

Source: own study.

Risk results levels have been adopted for specific events that are specific to individual risk factors (Table 7).

Table 7.

Description of the effects of the risk factors

No.	Risk factor	S	Description
1.6	Unstable supply due to the length of the supply chain	small	There may be slight delays in delivery without affecting the timing of activities.
		medium	There will certainly be slight delays in delivery. Required changes in deadlines implementation of activities and monitoring of supply status
		large	Long delays in delivery may occur. Required monitoring of supply status and maintenance of safety stock
1.5	New, untested supplier (risk of discontinuity of supply/poor quality)	small	Delay/insufficient quality will not affect the project deadline. Minor adjustments to the timing of individual project activities will be required.
		medium	Delay/inadequate quality may affect the project deadline. Significant adjustments to the timelines of individual project activities will be needed to keep the project on track.
		large	Delay/insufficient quality will certainly affect the timing of the project.
1.4	Failure to recognise customer requirements	small	Unrecognised requirements do not affect the product
		medium	Unrecognised requirements affect the product. Changes in the manufacturing process are necessary
		large	Unrecognised requirements preclude use of the product by the customer

Cont. table 7.

4.3	Failure to meet product quality requirements (incorrect dimensions)	small	Failure to meet the requirements does not affect the functionality of the product
		medium	Failure to meet the requirements slightly affects the functionality of the product. Possible deviation from, customer
		large	Failure to meet the requirements affects the functionality of the product, preventing its use by the customer
1.3	Failure to recognise legal/regulatory requirements	small	Unrecognised requirements do not affect the use of the product
		medium	Unrecognised requirements affect product use. Adaptive changes are necessary
		large	Unrecognised requirements affect product use. Adaptive changes are necessary
2.4	Inadequate machinery	small	Slight decreases in productivity/quality or increased operating expenditure with no major impact on project profitability
		medium	Declines in productivity/quality reducing project profitability
		large	Declines in productivity/quality reducing project profitability
1.1	Incorrect calculation - underestimation of the offer	small	Little impact on project viability
		medium	Project on the brink of viability
		large	Unprofitable project
4.4	Lack of availability of measurement equipment	small	The need to purchase measurement means
		medium	Increase in quality control costs
		large	Necessary measurements in an external laboratory. Significant increase in quality control costs
3.2	Risk of late delivery of production material	small	Slight delay without impact on the delivery date of the product to the customer
		medium	Delay that will affect the delivery date. Acceptable by the customer
		large	Delay not acceptable to the customer
5.3	Lack of financial liquidity	small	Slight increase in budget at the expense of other activities
		medium	Temporary stoppage of work on the project without affecting the completion date
		large	Stopping activities in the project. Delaying the implementation date
3.5	Unsuitable storage conditions	small	Slight deterioration in visual aspects
		medium	Deterioration of visual aspects without affecting functionality, additional operations required
		large	Property deterioration affecting functionality
3.4	Damage to products during transport	small	Damage to packaging without damaging the products
		medium	Minor damage to products. Customer dissatisfaction, need to replace/repair parts of products
		large	Damage to the bulk of the delivery so that it cannot be used

Source: own study.

Once the values of the probability and effect scales for a given risk factor have been estimated, a determination of the level of risk (on a three-stage scale, as low, medium and high) is made. Risk in this method is calculated as the product of the probability of a risk factor and its effect:

$$R = P * S \quad (5)$$

where:

P – value on the probability scale,

S – result scale value.

With the assumed size of the risk assessment matrix (3x3), presented in Fig. 3, it can take values from 1 to 9. Three levels of risk are possible as a result of the analysis:

- **small** (marked in green on the risk map - Figure 3), for which the product of results and probability takes the values 1 and 2, indicates an acceptable risk to be monitored for the risk factor being assessed,
- **medium** (highlighted in yellow on the risk map), for which the risk indicator value is between 3 and 4, represents an acceptable risk, which, however, is highly likely to affect the achievement of the full project objectives and for which countermeasures should be introduced to reduce its level,
- **high** (highlighted in red on the risk map), for which the product of results and probability takes values of 6 and 9, represents an unacceptable risk that poses a very serious threat to the achievement of the project objectives and for which decisive countermeasures must be taken to reduce the level to medium or low.

It should be noted that categorising risk factors into different levels of risk involves evaluating them, which means enforcing the necessary response (countermeasures) on the part of the risk manager.

			Probability		
			Small	Medium	Large
			1	2	3
Result	Large	3	3	6	9
	Medium	2	2	4	6
	Small	1	1	2	3

Figure 3. Risk assessment matrix.

Source: own study.

3.3. Risk response

Appropriate risk response actions were developed for all risk factors at all risk levels. The developed actions were proposed based on expert knowledge and experience from previous projects. They are presented in Table 8.

Table 8.
Description of risk response

No.	Risk factor	R	Description
1.6	Unstable supply due to the length of the supply chain.	small	Confirmation of delivery date in agreed moments in the course of the project
		medium	Ongoing, frequent monitoring of supply status
		large	Ongoing, frequent monitoring of supply status, maintenance of safety stock
1.5	New, untested supplier (risk of discontinuity of supply/poor quality)	small	Ongoing monitoring of supply status
		medium	Ongoing monitoring of supply status. Ordering part of the material from an alternative supplier
		large	Due to the high cost of material in the price of the product, consideration should be given to choosing another supplier
1.4	Failure to recognise customer requirements	small	Completion of knowledge of customer requirements
		medium	Unrecognised requirements affect the product
		large	Unrecognised requirements preclude use of the product by the customer. Scrapping of products
4.3	Failure to meet product quality requirements (incorrect dimensions)	small	Process improvement to achieve 100% compliance or customer acceptance of current status
		medium	Process improvement to achieve 100% compliance
		large	Product scrapping
1.3	Failure to recognise legal/regulatory requirements	small	Action not required
		medium	Identification of requirements, adaptation of the process/product
		large	Identification of requirements, adjustment of process/scrapping of non-compliant product
2.4	Inadequate machinery	small	Refining the production process
		medium	Refinement of the production process, changes to the tool design
		large	Considering the purchase of another/more efficient machine
1.1	Incorrect calculation - underestimation of the offer	small	No additional action
		medium	Conduct a process performance analysis. Develop a plan to improve profitability
		large	Enter into negotiations with the customer
4.4	Lack of availability of measurement equipment	small	Purchase of additional measurement equipment
		medium	Carrying out measurements on measuring machines, involvement of measuring laboratory
		large	Obtaining tenders and carrying out measurements in an external laboratory

Cont. table 8.

3.2	Risk of late delivery of production material	small	Confirmation of delivery date in agreed moments in the course of the project
		medium	Ongoing, frequent monitoring of supply status
		large	Ongoing, frequent monitoring of supply status, maintenance of security stocks
5.3	Lack of financial liquidity	small	Revision of the project budget
		medium	Obtaining funds from the budgets of other projects or operational activities
		large	Obtaining an additional source of funding for the project
3.5	Unsuitable storage conditions	small	Carry out root cause analysis, improve storage conditions.
		medium	Repairing products, conducting root cause analysis, improving storage conditions.
		large	Scrap products, conduct root cause analysis, improve storage conditions
3.4	Damage to products during transport	small	Root cause analysis
		medium	Repair of products; root cause analysis of damage, improvement of packaging
		large	Delivery scrapping, root cause analysis, change in packaging method

Source: own study.

4 Summary

The paper addresses the issue of risk management in projects implemented in a selected automotive company. The risk management process is presented as consecutive stages of risk identification, risk analysis and evaluation, and selection of adequate and effective methods of risk response.

The identification of potential risk factors for the company under study was done using brainstorming. This was followed by a selection of key project risks based on a group expert assessment method. Employees who are involved in project implementation on a daily basis took part in the research. The research resulted in a group of twelve key risk factors. In their analysis, the experts identified essentially four groups of key risks: technical, logistical, supplier-related and business wide.

The consideration of the determinants of the risk factors that went into the risk management model for projects also leads to the conclusion that the identification of factors should be carried out on a cyclical basis. Once the situation in our neighbours has normalised and the supply chain has been rebuilt, the experts will certainly identify other risks as key, perhaps risks that were not included in this research.

Based on the key risk factors, a model for the analysis and evaluation of risks in projects was developed. A qualitative method of risk analysis and evaluation based on a risk assessment matrix was used here. Three levels of risk were distinguished in the model due to the assumed scales of probability and effect of risk factors. The advantage of this method is the graphical depiction of the risk level with a clear division into low risk (green), medium risk (yellow) and high risk (red). This allows a quick presentation of the magnitude of the risk and the colours analogous to traffic lights make it easy to understand the result at a glance. It also allows appropriate and effective ways of responding to risks.

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THE EFFECTIVENESS OF INTERNET MARKETING IN MANAGING A MICRO-COMPANY. CASE STUDY

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Purpose: The reason for writing the article was the surge of interest in internet marketing. The aim of the research was to describe the benefits of a micro-enterprise by resigning from traditional marketing tools for the use of Internet marketing.

Design/methodology/approach: In the theoretical part of the work, the definition of internet marketing was reviewed and the expectations of enterprises in this regard were indicated. The research method used to solve the problem was the case study. Research carried out in the company allowed to recognize the problem in business practice.

Findings: The paper found that internet marketing in Visign Studio is much more effective than traditional marketing. It allows you to reach a much larger number of customers with your offer, allows you to collect much more information about them, and all this at much lower costs.

Research limitations/implications: The identified problem requires further research, including cross-industry research, and diversification of research approaches and methods used in social sciences, including quantitative ones.

Practical implications: The results of the study clearly indicated the high effectiveness and high efficiency of internet marketing in a micro-enterprise. Enterprises should not be afraid of transferring marketing activity to the Internet, as generally available tools create low barriers to entry to the Internet. Currently, online marketing tools allow you to reach a wide audience with your offer, acquire new customers and increase sales.

Social implications: The issues raised in the article fall within the spectrum of society's transition to the impact of virtual reality, to the information society. Internet marketing has a pro-ecological character because it is based on intangible resources.

Originality/value: The paper presents, on an example selected from economic practice, how to set up a micro-company and then develop it using generally available Internet marketing tools. The article is addressed to entrepreneurs who create new enterprises or run their businesses for years, but are afraid of innovative technologies offered on the Internet. The added value is a detailed description of a thriving, young company that is rapidly developing and expanding its reach thanks to internet marketing.

Keywords: management, internet marketing, micro-enterprise.

Category of the paper: Case study.

1. Introduction

Nowadays, the Internet has become the basic tool of marketing communication. Thanks to it, micro-enterprises gained the opportunity to conduct activities ensuring interaction with their clients - Internet users. The dissemination of the availability of various e-marketing tools and new implementations, such as social networking sites, blogs, discussion groups, podcasts, e-mails, instant messaging, have given marketing on the Internet a whole new dimension. The development of technology has significantly modified the possibilities and nature of the company's communication with the market. The main difference offered by the Internet to enterprises is the possibility of full integration of communication channels with large groups of customers. It is possible thanks to the easy contact with the buyer in the distribution channel.

Members of The Balance Small Business have defined internet marketing as term that covers all online marketing services and products. It refers to all online and digital strategies. It is also referred as interactive marketing, because it relies on not only reaching a specific recipient, but also triggering specific actions in his behavior. The truth is that it is currently the most effective and most used form of marketing in the 21st century. On the Internet companies can target their advertisements to a large group of recipients and conduct marketing research. It also allows you to create brand awareness among potential or existing customers of the company in the most effective way. It is also one of the cheapest forms of marketing compared to effectiveness. For comparison, the cost of placing the simplest advertisement is directly proportional to:

- about 600 seconds of traditional radio advertising,
- 5 seconds of television advertising if we take into account the highest intensity of viewership,
- about a month of advertising on a billboard in one of the major cities.

This information shows that the costs compared to the standard methods used for many years are incomparably smaller and the possibilities are much greater. This is conducive to increasing the marketing specificity of enterprises, because facilitating access forces marketing departments in companies to take much better adapted actions. Thanks to the new technology, the consumer also has the opportunity to make a quick purchase without leaving home. Such far-reaching changes make the current sales process, in which the seller played a significant role, completely obsolete in the new, multi-channel purchasing process. Accompanying the consumer in the decision-making process by the seller no longer plays such an important role, because this decision has already been made previously without his support. (Vanheems et al., 2013)

Internet Marketing (also known as e-marketing, on-line marketing, cybermarketing, digital marketing) should be understood as broad activities marketing conducted on the Internet. Digital marketing is now a global phenomenon. All companies regardless of the industry,

industrial as well as service, have to face the latest trend which is digital marketing (Satapathy et al., 2016). This paper aims to pay attention to the fullest use of tools, methods and procedures of Internet marketing and the importance of its impact on the effectiveness of activities in managing a micro-company.

According to E. Frąckiewicz, Internet marketing means “conducting marketing activities through a global network. The Internet does not replace traditional ways of doing things, nor does it establish new marketing rules by completely rejecting the rules used so far. Instead, it is a new marketing tool” (Frąckiewicz, 2006). It is achieving goals by introducing new technologies (Hartanto et al., 2021). New digital technologies facilitate marketing activities. Thanks to the Internet and a wide range of offers addressed to enterprises, digital marketing is cheaper and more easily available online. Also, the constantly growing number of Internet users makes digital marketing more and more effective. This is the result of the use of marketing technology (Bermeo-Giraldo et al., 2022) It provides an interactive experience between sellers and buyers virtually (Chaffey, Ellis-Chadwick, 2016). Despite the fact that transactions are carried out physically in the real world technology is crucial (Hussien et al., 2020).

S. Dann and S. Dann speaking in the context of Internet marketing, draw attention to the following issues:

- the introduction and foundations of e-marketing, its strategies and planning,
- online buyer behavior,
- creation, delivery and exchange of the offered values,
- branding and promotion,
- services and relationship marketing,
- community and networks,
- implementation,
- usage; social media, mobile commerce,
- offline activity,
- social conditions (Dann, Dann, 2011).

The network economy causes the differences between channels to disappear sales (distribution) and communication (promotion) channels and allows you to go straight to the purchase process, regardless of the time, place and type of product purchased. The new paradigm of marketing communication enables the implementation of sales to every entrepreneur on a mass scale and bypassing traditional distribution channels (Brylew, 2019).

The most important aspect of any online marketing campaign is building a relationship. For this reason, what distinguishes internet marketing from the other tools known to us is much greater personalization to the recipient.

2. Presentation of the micro-company Visign Studio

Visign Studio was founded in 2019 and deals with broadly understood computer graphics and marketing. The company's headquarters is located in Czestochowa, Poland, and they conduct their main activity via the Internet. There are three main departments in the company:

- graphics - designing graphic materials used in advertising and printing,
- websites - creation and full service of websites, including SEO,
- marketing - conducting marketing campaigns.

In addition, the owners of the company assumed that they want to meet the needs of their customers comprehensively. Due to the high costs of printing machines, they decided to outsource these services. Thanks to this solution, the company offers a full range of standard, large-format and non-standard printing, such as gadgets or clothing prints. They specialize in building a coherent visual identity and compatible marketing strategies for enterprises.

The mission of the company from the very beginning was to refresh the image of marketing and to introduce it to smaller enterprises, which until now could not afford professional service. Due to the fact that the company is new on the market, has no reputation or market position, the initial target group were small and medium-sized local enterprises. The owners of the company focused on minor needs that were not associated with high earnings. They developed their professionalism instead, which allowed for systematic image building.

The team consists of five young and ambitious people. The two owners, who have extensive experience in the industry, took three young students under their wing. The most important skills they paid attention to when choosing them were, of course, the knowledge of basic concepts in the areas of computer graphics and web programming, but also the desire for self-development and success. The tactic worked and after almost three years of work, the team remains unchanged to this day.

To provide services to its customers, the company uses the most modern and, what is very important, the most proven technologies. Employees use a full Adobe package to create graphic designs. Websites and stores are created using Wordpress. A content management system written in PHP. The company also makes sure that all the printing performed in external companies are always made by using the highest quality materials. Competition in the IT and printing industries is huge, both locally as well as globally. In Czestochowa alone, there are about 70 companies providing similar services as Visign Studio. In addition, the design industry is generally available, so the possibility of creating your own business with a similar profile is not a problem.

Plans for further development of the company are very broad. The owners constantly emphasize that they strive for high market diversification and automation of key processes. However, they do not want to completely eliminate the human factor from the provision of services, because, as they emphasize, no machine can replace human creativity. They also plan

to expand the range of services their company is to offers. This is not about more separate departments, but additional specializations to the existing ones. A perfect example is a plan to implement spatial projects and 3D modeling for the architectural market. However, it requires a lot of work due to the hardware needs and additional staff skills. The company wants to create offices for its employees in every major provincial city where it will have at least 3 employees. The reason why it is so important is because the industry in which the company operates is characterized to a large extent thanks to remote work. However, the company pays great attention to the development of its employees and wants to create favorable working conditions for them.

To sum up, the company Visign Studio is characterized by a modern approach and the highest management standards introduced from the very beginning. The dynamics of development shows that the chosen direction is the right way to create an international company serving the largest clients.

3. The use of Internet marketing in the Visign Studio enterprise

The beginnings of business activity are not easy for anyone, and building a position on the market among constantly growing competition in almost every industry does not make this task easier. This was also the assumption of the founders of Visign Studio. They decided to focus on the simplest and proven marketing activities. The Internet has already shown its power in relation to very low costs.

The basic actions taken by marketers from Visign Studio was to launch the most popular tools from Google, such as Google Ads and Google Merchant Center. Through them and the created website, the company could already reach recipients from the network.

The second activity related to internet marketing was the creation and running of a continuous campaign using social media such as Facebook, Instagram and LinkedIn. The greatest emphasis was placed on Facebook due to the potential and the ability to transfer both content and graphics, which is extremely important in a graphic design studio. It started with the creation of the company's website on Facebook and sharing it among the closer environment. Then, it was planned to transfer the content to other recipients and to the potential customers at the same time. It was and still is very important to create text and graphic content consistent with identity and policy of the company. Further solutions from a company called Meta were systematically implemented and automatically added to Instagram activities. However, for almost the first 3 years of activity, little emphasis was placed on marketing via Instagram. It was recognized that there is still not enough graphic material to create a good image on this social media portal.

The last and, as it turned out, the most effective action taken at the very beginning was sending text messages and e-mails to potential customers who expressed interest in the company's activities on blogs and forums. Visign Studio representatives spent most of their time acquiring this type of contacts, personalizing the offer for needs of their clients, presenting and closing the sale. Similarly, in order to examine the effectiveness of direct and Internet-based marketing activities, four criteria are analyzed: audience selectivity, impact on addressees, communication structure, and ease of generating responses.

- Audience selectivity: Internet marketing activities using tools from Google or Facebook have a huge advantage over activities carried out using traditional methods when it comes to the aspect of creating the perfect recipient profile. This is due to the fact that during the entire process of marketing activities, the above-mentioned tools constantly collect a lot of data about the recipients of our activities, which allows us to set the company's advertisements even more precisely. There is no need to conduct any manual activity analysis, performance analysis or forecasting, because the programs do it automatically. This is a huge time and money saver. You can identify the company's market very broadly, but thanks to the data from the analyzes it is also possible to identify the ideal customer to whom our offer will reach the greatest extent.
- Impact on recipients: Compared to telemarketing, the impact of Internet marketing on the recipient of the advertisement is incomparably smaller, which does not mean that it has no impact. In activities on the Internet, it is much more profitable to create universal advertising, because it reaches a much larger group of potential recipients, which technically gives much greater results in terms of time and costs spent on preparing a marketing campaign.
- Communication structure: The amount of information a company can convey through advertising on the Internet is very diverse. The Visign Studio company has put on many advertisements, but those that present single aspects. Such action allowed to direct the client's attention only to the facts that interest him. This is made possible by further tools from two companies, namely, both Google and Facebook collect data about their users and show them only ads with things that interest them or may potentially interest them.
- Ease of generating feedback: campaigns are created so that the recipient of the advertisement can literally express their interest in the advertised product with one click. It is the easiest and simplest form of contact using instant messengers and e-mail.

4. A summary of the results of online campaigns conducted by Visign Studio

Starting the chronological analysis of the marketing activities of the surveyed company, the ranges that were built using tools from Google, and more precisely Google Ads, were analyzed first. The campaign, which lasted practically from the very beginning of the company's operation until the research was conducted (3 years), concerned the promotion of the entire company and its corporate website. The analysis used five main factors that Google indicates as crucial for the campaign:

- Views - frequency of displayed ads. Each impression is counted, the higher frequency of displaying advertisements increases the probability of reaction to the advertisement.
- Clicks - redirecting action to visit the website.
- Local activities - activities aimed at visiting the company's headquarters by the interested customer or locating the area of its operation.
- Calls - calls made directly from the ad level count.

Data from the already configured ad were collected for the analysis, which means that the data included in the study come from February 2021 to August 2022. The report was generated directly from the customer panel on the Google Ads platform.

The first thing we noticed was the number of impressions, clicks and other activities in a given budget. PLN 3,325.20 is the total cost incurred by the company from February 2021 to August 2022 for reaching such a group of recipients.

As already mentioned, Internet activities are incomparably cheaper. If we take into account, for example, that for the period of one and a half years of operation of the Internet campaign, the same work would be performed by a full-time employee, the cost of maintaining an employee would amount to several dozen thousand zlotys. Thus, the first and most important aspect prevailing on website internet marketing is the big saving of money by the company.

The next issue is automation. In traditional activities, in direct marketing, each information must always be provided by a person, an employee. He answers every inquiry from the client, makes phone calls and prepares offers. Whereas in online marketing using tools such as Google, automatic responses and offers are set. This means nothing more than pigeonholing the customer, putting him before certain standards and assigning him so that even in the future, when a natural person (employee) from the company will have to take care of him, he will have a large dose of information about him and his needs. This will speed up the sales and service process.

Unfortunately, not everything is so simple and pleasant in using tools from Google. Despite its simple structure and easy-to-use interface, it has a very extensive calibration system. You can very precisely personalize the target group of recipients, regions, content displayed and desired actions that the recipients are to perform after seeing the advertisement. This means

that you will need an experienced person with competences who will have to calibrate the advertising system in an appropriate way. Nevertheless, these are still lower costs per opportunity if we used traditional and older methods of direct marketing.

The second, very heavily used tool by Visign Studio is the Facebook tool from a company now called Meta. It is nothing more than a social networking site that collects data of billions users from around the world on its servers. This fact is the most crucial because the amount of information about so many people gives countless possibilities.

The first indicator, which is the range and its increase, speaks of a completely different specification of this tool. Almost 170,000 recipients and a growth rate of 4.2 thousand percent gives very satisfactory results. There is also a noticeable large irregularity in the ranges. This is due to marketing activities carried out on the platform. You can see exactly when larger promotional campaigns were created and what effect they brought.

The reliable effect of the Visign Studio campaign with the Meta company gives us only a combination of two indicators, i.e. reach and visits to the website. In a very simple way, you can see which campaigns were effective only in terms of reaching the recipient, and which caused the desired reaction. This is so important, because a potential customer interested in advertising can find more detailed information about the service and all the necessary contact information only on the website.

It should be noted that the costs of campaigns conducted on the platforms did not exceed PLN 3,000 for the entire research period. Thus, the second tool already shows its advantage in savings, because of a large extent it automates the work of company representatives dealing with customer acquisition and service.

Putting the two campaigns together, they reached over 600,000 recipients together. This makes it a great way to build brand recognition on the market. In a year and a half, they achieved a result that a team of well-trained specialists in the field of marketing would take a much longer period of time and, more importantly, would consume much more capital.

Conclusion

The research carried out in the company made it possible to precisely identify the problem in business practice, describe the process of creation, scope of activity, mission and strategic assumptions of the entity selected for the research, Visual Design. Detailed analysis of reports on the company's marketing activities with the use of tools offered by the Facebook and Google Ads platforms. allowed to identify the effects and relate them to the costs. Internet marketing allows you to reach a much larger number of customers with your offer, it allows you to collect much more information about them, and all this at much lower costs. Enterprises should not be afraid of transferring their marketing activities to the Internet, as publicly available tools create

low barriers to entry to the Internet. Especially newly established micro-enterprises, whose budget for marketing is usually very limited. Currently, online marketing tools allow you to reach a wide audience with your offer, acquire new customers and increase sales. In addition, apart from the effectiveness and economic efficiency of internet marketing shown in the article, its pro-ecological character, based on intangible resources and at the same time saving non-renewable resources, should also be emphasized.

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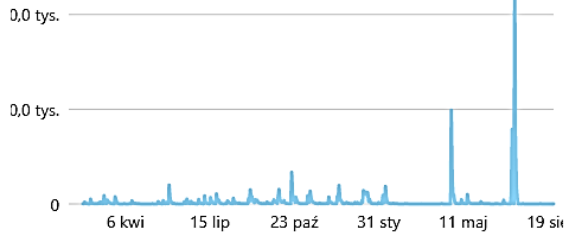
Appendix

Report Facebook Ads

Zasięg

Zasięg strony na Facebooku ⓘ

168 350 ↑ 4,2 tys. %



Zasięg na Instagramie ⓘ



Brak aktywności w wybranym zakresie dat
Wybierz inny zakres dat i spróbuj załadować raport ponownie.

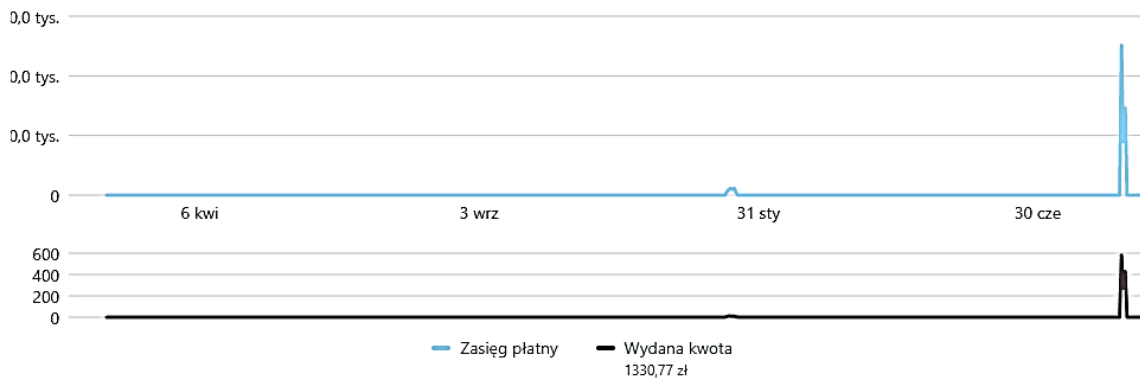
Trendy reklam

Zasięg płatny ⓘ

102 368 ↑ 1,1 tys. %

Płatne wyświetlenia ⓘ

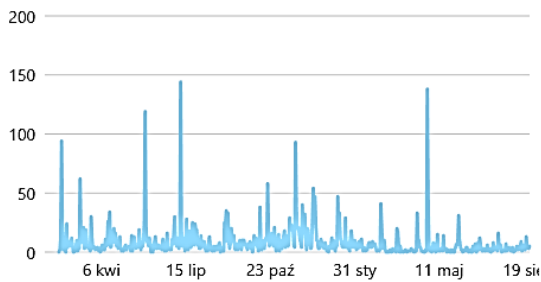
130 862 ↑ 765,7%



Odwiedziny na stronie i w profilu

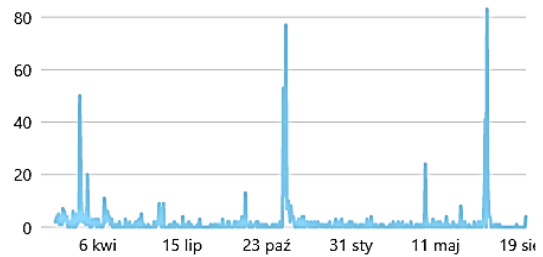
Odwiedziny strony na Facebooku ⓘ

4556 ↑ 364.9%



Wizyty w profilu na Instagramie ⓘ

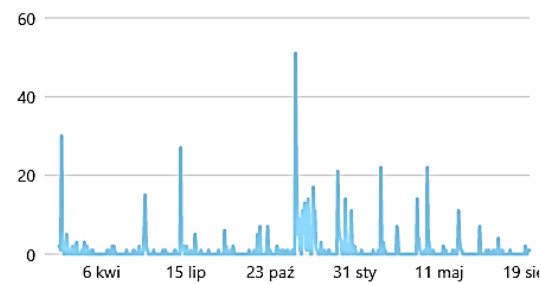
1005 ↑ 180.7%



Nowe polubienia i osoby obserwujące

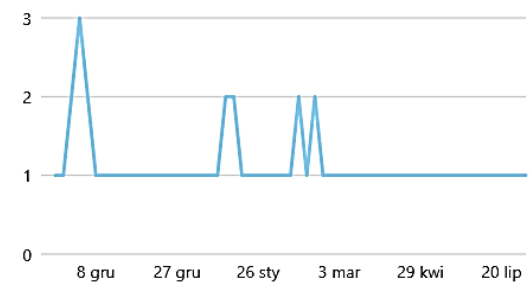
Nowe polubienia strony na Facebooku ⓘ

649 ↑ 178.5%



Nowe osoby obserwujące na Instagramie ⓘ

67 _



Report Google Ads

3 325,20 zł Wydatki całkowite



Wyświetlenia

536 tys.

Jak często wyświetlały się Twoje reklamy



Kliknięcia

4,08 tys.

Działania związane z reklamami



Działania lokalne

77

Działania wskazujące na zamiar odwiedzin



Połączenia

200

Połączenia telefoniczne z firmą

Jak często wyświetlały się Twoje reklamy

Wyświetlenie jest liczone przy każdym wyświetleniu reklamy. Im więcej masz wyświetleń, tym bardziej prawdopodobne, że użytkownicy będą klikać Twoją reklamę.

Wyświetlenia pomagają zwiększać świadomość marki. Dzięki temu użytkownicy zauważają i rozpoznają Twoją firmę.

Nie płacisz za wyświetlenia. [Dowiedz się więcej](#)

Szczegóły wyświetleń

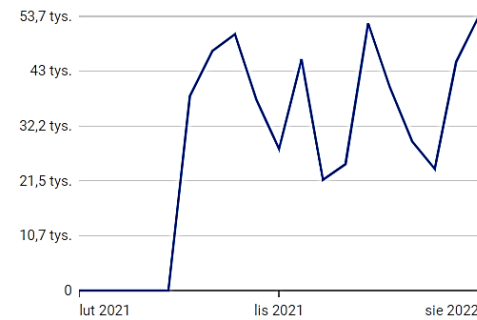
Statystyki dotyczące tego, jak Twoje reklamy docierają do użytkowników.

✦ 528 tys. – liczba wyświetleń na urządzeniach typu telefon komórkowy

125 tys. razy użytkownikom w wieku 35–44

536 229

Wyświetlenia



Działania związane z reklamami

Kliknięcia Twoich reklam prowadzą do wizyt w Twojej witrynie lub na Twojej stronie docelowej albo do połączeń z Twoją firmą.

Kiedy ktoś klika Twoją reklamę, to sygnał, że Twoje reklamy przyciągają uwagę użytkowników, którzy chcą się dowiedzieć więcej o Twojej firmie i jej ofercie.

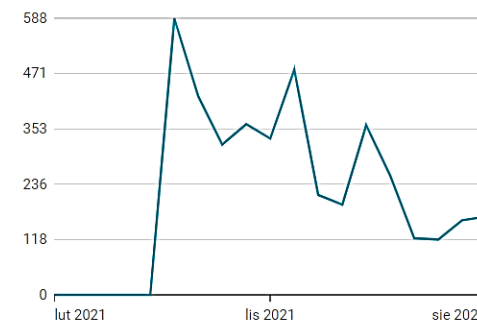
Płacisz za kliknięcia.

Skąd pochodzą kliknięcia Twoich reklam

Wyświetlamy Twoje reklamy w Google i w witrynach partnerskich Google, by pomóc Ci przyciągnąć więcej klientów przy jak najniższym koszcie. [Dowiedz się więcej](#)

4 079

Kliknięcia



600

kliknięcia w Google

405

Wyszukiwarka

Google



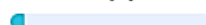
149 YouTube



0 Gmail



46 Mapy



3 479

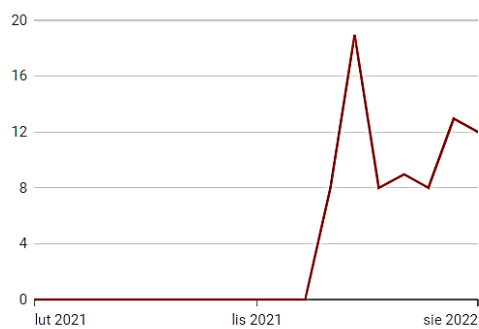
kliknięcia w witrynach partnerskich Google

Działania wskazujące na zamiar odwiedzenia Twojej firmy

Działania lokalne informują, że użytkownicy w Twojej okolicy interesują się Twoją firmą. [Dowiedz się więcej](#)

Działania lokalne obejmują:

- Działania, które użytkownicy mogą wykonać w [profilu Twojej firmy](#) w Mapach Google po zobaczeniu Twoich reklam.
- Szacunkową liczbę osób, które odwiedzają Twój sklep po kliknięciu lub obejrzeniu Twoich reklam (wizyty w sklepie stacjonarnym).

Szczegóły działania lokalnego**77****Działania lokalne**

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