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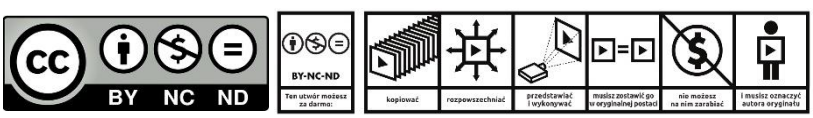



***Wersją pierwotną Kwartalnika Naukowego „Organizacja i Zarządzanie" jest wersja papierowa***

# CONTENTS

# AUTONOMY IN TEAL ORGANIZATIONS QUALITATIVE RESEARCH

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**Introduction/background:** One of the features of teal organizations is employee autonomy, which is realized, among other things, through delegation of authority, and decision-making carried out through employee participation in the consultative process.
**Aim of the paper:** The aim of this paper is to try to answer the question of what are the key areas of autonomy in teal organizations.
**Materials and methods:** The reflections in the publication are based on an analysis of the literature and qualitative research conducted with management of thirteen teal organizations. In-depth interviews were conducted and the collected data was further analyzed.
**Results and conclusions:** Practices implemented in the interviewed organizations include a wide range of autonomy, incorporating both elements of organizational autonomy and job autonomy.
**Keywords:** teal organizations, autonomy, job autonomy, self-management, self-organization.

## 1. Introduction

Scientific literature promotes concepts that are based on the idea of self-management, which increase the range of employees' autonomy. (Ziębicki, 2017). Within those approaches, we can mention the teal organization (Laloux, 2015). On the other hand, the research on Polish companies allows us to draw a not very optimistic conclusion. Only 2% of employers allow their employees to make decisions independently, and 52% mobilize them in the process. In contrast, empirical research shows a positive impact of autonomy on the commitment of employees (Christian Slaughter, 2007; Sung, Yoon, Han, 2022).

This publication will attempt to identify the elements of autonomy in 13 teal organizations using qualitative research. The main method used to obtain data was an in-depth interview with management.

[1] The publication/article presents the results of the Project financed from the subsidy granted to the Krakow University of Economics.

## 2. The concept of teal organizations

The first person to present the definition of a teal organization was F. Laloux (2015). The author defined it as a new organizational model, with the company's implementation of the self-management idea as its foundation. Laloux distinguishes a set of essential features of teal organizations, indicating, inter alia: autonomous decision-making (also called consultative processes) trust, partnership, and responsibility, transparency (Laloux, 2015); and empowerment of employees (Laloux, 2015; Jędrych, 2020). The list of companies analysed included: Patagonia, a well-known American clothing manufacturer; Buurtzorg, a Dutch non-profit organization representing healthcare; and Morning Star, belonging to the food industry. According to the author, studied companies reveal three main features to a varying extent. Those features are called breakthroughs and are as follows: self-management, wholeness, and evolutionary purpose. Their functioning is a result of changes over the years in the model of work (Laloux, 2015).

The issue of teal organizations understood according to the mainstream presented by F. Laloux is mostly interpreted by: A. Kozina and A. Pieczonka (2017); B. Ziębicki (2017); B. Powichrowska (2018); A. Akberdiyeva (2018); P. Wiench (2020); Z. Olesiński (2020); A. Rzepka (2020); A. Faron, W. Maciejewski, K. Formadi (2020); C.F. Gómez Muñoz et al. (2020). Table 1 shows an analysis of key features, describing the concept of teal organizations. This approach is referred to as philosophy (Akberdiyeva, 2018), a new paradigm, or the way for organizing teamwork (Blikle, 2016). In Poland, the concept of teal organization was popularised by A.J. Blikle (2016, p. 41), defining it as the teal civilization of work.

**Table 1.**
*Overview of selected terms characterising the concept of teal organization as presented in the literature*

| Publication | Key terms describing the concept of teal organization |
|---|---|
| A.J. Blikle (2016, p. 37) | "philosophy of work" |
| | "a new paradigm of how teamwork is organized" |
| B. Ziębicki (2017, p. 86) | "the result of the evolution of organizational models" |
| A. Akberdiyeva (2018, p. 11) | "the philosophy of teal organization" |
| B. Powichrowska, (2018, p. 101) | "continuation of the knowledge management concept" |
| J. Holwek (2018, p. 12) | "a utopian approach to business" |
| E. Bojar, M. Bojar (2020, p. 30) | "a team lacking not only a hierarchy but even once and for all defined roles" |
| P. Wiench (2020, p. 209) | "at their core are self-organized teams implementing self-management" |
| Z. Olesiński (2020, p. 265) | "the most advanced form of organization" |
| A. Rzepka (2020, p. 314) | "innovative type of organization" |
| A. Sabat (2020, p. 328) | "approach to teamwork" |
| R. Borowiecki, et al. (2021, p. 118) | "innovative type of self-managed organization" |
| A. Rzepka, R. Borowiecki, Z. Olesiński (2022, p. 265) | "evolutionary model of organizational culture" |

Source: own study.

It is important to note that J. Holwek (2018) presented a critical assessment of the teal organization, highlighting its ideological component. A sceptical attitude towards this concept is also shared by B. Kożusznik, M. Paliga and A. Pollak (2020), who accuse it of lacking a precise definition and confirmation of the assumptions.

According to E. Jędrych (2020, p. 81) the core of teal organizations is "an organizational culture based on trust". Many researchers (Laloux, 2015; Blikle, 2016; Ziębicki, 2017; Borowiecki, Olesiński, 2020), however, including the propagator of the mentioned idea, view its development in the context of organizational evolution.

The teal organization model is one of several approaches underpinned by the idea of self-management involving the expansion of employee autonomy. As an example of such solutions, we can also mention Agile and Holacracy (Ziębicki, 2017). Some features of teal organization, though, have been practiced in management for a long time by implementing elements of autonomy in organizations. A prime example of this is Thomas Baty's company, described by Z. Martyniak (2002).

## 3. Definition of autonomy in management

An analysis of English-language scientific literature allows us to state that the issue of autonomy is a multifaceted construct. There are various types of autonomy that we can encounter:

- organizational autonomy (Wynen, Verhoest, Rübeck, 2014; Arregle, et al., 2022),
- professional autonomy (RaVerty, Ball, Aiken, 2001; Nygren, Dobek-Ostrowska, Anikina, 2015),
- work autonomy (Breaugh, 1989),
- job autonomy (De Jonge, 1995; Saragih, 2011), should be defined and measured in a differentiated manner.

**Table 2.**
*Types of autonomy and ways of defining them*

| Type of autonomy | Author | Characteristics |
|---|---|---|
| Organizational autonomy | Wynen, Verhoest, Rübecksen (2014) | The level of decision-making authority the organization has Delegation or decentralization of decision-making authority |
| | Arregle et al. (2022) | Multi-level structure: the ability to form various configurations (e.g., department as a parent unit, the team as a sub-unit) |
| | Arregle et al. (2022) | It directly influences decision-making - adequate or inadequate scope of organizational autonomy may lead to successful or unsuccessful strategic decisions or actions for the organization |

Cont. table 2.

| | | |
|---|---|---|
| Professional autonomy | Pursio et al. (2021, p. 1573) | Independence in decision-making and the ability to utilize one's own competence |
| | Frostenson (2015) | 3 dimensions of professional autonomy: general autonomy, collegial autonomy, and individual autonomy |
| Job autonomy | Oldham, Hackman (2010); Hackman, Lawler (1971) | Autonomy as one of the work dimensions (variety, autonomy, required interaction, optional interaction, knowledge and skill required, responsibility) |
| | Oldham, Hackman (2010) | Determines the degree of freedom at work, independence, and influence on establishment of procedures used in the organization |
| | Sung, Yoon, Han (2022) | Variable measurement scales: Hackman and Oldham's Job Diagnostic Survey |
| | Muecke, Greenwald (2020) | 3 dimensions of job autonomy: decision-making, scheduling, and method autonomy |
| Work autonomy | Breaugh (1999) | 3 dimensions of work autonomy: work method autonomy, work scheduling autonomy, and criteria autonomy<br>Work autonomy is evaluated by Work Autonomy Scales |
| Autonomy in psychology | Ryan, Deci (2006) | A key need of every human being, affecting their well-being |

Source: own study.

J-L. Arregle et al. (2022) have reviewed 87 articles covering the topic of organizational autonomy, which scope granted to the individual is significantly different from individual autonomy. The definition of the first term covers a wider range. Table 2 analyses the concept of autonomy. J.T. Hackman and E.E. Lawler's definition (1971) emphasizes employees having influence on planning their work and co-deciding company procedures. It is worth highlighting that this issue was perceived as one of the dimensions of work (Hackman, Oldham, 1974; Hackman, Lawler, 1971; Oldham, Hackman, 2010). In contrast, Muecke and J.M. Greenwald (2020) prove that job autonomy has 3 dimensions: method autonomy, scheduling autonomy, and decision-making autonomy.

Research on this issue is being carried out both from a management perspective (Hackman, Lawler, 1971; Hackman, Oldham, 1974; de Jonge, 1995) and from a psychological perspective (Ryan, Deci, 2006).

Organizational autonomy is a broad concept, referring to the whole organization or its individual components within a formal structure (teams, departments, or companies). Job autonomy and work autonomy relate directly to the functioning of the individual at work and their individual's freedom to carry out tasks. Although job autonomy is described as one of the dimensions of work, it appears that both constructs are semantically similar.

## 4. The importance of autonomy for the organization

The beneficial outcome of reinforcing individual autonomy among employees was noticed by M.P. Follett. The researcher claimed that including workers in the decision-making process positively influences their commitment and welfare (Korombel, Grabiec, 2016).

This relationship is confirmed by empirical research. In one of them, M.S. Christian and J.E. Slaughter (Christian, Slaughter, 2007) have demonstrated that autonomy positively impacts the commitment of employees (Mρ =.42). A similar relationship was tested by the team consisting of M. Sung, D.-Y. Yoon, C.S.-H. Han (2022), additionally including the mediation role of psychological meaningfulness, which, together with job engagement, positively correlates with autonomy. Moreover, the learning culture moderated the relationship between job autonomy and commitment.

K. Pursio, et al. (2021) conducted another review of research on professional autonomy among a group of nurses. The findings of analysis proved that people demonstrating a wide range of autonomy took an active part in problem-solving. The formation of autonomy was fostered by a good nurse-doctor relationship and supportive management.

## 5. Autonomy as a feature of teal organizations

Autonomy in teal organizations manifests itself through the ability of employees to make decisions. As per A. J. Blikle (2016, p. 36), this is done according to the principle of partnership democracy; "those who know decide, and the rest trust them".

**Table 3.**
*Areas of autonomy in chosen teal organizations*

| Organization | Type of autonomy | |
|---|---|---|
| | **Organizational autonomy** | **Job/ work autonomy** |
| ESBZ | Despite formal hierarchal structure, so-called mini-schools are being set up (flexible teams of teachers who have broad decision-making powers, comprising three classes)<br><br>Two tutors per class | A sense of responsibility for their own education is fostered among pupils (Laloux, 2015)<br><br>Pupils learn independently (personal liability) and in teams (forming small teams), with a free pace of learning (the student decides what subjects they want to focus on) |
| FAVI | The organization is made up of autonomous teams (so-called mini-factories) of 15 to 35 employees<br><br>Flattening of organizational structures: closure of departments: human resources, planning, scheduling, engineering, production, and purchasing (appointment of operators in the teams) (Laloux, 2015) | The teams independently organize their work, create and implement procedures, recruit, plan, schedule, and decide about weekly and monthly meetings<br><br>A manufacturing worker may become the operator of various machines, coordinate purchases, and get involved in the recruitment process |
| Morning Star | "Individual contracting network" as a structural model implemented in organization (Laloux, 2015, p. 378)<br><br>Teams are called "business units" | Determination of the investment budget by the teams<br><br>Roles and liabilities are discussed during individual conversations between co-workers, closely cooperating with each other |

Cont. table 3.

| | | |
|---|---|---|
| RHD | The structure of parallel units, lack of middle management | Each programme is the responsibility of a self-management team of up to 50 people (responsible for strategy, recruitment, budgeting, and performance monitoring)<br><br>Specialists make the final decision, e.g., regarding the patient (possible consultation) (Laloux, 2015) |
| Sun Hydraulics | Lack of a planning and supply department<br><br>Lack of management to control complex projects<br><br>Flexible formation and dissolution of so-called implementation teams | Employees self-organize<br><br>The working time of employees on the production floor is not monitored (elimination of time cards) |

Source: own study.

On the other hand, F. Laloux (2015, pp. 123-124) defines the decision-making process in teal organization as an "consultative process"; its aim is to consult specific choices with other members of the team and seek expert's advice. The decision-maker has a wide range of powers, but the more complex the problem, the more people are involved in the process.

Another manifestation of organizational autonomy can be seen as the flattening of structures through the use of varied structural arrangements: "parallel units", "individualised contracting networks", "nested units" (Laloux, 2015, pp. 376-378; Hopej-Tomaszycka, Hopej, 2018, p. 219). Table 3 characterises areas of autonomy based on the analysis of five teal organizations. As stated by Laloux the most commonly used solutions are parallel units. As an example, the author uses Buurtzorg, FAVI and RHD (Laloux, 2015).

Referring to the representatives of teal organizations outlined below, autonomy should be understood broadly. It relates to organizational autonomy (characterised by flattening structures and reducing middle management), as well as employee's autonomy (in particular, reinforcing it by influencing the organization, execution of work, and including employees in decisions affecting both the team and the organization as a whole).

## 6. Research methods

In order to identify areas of autonomy in teal organizations through qualitative research, 13 companies, representing various industries (medical, welfare, consulting, IT, marketing, education, and financial) were analyzed. To obtain data, in-depth interviews were conducted with the management. Interviews with representatives were carried out online, using a Dictaphone in order to be transcribed later. The collected data was then subjected to qualitative content analysis, using the MAXQDA tool. Based on the literature review, a mixed coding of the collected data was applied.

An important criterion for the selection of institutions for this study was the features of the formal structure (flexibility, expanding the scope of employee autonomy) and implementing one of the concepts based on the idea of self-management: teal, holacratic, or agile organization. The following research question was formulated: What are the key areas of autonomy in teal organizations?

## 7. Autonomy in teal organizations – presentation of findings

Table 4 compares the extent of employee autonomy across institutions. Employee autonomy is mainly manifested through participation (employees are included in company affairs, encouraged to actively submit their ideas, and share their opinions) and in the area of their role in the organization (the ability to change their position).

**Table 4.**
*Analysis of areas of autonomy in selected organizations*

| Organizations | Organizational autonomy | | Job autonomy |
|---|---|---|---|
| | Structure | Decision-making | |
| Anna Jurewicz: Coaching Courses Management | Lack of permanent teams, agile appointment of "working teams" in line with the current goal of the organization (e.g., organization of conferences) | Participatory decision-making (asking for coaches' opinions), consulting | Engaging and motivating coaches in the process of co-creating the organization<br><br>The ability to submit their own ideas for the development of the organization |
| Brass Willow | Formation of so-called task forces inspired by holacratic circles, which are flexible and created for the purpose of working with clients (holacratic approach not formally introduced, constitution not adopted)<br><br>Additional creation of second and third circles (teams created by part-time workers) | Decisions are made by an expert in the field<br><br>Establishment of a consultative process (stakeholder consultation) | Influence on employee involvement in company-wide initiatives<br><br>Opportunity to object to or question team's choices<br><br>Acting as a facilitator in the decision-making process<br><br>Decision-making autonomy over individual employee competencies (within their role in the organization)<br><br>Ability to choose form of work (remote, onsite, hybrid) |

Cont. table 4.

| | | | |
|---|---|---|---|
| Buurtzorg | Small autonomous teams of health visitors, self-organizing their work (10,000 in total, working with a group of 21 independent supporting coaches) | Collective decision-making in terms of planning their own work: meetings, scheduling, laying out the access routes, recruitment of a new person to the team (responsibility of delegating teams)<br><br>Consultation of the patient's situation in more difficult cases with a more specialized worker | Autonomy in terms of professional role (deciding on one's own development, length of visits to the patient, strengthening one's independence, working style, personal development) (Chyla, 2022) |
| Fundacja Transgresja [*Foundation Transgression*] | Lack of permanent teams, establishment of flexible project teams<br><br>Operation of the Deafblind Club (permanent activities) | Decision-making through consultation (in the case of significant financial decisions) | Decision-making autonomy of each employee with regards to their role and personal development within the organization (ability to propose and realize projects according to one's own aspirations and interests) |
| HighSolution | Permanent teams and flexible circles within the organization | Delegating decisions down to teams<br>Decisions regarding the circles are made democratically (or meritocratically by the leader, if necessary)<br><br>Complex decisions that go beyond the circle are taken by the circle leaders through consultation | The employee decides on a range of goals to achieve by the next meeting<br><br>Opportunity to participate in development processes (access to seminars, conferences, and coaching processes) |
| Bees&Honey | Structure of self-managing circles (the existence of a main "mother circle")<br><br>Holacratic inspiration without a formally adopted holacracy constitution<br><br>Using the beehive metaphor in organizational reality (bees have different roles)<br><br>Using the Holaspirit tool | Striving for consensus (unanimity) through dialogue, and consultation<br><br>Decision-making autonomy of the circles | Most often, the decision is made by people who have expertise in the field (leaders with professional experience); sometimes, a team approach is required |

Cont. table 4.

| | | | |
|---|---|---|---|
| Henryk Sienkiewicz's High School nr 1 in Kędzierzyn-Koźle, Poland | Transformation of the school into an agile organization<br><br>Creating flexible SCRUM Teams<br><br>Setting up interdisciplinary teams of teachers | Style integrating different forms: participative within SCRUM Teams, directive (breaking down resistance)<br><br>The form of decision-making is partly due to the peculiarities of the functioning of an educational institution (legal regulations) | The impact of teachers on teaching (use of educational methods), fostering a sense of empowerment among pupils<br><br>Decisions made by teams to engage in given activities |
| Lunar Logic | Lack of formal structure (flexible teams created during realization of projects)<br><br>Taking up roles instead of positions | Consultative process (consulting decisions with other people involved in the matter and with expertise)<br><br>Transparency of decisions in the organization | "Every individual can make any decision in a structured manner."[2] |
| Mentax | Functioning on the basis of circles (the core element of the organization is a role – smallest part of the structure – and the circle)<br><br>Competence structure (competence in the organization, not formal authority, becomes important)<br><br>Using the Holaspirit tool, supporting the management process | Various decision-making modes in the organization, depending on the rank of the decision<br><br>Principle of seeking consensus through advice, consultation, and the integration of objections | Any person may decide to resign from a role (by informing the competence or circle monitor) |
| PerfectCircle | 4-person core team, holacratic circle structure (core general circle, without formally adopted holacracy constitution)<br><br>Ability to change roles flexibly<br><br>Using the Holaspirit in the organization | Dynamic self-management<br><br>Participation (in the core circle and sub-circles)<br><br>Team decision-making on hiring a new person | Decision-making autonomy within the role (possibility of support, consultation)<br><br>Participation in finances (profit distribution at the end of each year) |

[2] Statement by Paweł Brodziński during in-depth interview in the Lunar Logic company.

Cont. table 4.

| | | | |
|---|---|---|---|
| Sanofi Pasteur[3] | Departments: marketing, sales, medical (including department of registration), logistics, public affairs, financial<br><br>Establishment of a 7-person working group for the purpose of transformation towards teal organization | Decision-making style evolved from hierarchal towards an expansion of autonomy (shifting decision-making downwards) | Extension of employees' decision-making autonomy related to their role (e.g., sales representatives co-determining the size of a target) |
| SoftwareMill | Structure of guilds (technical and non-technical) and smaller elements in the structure – sub-guilds<br><br>Guilds were defined as company associations implementing a certain range of activities | Seeking optimal solutions by involving in the consultation process those involved in the problem under consideration<br><br>Transparency of decisions in the organization | Involving co-workers in organizational matters (creating space for action, possibility to propose one's own ideas with justification), encouraging them to express their opinion on a given topic, strengthening the sense of influence (e.g., influence in the development of a new promotion system, possibility to propose a change during a company meeting) |
| Turkusowe Śniadania [*Teal Breakfasts*] | Structure of holacratic circles (each city in which the foundation is active has set up a separate team with a local mentor)<br><br>Lack of a formal holacracy constitution | Autonomous decision-making in support of the ideas of the Foundation | Every person may take the initiative to carry out a project and has to take responsibility for it<br><br>Ability to join an initiative in a project carried out by the Foundation (creating flexible teams) |

Source: own study.

Four of the interviewed organizations refer to holacratic conception in the area of structural solutions, where circles are the equivalent of teams (none of the above had formally adopted the constitution). Those teams (variously referred to as circles, guilds, working groups, task forces, or SCRUM teams) are characterized by their flexibility. The dominant form of decision-making in most organizations is consultative process (realized through consultation with a wider group, including employees, the ability to object, and the obligation to consult an expert group).

## 8. Results discussion

Having analyzed the issue of autonomy in depth, the question arises as to what the appropriate extent of autonomy is and whether it translates into highly effective teams and

[3] The described change in the organization towards teal relates to the period 2013-2018 in the Polish division of Sanofi Pasteur, during the presidency of Mr Maciej Trybulec.

individual involvement. It is therefore a question of the limits of autonomy in an organization. Will its overly broad implementation among employees cause role overload or contribute to individual burnout?

In one experiment, a group of researchers comprising: V. Boss et al. (2021) proved that the best results were obtained by a team with partial rather than full autonomy. This issue should be the subject of further scientific investigation. Especially as there are publications showing the negative effects of employee autonomy in the context of flexible forms of work (Kubicek, Paškvan, Bunner, 2017). It is also worth examining the factors that support the development of autonomy in an organization. According to the author of this article, one of these is a high level of employee competence and leadership.

## 9. Conclusions

An exploration of the areas of autonomy showed that the solutions adopted by the interviewed organizations cover a wide range of organizational autonomy and job autonomy. Examples, related to job autonomy are varied – depending on the organization and the industry – and include practices in different areas (recruitment, personal development, role, scheduling, participation in selected projects). Organizational autonomy should be equated with the delegation of responsibility to employees, the use of flexible structural solutions (functioning of autonomous teams), and decision-making autonomy (consultative process, consultation of the adopted solutions).

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# COVID-19 AND CORPORATE SOCIAL RESPONSIBILITY: COMPARATIVE STUDY OF SELECTED PSU AND NON-PSU COMPANIES

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**Introduction/background:** The relationship between society and business has been evolving with time, the concept of social responsibility formally promotes giving back to the stakeholders and responding to the needs of society. Indian Corporate Social Responsibility (CSR) dates back to ancient times but currently, CSR is mandatory for companies with 5crore net profit or 500cr net worth or 1000cr turnover, the companies should spend at least 2 percent of net profit on "Schedule VII" of the Company Act, 2013. The schedule is aligned with the sustainable development goals which vary across different sectors which enables the company to contribute to society constructively along with the brand imaging which in turn helps gain profits from the publicity.
**Aim of the paper:** To understand the impact of Indian award winning companies at the time of health emergency posed by Covid-19. The present paper tries to analyze the spending pattern of selected five PSUs and five non- PSU companies. Study is pertaining to the period before Covid-19 and during covid-19 to analyze the changes in sectoral CSR expenditure.
**Materials and methods:** Secondary Data has been collected from the CSR Portal by Ministry of Corporate Affairs, Government of India.
**Results and conclusions:** Study found that both type of companies has increased CSR expenditure in health sector, rural development and other central government funds which includes Prime Minister's Citizen Assistance and Relief in Emergency Situations (PM-CARES). Government owned companies have shifted CSR expenditure significantly from the sectors like vocational skills, education and environment sustainability. However, Non-PSU companies has shifted CSR expenditure from the livelihood enhancement sector.
**Keywords:** Corporate Social Responsibility, Covid-19, sectoral expedniture, PSU and NON-PSU companies.

## Introduction

The relationship between business and society has been evolving with time; the idea of profit maximization has been the core motive of business. There is argument on whether the business should pursue profit maximization alone or take into consideration of stakeholders' interest, which promotes the well-being of the consumer, supplier, and society as a whole. The concept of Corporate Social Responsibility (CSR) emerged in Developed Nations and spread across the world. Howard R. Bowen was the first person to discuss firms' responsibility and defined CSR as "The obligations of businessmen to pursue those policies, to make those decisions, or to follow those lines of action which are desirable in terms of the objectives and values of our society" (Bowen, 1953)**.** The firm's main objective is profit maximization and the firm should concentrate on shareholders' interest alone (Friedman, 1970) but other researchers believe the firm can go beyond the motive of profit maximization and has social responsibilities which go beyond the requirements of the law (Davis, 1973)**.** Traces of CSR dates back to ancient Indian tradition of giving back to society. Business in India contributed to society in many ways, firms like Tata, Birla and Bajaj have contributed to society. Before mandating CSR in India many firms used to spend some part of profit for the well being of the society. Ministry of Corporate Affairs has promoted the guidelines for companies to formulate CSR policy (CSR Voluntary Guidelines, 2009) and enhanced these policies further and added supplementary guidelines for the companies endorsed companies to report CSR activities (National Voluntary Guidelines, 2011). Security Exchange Board of India (SEBI) mandated top 100 listed companies to publish business responsibility reports as a part of annual reports of the companies (SEBI Circular, 2012). India finally adopted mandatory CSR with the Companies Act, 2013 which mandated that companies with a net profit of more than 5 crore or 1000 crore turnover or 500 crores net worth spend at least 2% of the net profit on the Schedule VII items of the act which includes various sector based on the Sustainable Development Goals. The outbreak of Covid-19 has adversely affected the day-to-day activities of human beings, the businesses struggled to survive and adapt to the new situations after March 2020 with a lockdown being imposed which forced people to stay at home without any income (especially the daily wage workers) hampering the economy. In difficulties, the government launched many schemes to smoothen the negative effects of the pandemic, along with the government schemes, the companies also participated in helping out the people directly and also by contributing to the various funds set up by Central and State Governments. Specifically, following changes has been introduced by the Government of India for supporting the health crisis. Ministry of Corporate Affairs (MCA) published General Circular[1] citing all the expenditure related covid-19 can be considered as CSR expenditure. Expenditure on preventive measures which falls under health and sanitization also considered as CSR expenditure. Companies spending

[1] General Circular No. 10/2020 by Ministry of Corporate Affairs.

excessive CSR funds can be considered as CSR expenditure of subsequent years[2]. Even tax benefits are announced for the companies which donated for covid-19 related activities in form of tax rebates[2]. Studies reordered the corporate responses to the health emergencies. Companies contributed by distribution of food packets, covid resting kits, helping migrant laborer's and transferring funds to the PM-CARES (Ramya, Baral, 2021). Specifically, Infosys Ltd. (550 crores), ITC Ltd. (150 crores) along with the companies like Hindustan Unilever Ltd. contributed State Bank of India and Reliance (Babu et al., 2020) for tackling the health emergency.

## Corporate Social Responsibility in India

*CSR and Development*


After the amendment in the Company Act, companies are compelled to spend 2% of the average net profit which fulfills criteria of 135(1). Since the amendment thousands of companies spent thousands of crores (Appendix 1) on various CSR activities which falls under the Schedule VII of the Act. Mainly, Schedule VII of the Act directs companies to spend on sectors like education, health, poverty, rural development, etc.

This section of the paper mainly observes trend changes in CSR expenditure concerning sectors like health, sanitization, PMNRF, and "other central govt. funds". CSR expenditure has been done on the following sectors for fighting the health challenges posed by pandemic. During Covid-19 many companies had diverted CSR funds from non-health sectors to health-related sectors due to the challenges of Covid-19. In the year 2014-15, 4684 companies spent 10066 crores (figure 1) with average CSR expenditure (ACE) of 2.15 crores which gradually declined. Whereas absolute number of companies and expenditure gradually increased over the years.

[2] General Circular No. 14 /2021 by Ministry of Corporate Affairs (p. 6).

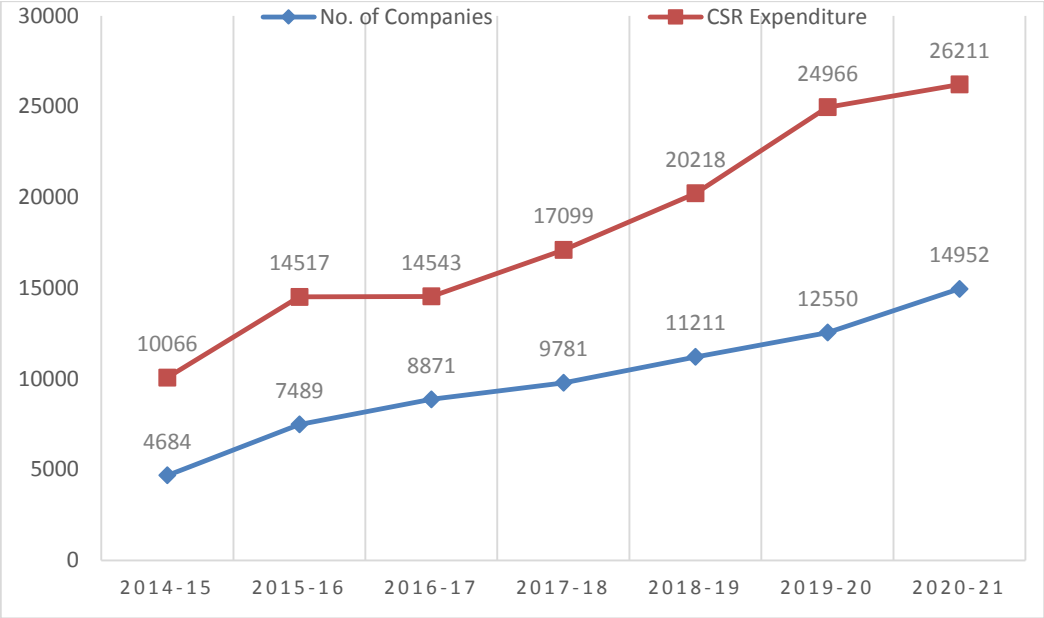


**Figure 1.** Overview of India's CSR Expenditure (In Crore).

Source: www.csr.gov.in.

Sector-wise macro changes shows education sector received the highest CSR expenditure from the companies for the first six years after compulsion. In the year 2020-21, health superseded education sector (Appendix 1). Sectors like healthcare, Prime Ministers National Relief Fund (PMNRF) and Other Government Funds are summarized for macro changes. These sectors received highest share (%) in 2020-21 as compared to the previous year. Specifically, health sector received 8% (2420 crore) additional funds (Appendix 1) with 14.81% increase in Average CSR Expenditure (ACE) (Table 1). Whereas, ACE of PMNRF and Other Central Govt. Funds witnessed increase in ACE of 55.17% and 26.88% respectively.

**Table 1.**

*Sectoral CSR Expenditure and Number of Companies (In Crore)*

| Sectors | Health | | | PMNRF | | | Other Central Govt. Funds | | |
|---|---|---|---|---|---|---|---|---|---|
| Year | CSR | Companies | ACE | CSR | Companies | ACE | CSR | Companies | ACE |
| 2014-15 | 1848 | 1914 | 0.97 | 228 | 575 | 0.40 | 277 | 239 | 1.16 |
| 2015-16 | 2569 | 3557 | 0.72 | 218 | 781 | 0.28 | 334 | 546 | 0.61 |
| 2016-17 | 2504 | 4163 | 0.60 | 159 | 696 | 0.23 | 420 | 481 | 0.87 |
| 2017-18 | 2777 | 4548 | 0.61 | 200 | 754 | 0.27 | 293 | 488 | 0.60 |
| 2018-19 | 3617 | 4657 | 0.78 | 322 | 985 | 0.33 | 731 | 738 | 0.99 |
| 2019-20 | 4905 | 6071 | 0.81 | 798 | 1384 | 0.58 | 932 | 1005 | 0.93 |
| 2020-21 | 7326 | 7882 | 0.93 | 1698 | 1882 | 0.90 | 1618 | 1370 | 1.18 |

CSR = CSR Expenditure.

The macro picture of the CSR expenditure scenario shows that the companies have made an effort to cope with the challenges put forth by the health emergency of Covid-19 in the year 2020-21 (Ramya, Baral, 2021; Babu et al., 2020; Varun, Agarwal, 2021).

## Methodology

The study compares selected private and government-owned companies' sectoral expenditure before and during Covid-19, which shows the sectoral changes of CSR expenditure due to the emergency created by the pandemic. The study is based on secondary data from the CSR Portal (csr.gov.in), analyzing the before and during effects of Covid-19 on the CSR sectoral expenditure of selected companies. The sampling consists of five public sector undertaking (PSU) companies and five non-PSU companies; the sampling is based on Award-winning and honorary mentions[3] from the CSR. For the study following companies have been selected based on CSR award-winning companies and honorary mentions of the year 2019 by the Ministry of Corporate Affairs because of the rationale of award-winning companies are tend to be committed companies.

| PSU | NON-PSU |
|---|---|
| Central Coalfields Limited (CCL) | HDFC Bank Limited (HDFCBL) |
| Indian Oil Corporation Limited (IOCL) | IndusInd Bank Limited (IBL) |
| Mahnadi Coalfields Limited (MCL) | ITC Limited (ITCL) |
| Power Finance Corporation Limited (PFCL) | JSW Steel Limited (JSWSL) |
| Hindustan Petroleum Corporation Limited (HPCL) | Tata Sponge Iron Limited (TSIL) |

**Non-PSU Pooled CSR Expenditure:** Study considered five award-winning companies from non-PSU to analyze the sectoral changes due to the health emergencies. All five companies' CSR expenditure on various sectors is pooled and presented in Table 2. This also shows the difference in the CSR expenditure from 2020-21 to 2019-20 to comprehend changes in CSR expenditure. Negative values show a decrease in the sectoral expenditure in the year 2020-21 from 2019-20. Positive values show the flow of additional CSR funds and values on and around zero show minimal sectoral changes.

**Table 2.**
*Pooled CSR Expenditure of Five Non-PSU Companies (In Crore)*

| Sectors | CSR Expenditure 2019-20 (A) | CSR Expenditure 2020-21(B) | Changes in Expenditure (C) |
|---|---|---|---|
| Other Central Government Funds | 0.00% | 13.49% | 13.49% |
| Health Care | 12.96% | 20.13% | 7.17% |
| Rural Development Projects | 35.04% | 38.37% | 3.33% |
| Vocational Skills | 3.04% | 5.46% | 2.42% |
| Sanitation | 0.08% | 1.80% | 1.72% |
| Défense Related | 0.74% | 2.04% | 1.30% |
| Conservation Of Natural Resources | 0.00% | 0.35% | 0.35% |
| Gender Equality | 0.00% | 0.02% | 0.02% |
| Special Education | 0.00% | 0.02% | 0.02% |
| Safe Drinking Water | 0.01% | 0.00% | -0.01% |
| Training To Promote Sports | 1.45% | 1.39% | -0.05% |
| Art And Culture | 0.47% | 0.35% | -0.12% |

[3] CSR Awards by Ministry of Corporate Affairs.

Cont. table 2.

| | | | |
|---|---|---|---|
| Swachh Bharat Kosh | 0.20% | 0.00% | -0.20% |
| Women Empowerment | 1.65% | 0.39% | -1.26% |
| Socio-Economic Inequalities | 1.45% | 0.00% | -1.45% |
| Environmental Sustainability | 7.26% | 4.99% | -2.27% |
| Poverty, Eradicating Hunger, Malnutrition | 4.47% | 1.90% | -2.58% |
| Prime Minister's National Relief Fund (PMNRF) | 2.98% | 0.00% | -2.98% |
| Education | 12.12% | 8.67% | -3.45% |
| Agro-Forestry | 4.11% | 0.00% | -4.11% |
| Livelihood Enhancement Projects | 11.96% | 0.62% | -11.34% |
| **Grand Total** | **100.00%** | **100.00%** | 0.00% |

Other Central Government Funds top the list, selected non-PSU companies spent additional 13.49% CSR expenditure by transferring to "Other Central Government Funds" (Includes PM-CARES) in the year 2020-21 (154.31 Crore) as compared to the year 2019-20 (0%) due to health emergency posed by the pandemic (Covid-19). The government used these funds to tackle the health emergency in the nation by improving the health infrastructure and improved bed numbers to cater to the need of covid-19 health emergency. Among five companies none of the companies transferred the fund to the "Other Central Government Funds" in the year 2019-20 and in the year 2020-21 except ITC limited. ITC company transferred the CSR funds amounting to 154.31 Crore, which is 46% of the total CSR funds of that company. Second highest change is noticed in the health care sector: five non-PSU companies spent 230.23 Crore in 2020-21 as compared to 144.23 crore in 2019-20 with 7% increase. HDFC Bank Limited incurred a CSR expenditure of 12 lakhs in 2019-20 and drastically increased it to 112.86 Crore (2020-21). In which 110 crore spent on covid-19 relief[4].JSW Steel Limited and Tata Sponge Iron Limited made no CSR expenditure in the year 2019-20 and spent 41.62% and 34.48% of the total CSR funds respectively in 2020-21. IndusInd Bank Ltd increased 12% of the funds with respect to total of respective year. ITC Limited (-21.16%) decreased the share of CSR expenditure to the healthcare sector by shifting CSR expenditure to other sectors. Lastly, the Rural Development sector received a huge increased share in CSR expenditure despite health emergencies. HDFC Bank Limited spent more than 60% of the CSR funds on Rural Development Projects in both the year with respect to its total CSR funds and increased by 16.22 crore during covid-19 times. Mainly due to the rural sector banking rules setup by the Reserve Bank of India (Varun, Agarwal, 2021) HDFC bank used CSR funds as a marketing tool (Varun, Agarwal, 2021) ITC Limited also had spent 36.34 Crore in 2020-21 which was zero in the previous year. ITC Ltd. recognized rural development as one of the key sector and development of ITC units[5]. Sectors like vocational skills, sanitation, defense related CSR expenditure witnessed a meagre increase in the share of CSR expenditure but the changes were ranging from 0-2%. Major sectors' share of CSR funds deteriorated, mainly in livelihood enhancement projects (-11.34%), agro-forestry (-4.11%) and education (-3.45%). The trade-off

[4] HDFC Annual Report 2020-21.
[5] Website: CSR Policy of ITC.

has taken place in the sectoral changes, to increase the CSR expenditure in one sector the companies had declined spending for other non-health sectors. Which helped cope with the national health emergency.

**PSU Pooled CSR Expenditure:** Five selected PSU companies have spent more on the sectors like Other Central Govt. Fund, health care, rural development projects, and other central govt. fund in 2020-21 as compared to the year 2019-20 by compensating from sectors like vocational skills, education, environmental and poverty related sectors.

**Table 3.**
*Pooled CSR Expenditure of Five PSU Companies*

| Sectors | CSR Expenditure 2019-20 (A) | CSR Expenditure 2020-21 (B) | Changes in Expenditure (C) |
|---|---|---|---|
| Other Central Government Funds | 0.07% | 34.52% | 34.45% |
| Rural Development Projects | 5.71% | 20.57% | 14.86% |
| Health Care | 10.60% | 25.45% | 14.85% |
| Art And Culture | 0.65% | 1.14% | 0.50% |
| Women Empowerment | 0.00% | 0.32% | 0.32% |
| Livelihood Enhancement Projects | 0.01% | 0.07% | 0.06% |
| Gender Equality | 0.06% | 0.00% | -0.06% |
| Armed Forces, Veterans, War Widows/Dependants | 0.09% | 0.00% | -0.09% |
| Safe Drinking Water | 1.20% | 0.87% | -0.33% |
| Special Education | 0.48% | 0.03% | -0.46% |
| Socio-Economic Inequalities | 0.63% | 0.00% | -0.63% |
| Training To Promote Sports | 1.15% | 0.38% | -0.77% |
| Sanitation | 9.00% | 6.71% | -2.29% |
| Prime Minister's National Relief Fund | 3.53% | 0.00% | -3.53% |
| Poverty, Eradicating Hunger, Malnutrition | 5.03% | 0.00% | -5.03% |
| Conservation Of Natural Resources | 9.41% | 0.00% | -9.41% |
| Environmental Sustainability | 10.64% | 0.00% | -10.64% |
| Education | 20.84% | 6.69% | -14.16% |
| Vocational Skills | 20.90% | 3.25% | -17.65% |
| **Grand Total** | **1032.27** | **999.66** | |

Indian Oil Corporation Limited (IOCL) contributed 225 Crores (50%) to PM-CARES in 2020-21 as compared to the zero CSR fund transfer to the 'Other Central Govt. Funds' sector in the previous year. Along with the HPCL spent 120 crores during covid-19. The healthcare sector has witnessed 14.85% changes in CSR expenditure from the year 2019-20. Mainly because of the Power Finance Corporation Limited which spent 187.84 Crores[6] which shifted 100% of its CSR funds from conservation of natural resources. HPCL shifted 13.73% (25.03 Crores) of the CSR funds as compared to the previous year's share of 6.11% (8.66 Crores). IOCL decreased its share of CSR expenditure on health care to 13% (57.93 Crore) from 16.20%. Rural Development Projects sector was the second highest gainer. Mahanadi Coalfields shifted 100% of the CSR funds to the Rural Development project from the sectors like Education (48%) and Poverty, Eradicating Hunger, and Malnutrition (31%).

[6] Power Finance Corporation Limited, Annual Report 2020-21.

Pooled CSR expenditure of selected PSU companies exhibited sectors like poverty, environment, vocational skills and education lost around 5-12% of share in CSR fund due to the shift in the CSR expenditure patterns.

## PSU vs. Non-PSU

Award-winning PSU and non-PSU companies have retorted to the challenge posed by the Covid-19 pandemic. Irrespective of the nature of ownership companies diverted CSR funds from non-health sectors to health-related sectors.

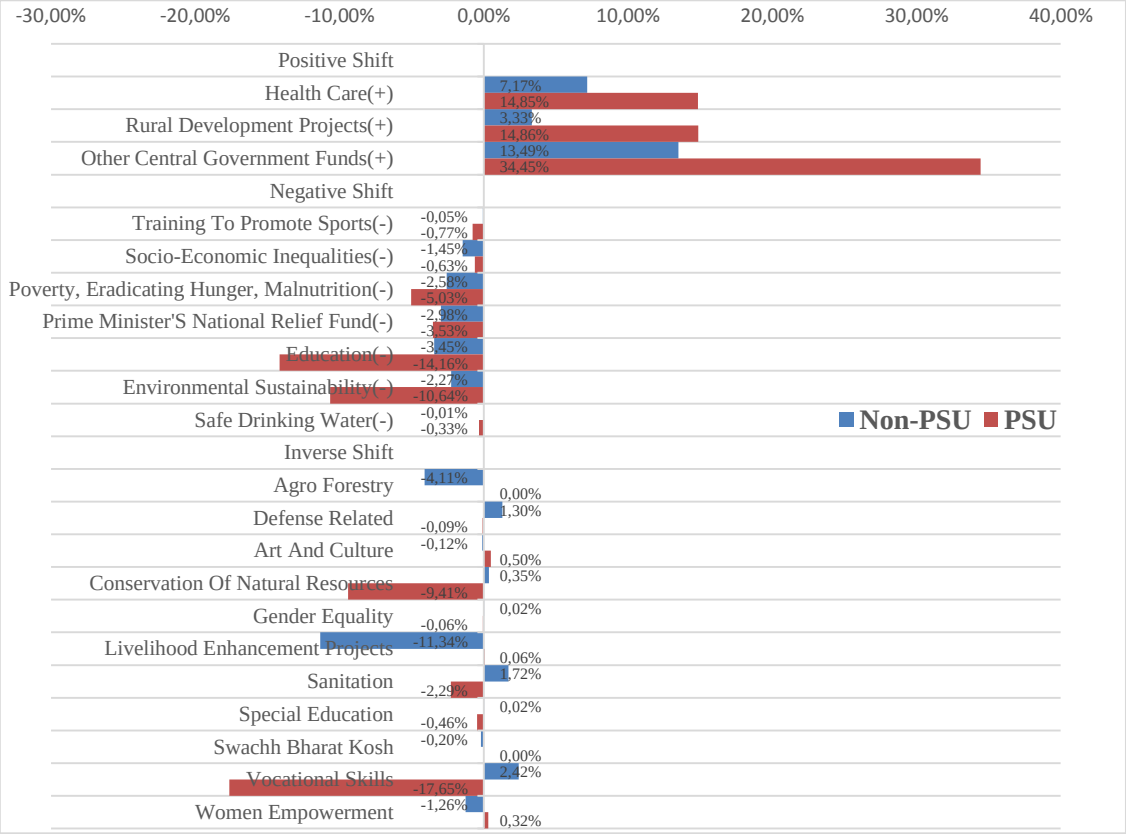


**Figure 2.** Sectoral Changes in PSU and NON-PSU Companies (%).

Sectoral changes have been identified with the variable ‘Changes in Expenditure’ (Table 2-3). Further categorized into positive, negative and inverse shifts based on the direction of the CSR expenditure change. CSR funds are spent in a such way that CSR funds are utilized by the stakeholder near to firms to enhance the relationship with people for betterment of the companies. Companies belonging to the PSU have witnessed significant shift of the CSR funds as compared to the non-PSU companies. The positive shift shows the direction of both PSU**(P)** and non-PSU**(NP)** is the same in sectors like health care (P>NP), rural development projects (P>NP), and Other Central Govt. Fund (P>NP). Negative shifted sectors show that both PSU and non-PSU companies have compensated the health-related CSR expenditure with other

sectors' CSR funds. PSU has reduced education, environmental, vocational skills related CSR funds for compensation. Whereas Non-PSU companies traded of CSR funds of livelihood enhancement projects along with other sectors. Inverse Shift category shows a divergence between the PSU and Non-PSU companies' sectoral CSR expenditure. PSU companies shifted the CSR funds to the government funds whereas the non-PSU companies targeted on rural development programs and providing support for the health care mechanism at various capacity. This shows that companies have the preferences for the sectoral CSR expenditure and companies has spent CSR according to the CSR policies of the respective companies. CSR policy plays a vital role for determining the flow of CSR funds. Companies determining factors for CSR spendings are political power, location of the firm (Pareek et al., 2020). PSU are controlled by the government hence the PSU sectoral expenditure are aligned with the government's policies (Pareek et al., 2020) selected companies also has transferred CSR funds to governmental funds.

## Conclusion

Corporate Social Responsibility establishes the healthy relationship of the firms with society. Companies spend on various activities to help society with the development process. Before the mandatory era of CSR in India, many major companies like Tata, Birla, Bajaj helped in nation building process before the independence as well as after the independence. After globalization of the economy economic growth bloomed. Companies also use CSR as tool to maximizing profit with brand imaging and boosted sales. Post mandatory CSR scenario shows increase in CSR expenditure by companies with compulsion which promoted companies to spend around one lakh twenty-seven thousand crores over the period of seven years. Companies with government ownership has an important role in maximizing the welfare of the society. However, non-PSU companies ought to follow the rules and regulation set by the authorities along with the core motive of profit maximization. Every company has own CSR policy which focuses on certain areas, non-governmental companies' pattern of CSR expenditure is rigid. Selected companies changed the composition of the CSR expenditure to health-related expenditure to fight against the health emergency by compensating from the sectors like livelihood enhancement project, agro-forestry and education. Whereas government owned companies' funds are diverted towards the government managed fund like PM-CARES, rural Development and health Care by trading-off from vocational skill projects and environmental projects. Both types of companies have managed to fund rural development projects even with Covid-19 pandemic. Companies has successfully managed to tackle and divert the CSR funds to tackle the emergencies of the nation.

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# Appendix

**Appendix 1.**
*Indian Companies' Sectoral CSR Expenditure*

| Development Sector | Amount Spent FY 2014-15 (INR Cr.) | Amount Spent FY 2015-16 (INR Cr.) | Amount Spent FY 2016-17 (INR Cr.) | Amount Spent FY 2017-18 (INR Cr.) | Amount Spent FY 2018-19 (INR Cr.) | Amount Spent FY 2019-20 (INR Cr.) | Amount Spent FY 2020-21 (INR Cr.) |
|---|---|---|---|---|---|---|---|
| Conservation Of Natural Resources | 44.6 | 49.85 | 119.09 | 228.14 | 173.55 | 160.6 | 92 |
| Education | 2589.42 | 4057.45 | 4534.16 | 5763.45 | 6111.66 | 7179.51 | 6693.25 |
| Environmental Sustainability | 773.99 | 796.69 | 1082.63 | 1301.96 | 1368.27 | 1470.53 | 1030.16 |
| Livelihood Enhancement Projects | 280.17 | 393.38 | 518.49 | 832.4 | 907.98 | 1077.72 | 938.91 |
| Art And Culture | 117.37 | 119.17 | 306.13 | 395.22 | 225.94 | 933.57 | 493.13 |
| Prime Minister's National Relief Fund | 228.18 | 218.04 | 158.8 | 200.42 | 322.19 | 798.43 | 1698.38 |
| Rural Development Projects | 1059.35 | 1376.16 | 1572.87 | 1724.07 | 2434.17 | 2301.02 | 1850.71 |
| Safe Drinking Water | 103.95 | 180.16 | 160.12 | 220.87 | 228.23 | 253.4 | 203.13 |
| Slum Area Development | 101.14 | 14.1 | 51.49 | 39.16 | 51.06 | 42.94 | 88.95 |
| Socio-Economic Inequalities | 39.04 | 77.97 | 148.01 | 155.95 | 167.92 | 214.88 | 149.81 |
| Swachh Bharat Kosh | 113.86 | 325.52 | 184.06 | 272.07 | 95.5 | 53.47 | 161.35 |
| Training To Promote Sports | 57.62 | 140.12 | 197 | 285.41 | 310.16 | 304 | 243.39 |
| Women Empowerment | 72.87 | 122.79 | 163.46 | 251.37 | 236.54 | 259.57 | 206 |
| Defence Related | 4.76 | 11.14 | 37.86 | 29.09 | 90.18 | 62.06 | 84.05 |
| Clean Ganga Fund | 5.47 | 32.82 | 24.37 | 33.96 | 8.11 | 6.63 | 13.39 |
| Gender Equality | 55.21 | 73.85 | 72.6 | 24.01 | 51.86 | 82.93 | 43.83 |
| Health Care | 1847.74 | 2569.43 | 2503.91 | 2776.95 | 3617.15 | 4905.72 | 7325.83 |
| NEC/ Not Mentioned | 1338.4 | 1051.16 | 437.43 | 15.2 | 87.61 | 502.79 | 203.14 |
| Other Central Government Funds | 277.1 | 334.35 | 419.99 | 292.73 | 731.06 | 932.16 | 1618.17 |
| Poverty, Eradicating Hunger, Malnutrition | 274.7 | 1252.08 | 614.65 | 811.2 | 1195.78 | 1159.71 | 1407.58 |
| Animal Welfare | 17.29 | 66.67 | 78.71 | 63.52 | 98.33 | 106.12 | 193.55 |
| Sanitation | 299.54 | 631.8 | 433.98 | 460.68 | 506.66 | 521.72 | 338.97 |
| Senior Citizens Welfare | 8.94 | 21.87 | 27.75 | 40.1 | 46.52 | 52.33 | 56.47 |
| Setting Up Homes and Hostels for Women | 8.74 | 29.28 | 62.22 | 70.58 | 57.01 | 48.5 | 44.52 |
| Setting Up Orphanage | 5.12 | 16.9 | 16.8 | 39.87 | 12.89 | 36.5 | 21.88 |
| Agro-Forestry | 18.12 | 57.85 | 45.48 | 66.79 | 64.75 | 67.38 | 20.9 |
| Special Education | 41.43 | 125.84 | 165.33 | 140.01 | 186.13 | 196.88 | 209.24 |
| Technology Incubators | 4.74 | 26.34 | 25.4 | 16.94 | 32.1 | 53.5 | 62.62 |
| Vocational Skills | 277.07 | 344.4 | 379.7 | 546.46 | 798.36 | 1181.23 | 717.65 |
| Grand Total | 10065.93 | 14517.18 | 14542.49 | 17098.58 | 20217.67 | 24965.8 | 26210.96 |

Source: www.csr.gov.in.

**Appendix 2.**
*NON-PSU Pooled CSR Expenditure (In Crore)*

| Sectors | 2019-20(A) | 2020-21(B) | Changes in Expenditure(B-A) |
|---|---|---|---|
| Other Central Government Funds | | 154.3 | 154.31 |
| Health Care | 144.2 | 230.2 | 86.00 |
| Rural Development Projects | 389.9 | 438.9 | 48.92 |
| Vocational Skills | 33.8 | 62.4 | 28.60 |
| Sanitation | 0.9 | 20.6 | 19.71 |
| Defence Related | 8.2 | 23.3 | 15.10 |
| Conservation Of Natural Resources | | 4.0 | 4.00 |
| Gender Equality | | 0.3 | 0.25 |
| Special Education | | 0.3 | 0.25 |
| Safe Drinking Water | 0.1 | | -0.13 |
| Training To Promote Sports | 16.1 | 15.9 | -0.17 |
| Art And Culture | 5.2 | 4.1 | -1.18 |
| Swachh Bharat Kosh | 2.3 | | -2.27 |
| Women Empowerment | 18.4 | 4.5 | -13.92 |
| Socio-Economic Inequalities | 16.2 | | -16.19 |
| Environmental Sustainability | 80.8 | 57.1 | -23.72 |
| Poverty, Eradicating Hunger, Malnutrition | 49.8 | 21.7 | -28.08 |
| Prime Minister's National Relief Fund (PMNRF) | 33.1 | | -33.14 |
| Education | 134.9 | 99.2 | -35.68 |
| Agro-Forestry | 45.8 | | -45.77 |
| Livelihood Enhancement Projects | 133.1 | 7.1 | -126.01 |
| **Grand Total** | **1112.9** | **1143.8** | |

Source: www.csr.gov.in.

**Appendix 3.**
*PSU Pooled CSR Expenditure (In Crore)*

| Sectors | 2019-20(A) | 2020-21(B) | Changes in Expenditure(B-A) |
|---|---|---|---|
| Other Central Government Funds | 0.72 | 345.1 | 344.37 |
| Rural Development Projects | 58.90 | 205.64 | 146.73 |
| Health Care | 109.43 | 254.43 | 145 |
| Art And Culture | 6.69 | 11.44 | 4.74 |
| Women Empowerment | | 3.19 | 3.19 |
| Livelihood Enhancement Projects | 0.05 | 0.69 | 0.63 |
| Gender Equality | 0.66 | | -0.66 |
| Defence Related | 0.9 | | -0.9 |
| Safe Drinking Water | 12.39 | 8.69 | -3.7 |
| Special Education | 5 | 0.27 | -4.73 |
| Socio-Economic Inequalities | 6.5 | | -6.5 |
| Training To Promote Sports | 11.83 | 3.77 | -8.06 |
| Sanitation | 92.95 | 67.11 | -25.84 |
| Prime Minister's National Relief Fund | 36.42 | | -36.42 |
| Poverty, Eradicating Hunger, Malnutrition | 51.92 | 0.04 | -51.88 |
| Conservation Of Natural Resources | 97.15 | | -97.15 |
| Environmental Sustainability | 109.84 | | -109.84 |
| Education | 215.16 | 66.83 | -148.33 |
| Vocational Skills | 215.72 | 32.46 | -183.26 |
| **Grand Total** | **1032.27** | **999.66** | |

Source: www.csr.gov.in

**Appendix 4.**
*Selected Companies' CSR Expenditure*

| **NON-PSU** | Year | Sectors | CSR Expenditure (In Crore) | **PSU** | Year | Sectors | CSR Expenditure (In Crore) |
|---|---|---|---|---|---|---|---|
| HDFC | 2019-20 | 6 | 535.31 | CCL | 2019-20 | 1 | 66.43 |
| | 2020-21 | 10 | 634.42 | | 2020-21 | 1 | 56.60 |
| IndusInd | 2019-20 | 7 | 108.14 | HPCL | 2019-20 | 9 | 182.24 |
| | 2020-21 | 6 | 94.72 | | 2020-21 | 11 | 141.69 |
| ITC Ltd. | 2019-20 | 7 | 326.49 | IOCL | 2019-20 | 10 | 520.95 |
| | 2020-21 | 10 | 335.43 | | 2020-21 | 9 | 445.09 |
| JSW Steel | 2019-20 | 8 | 139.73 | MCL | 2019-20 | 9 | 165.50 |
| | 2020-21 | 10 | 78.32 | | 2020-21 | 1 | 168.44 |
| TSIL | 2019-20 | 8 | 3.21 | PFC: | 2019-20 | 1 | 97.15 |
| | 2020-21 | 6 | 0.87 | | 2020-21 | 1 | 187.84 |

# MEASUREMENT OF JOB STRESS PARAMETRIC APPROACH FOR WORKPLACE INCIVILITY IN PAKISTAN BANKING SECTOR: A CASE STUDY

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**Introduction/background**: The research examines the experimental testing of the idea of workplace incivility in Pakistan's banking system using the examples of two districts named Jhelum and Sohawa Banks.
**Aim of the paper**: The paper's objective is to quantify the links between workplace incivility and work adaptability, job stress, and withdrawal behavior. Performance data for personnel in the banking system is provided via statistical measurements using parameters.
**Materials and methods**: A case study on the example of the banking system in Pakistan.
**Results and conclusions**: The author's confirmatory factor analysis, which incorporates statistical measures of the methodologies, is presented in the study for the performance that affects workplace civility along its parameters in Pakistan's banking sector.
**Keywords:** Workplace, incivility, adaptation, withdrawal, job stress.

## 1. Introduction

For most workers, dealing with interpersonal stressors at work, such as irritable coworkers or irate supervisors, maybe a given (Stroud, Tanofsky-Kraff, Wilfley, Salovey, 2000, pp. 204-213). However, studies show that when workers constantly deal with such unpleasant parts of the workplace, they lose their happiness and their ability to concentrate on their work. Workplace incivility is a type of interpersonal mistreatment that is frequently characterized by a lack of respect for others, rudeness, and disregard for protocol (Cole, Shipp, Taylor, 2016, pp. 273-302). According to one estimate, workplace incivility can cost companies $14,000 a year per employee in project delays and work-related diversions. While previous research has

made a significant effort to examine incivility and its effects at work, there is little study in the literature that focuses on moderators of incivility targets' responses to incivility (Milam, Spitzmueller, Penney, 2009, p. 58).

According to Atchley (1987), adaptation is the process of altering one's internal and exterior characteristics to fit into a circumstance or environment. The process of socialization involves learning the skills and knowledge required for one's work. Employees' perceptions of whether to engage in polite or impolite behavior at work might also be influenced by workplace adaptability (Atchley, 1987, pp. 316-330). Active socialization can reduce the deterioration of workplace norms and reduce rudeness. The experts can facilitate positive socialization activities that can help staff members successfully integrate into the company and learn the ropes, which can reduce the likelihood of disruptive behavior (Kelly, Duff, Kelly, McHugh Power, Brennan, Lawlor, Loughrey, 2017, pp. 1-18).

According to the Affective Events Theory developed in (Weiss, Cropanzano, 1996, pp. 1-74), some work behaviours are a direct result of employees' affective experiences at work. This idea focuses on significant events in a person's life that cause them to feel something or change their mood. Learning and behavior can be affected by emotions (Taub, Sawyer, Smith, Rowe, Azevedo, Lester, 2020, p. 103781). Positive and negative affect are two distinct characteristics that can be used to classify affect. It seems that one of the most important predictors of workplace rudeness is having bad emotions at work. The people who felt unsatisfied with their jobs were more likely to behave impolitely (Dodanwala, Santoso, Yukongdi, 2022; Hasnat, Khan, S.N., Khan, S.U., Ahmed, ABID, 2022, pp. 17-28).

The primary issue in organizations is job stress, which is also a popular research topic. Job stress is a circumstance in which a person is forced to deviate from their regular function due to an interruption of a job-related component that alters their physiological and physical state (Baker, 1985, pp. 367-381). Incivility increases job stress and lowers overall job satisfaction. Occupational stress, poor mental and physical health, and psychological distress are all related to incivility (Spielberger, Reheiser, 2020, pp. 51-69).

Withdrawal behavior is any intentional activity taken by an employee to avoid going to work or to lessen his or her sociopsychological attraction to or interest in the job or the organization. It is a progression of the attitudes and actions that employees display at work. Due to any reason, it causes the employees to abstain from participating in their work (Shapira-Lishchinsky, Even-Zohar, 2011, pp. 429-451; Estes, Wang, 2008, pp. 218-240).

## 2. Literature Review

The effects of occupational stress on absenteeism and worker turnover were also clearly reflected in the same study. In early studies guided by the Person-Environment Fit theory, differences in sources of job stress, and in stressful work-related events were investigated for a variety of occupations. In research guided by the Person-Environment Fit theory, measures of occupational stress have encompassed a wide range of contents. The perceived severity of a stressor will greatly influence the intensity of an emotional reaction when that stressor occurs. The Police Stress Survey was field-tested with 50 Florida law enforcement officers from seven geographically diverse locations (Spielberger, Reheiser, 2020, pp. 51-69). Human resources are one of the most important sources of any organization and should be given special attention to identifying the factors that affect their productivity. Stress is a type of physical and psychological burnout that arises from workplace problems due to a mismatch of work needs and desires with one's abilities. Occupational stress affects one's personal and occupational life. This stress has a variety of symptoms, including physical, psychological, and behavioral. Stress disrupts psychological balance and has different consequences. One of the psychological consequences of job stress is a decrease in job satisfaction that leads to quitting and quitting jobs and reduces one's commitment to the organization. Job satisfaction is the kind of attitude that one must work whereas increases one's productivity and commitment to the organization enhances one's physical and mental health and brings satisfaction to one's life. The purpose of this study was to investigate the role of job stress on job satisfaction (Singh, Amiri, Sabbarwal, 2019, pp. 57-60). The purpose of this study is to determine the effect of job stress and job satisfaction on organizational commitment. The research method used is the quantitative research method. The population in this research is employees of the marketing department at PT. Toyamilindo Cirebon with 50 people. The sampling technique used is the saturated sampling technique so that all members of the population sampled as many as 50 people. The data retrieval technique uses a questionnaire with Likert scale as an instrument measurement scale. The data analysis technique used is multiple regression analysis. The results of the research show that: 1) job stress does not have a significant effect on organizational commitment, and 2) job satisfaction has a significant effect on organizational commitment (Hakim, Hidayat, 2018).

This study examined the effect of affective commitment, job satisfaction, and job stress on intention to leave among bank employees in Nepal. Data were collected using a questionnaire-based survey of 282 employees working at a bank in Kathmandu. Data were analyzed using multiple regression analysis. The results suggested that affective commitment and job satisfaction had a negative effect, while job stress had a positive influence on turnover intention. Practical implications for the study are discussed (Yukongdi, Shrestha, 2020, pp. 88-98). Job stress is considered one of the critical causes of construction workers' unsafe behavior.

The scholars thoroughly reviewed the literature and conducted semi-structured interviews to identify the dimensions of job stress, designed the job stress scale, and cited the safety behavior measurement scale. After that, a questionnaire survey was developed using the proposed measurement scale and distributed to the construction employees from a project in Beijing. A total of 150 responses were collected and analyzed using reliability analysis to validate the scale's internal consistency. Results from factor analysis indicate that the scales of job stress measurement can be grouped into 6 dimensions. To demonstrate the applicability of the developed scale on construction safety management research, the collected data was used to test the hypothesis that job stress has a negative correlation with safety behavior. Results show that the hypothesis is valid, and there is a negative correlation between job stress and safety behavior. In addition, finer results of the relationship between the dimensions of job stress and safety behavior can be obtained. In summary, this study developed an improved stress scale for construction workers in China, and the proposed scale was validated by analyzing the data from an empirical study in Beijing (Wu, Li, Yao, Luo, He, Yin, 2018, p. 2409). The purpose of the study is to test the effect of job stress on job satisfaction and to define whether the employees' perceptions of a toxic leader influence the significant relationship between these two variables. If there are any effects, determine whether the toxic leadership is a partial or full moderating force, and make suggestions that will increase the welfare of the organization for employees. In line with this purpose, the data for the study has been obtained from 124 workers. As a result of the analysis performed, a significant relationship has been found between job stress and job satisfaction. It has been determined that, as a result of a multiple regression analysis on the mediating effect, a toxic leader perception is a partial moderator variable on the effect of job stress on job satisfaction, and that a 1-unit increase in job stress resulted in a decrease of 0.308 units on a job satisfaction scale, while a 1-unit increase in toxicity perception resulted in a decrease of 0.111 units on the job satisfaction scale (Uysal, 2019, pp. 55-73).

In addition to its financial costs, job stress has been linked to other serious consequences for both the individual (e.g., high blood pressure and heart disease) and the organization (e.g., decrements in performance, and increased turnover and absenteeism). This study presents a general research model of job stress within which the concept of stress is embedded. The model is based on two typical models of the antecedents and consequences of job stress. Those models hypothesize a set of organizational stressors, a set of personal characteristics, an individual stress response, and a set of individual consequences. The proposal of a new conceptualization and a new measure of job stress, and to report on an initial test of it. A path analytic model was proposed that hypothesized that personal, organizational, and role characteristics relate to job stress and its attitudinal and behavioral consequences (Summers, DeCotiis, DeNisi, 2020, pp. pp. 113-128). Resident physicians are the first-line health service providers, subjected to prolonged working hours, sleep deprivation, and high job demands. Work stress causes a reduction in productivity, suboptimal patient care, and medical errors. To determine the level of stress among residents and associated factors and stressors.

A cross-sectional study at Tanta University Hospitals recruited residents (n = 278), between December 2016 and February 2017. Job stress was assessed using a predesigned questionnaire. The mean age was 26.53 ± 1.35, and 46.4% were males. The majority reported they work more than 48 h/week, do not get a break during work, and have a night shift periodically (87%, 83.1%, and 94.2%, respectively). Only 4 (1.4%) had low stress while 169 (60.8%) had moderate and 105 (37.8%) had high stress. The study revealed a statistically significant association between high levels of stress and being a single resident (p = 0.017), belonging to surgical departments (p = 0.001), and an absence of a break during working hours (p = 0.001). The prime sources of stress were underpayment for the job (87.4%), serving to large number of patients (85.2%), disruption of home life due to long hours at work (83.9%), conflict of responsibilities (81.3%) and complying with increasing bureaucratic procedures (78.8%) besides no available fund for research (74.8%). Medical residents experienced moderate to high levels of job stress. Thus, there is a need for stress management programs during the residency training period taking into consideration the main sources of stress (Hassan, Abu-Elenin, Elsallamy, Kabbash, 2020, pp. 37557-37564).

Correctional officers perform a unique job that can lead to various negative outcomes. Understanding factors that can have harmful effects on important organizational attitudes like job stress, job satisfaction, and organizational commitment is imperative for the effective management of correctional institutions. Using survey data from 641 correctional officers employed at two Southwestern state-run prison facilities, the current study examines the influence of two measures of Work-Family Conflict (WFC), strain and time based on job stress, job satisfaction, and organizational commitment while controlling for many known antecedents of these variables. The results suggest that strain-based conflict is a significant predictor of job stress and job satisfaction, while time-based conflict only predicted job satisfaction. Neither measure of WFC had a significant relationship with organizational commitment. These findings are further contextualized in the discussion section with an emphasis on potential policy implications (Vickovic, Morrow, 2020, pp. 5-25). Many gaming revenues contributed by premium players lead casinos to build and maintain good relationships with these players with the help of casino hosts. This practice often nurtures the players' loyalty toward the hosts, rather than the casinos. Hence, minimizing the hosts' turnover intention is vital. Job stress is a major reason for employees to quit a job. This study contributes to the literature by (1) introducing perceived customer relationship as a stressor and (2) examining the moderating roles of social support from supervisors and co-workers in the mediation process of the proposed method. Drawing upon survey results from 200 hosts in Macao, our findings show that perceived customer relationship is positively associated with turnover intention through job stress. Meaningful implications are provided to minimize the host turnover that is caused by job stress (Fong, Chui, Cheong, Fong, 2018, pp. 795-810). The researchers specifically, test the impact of workplace aggression overall, as well as several types of workplace aggression, on the following work-related attitudes: satisfaction with job stress,

turnover intentions, and meaningfulness of work. The moderating effect of satisfaction with job stress in the workplace aggression-turnover intention relationship and the workplace aggression-meaningfulness of the working relationship was also investigated. Research findings demonstrated that workplace aggression decreased satisfaction with job stress and meaningfulness of work. Workplace aggression also increased turnover intentions. However, satisfaction with job stress did not interact with workplace aggression in either of the work-related attitudinal models. Furthermore, not all types of workplace aggression were found to affect work attitudes. These results are thoroughly discussed in the research (Caillier, 2021, pp. 159-182). The purpose of the study is to assess the moderating role of work-life balance on the effect of job stress on employees' job satisfaction. A survey method is used to collect the necessary data for this research. A total of 308 respondents from 90 manufacturing SMEs operating in Konya took part in the study. The data gathered are analyzed using the SPSS 23 program and Hayes PROCESS macro v.3.4.1. The results of the analyses reveal a statistically significant negative effect of job stress and a positive effect of work-life balance on job satisfaction. Moreover, work-life balance is found not to have a moderating role in the effect of job stress on job satisfaction. It is recommended that policymakers and managers of SMEs institute stress management techniques that have the propensity of reducing the negative consequences of job stress while maximizing its merits, as well as formulating strategies that will enable employees to have a balance between their personal and work lives (Attar, Çağliyan, Abdul-Kareem, 2020, pp. 201-223). Table 1 provides a clear overview of how workplace incivility can affect adaptability, job stress, and withdrawal behavior, as well as potential strategies for mitigating these impacts.

**Table 1.**
*The properties of workplace incivility along with workplace adaptability, job stress, and withdrawal behavior*

| Properties | Workplace adaptability | Job stress | Withdrawal behavior |
|---|---|---|---|
| **Initial definition** | The ability of employees to adjust to changes and new demands in the workplace. | The psychological and physical strain caused by job-related factors. | Actions or attitudes that reflect disengagement or avoidance from work. |
| **Impact of workplace incivility** | Reduces adaptability by creating a hostile environment that hinders adjustment to changes. | Increases stress levels as employees face disrespect and lack of support. | Promotes behaviors and reduced effort as a response to a negative work environment. |
| **Mitigating factors** | Supportive leadership, positive workplace culture, and resilience training. | Stress management programs, supportive relationships, and workload management. | Employee engagement initiatives, supportive policies, and mental health support. |
| **Role of workplace rudeness** | Undermines adaptability by lowering morale and creating a resistance to change. | Exacerbates job stress by adding emotional and psychological strain. | Acts as a catalyst for withdrawal behaviors, leading to higher turnover and lower productivity. |
| **Potential interventions** | Training programs to enhance adaptability skills and promote civility. | Implementing stress reduction techniques and fostering a respectful work environment. | Developing policies to address incivility and support employee engagement. |

The current study tries to uncover the relationship between work overload, work ambiguity supervisory support, and employee turnover intentions. The twelve companies are selected out of 23 total so the findings can be generalized in this sector. A structured questionnaire was distributed among the sample which consisted of 412 employees of this sector. Quantitative techniques were used to measure the results and statistical analyses were applied to confirm the research hypothesis. The findings of this study suggest that there is a significant and positive relationship between job stressors and employee turnover intention. Job factors, relationships at work, and career development opportunities have also impacted employees' turnover intention. Job stress has a positive and significant impact on employees' turnover intention. Considering the importance of employee turnover intention and job stress in the Pesticide sector, the researchers, administrator, and policymakers should take necessary measures to increase supervisory support at work, minimize work overload and work ambiguity, and improve other job factors to decrease the employees' intention to leave the organization (Zahra, Khan, Imran, Aman, Ali, 2018, pp. 1-12). Work in out-of-school learning programs can be stressful, and job stress may have cascading effects on the children and youth that attend. Fortunately, workplace support can help decrease this stress. In this study, the scholars aimed to understand how youth workers' personal and work-related demands as well as supports predict on-the-job stress. They used multi-level modeling to investigate the demands and supports of a sample of 111 youth workers nested in 25 programs. Results suggested that job stress systematically varies at the program level. They found that stress at home and a negative staffing climate is associated with higher stress and the presence of supervisor support is associated with lower staff stress. Supervisor support likely can play a key role in decreasing youth worker stress. They discuss implications for training supervisors and structuring programs to support staff and ultimately foster more positive out-of-school program experiences for the children and youth that attend (White, DeMand, McGovern, Akiva, 2020, pp. 47-69). The main objective of this research is to find out the effect job stress has on the performance of employees. Job stress can affect employee performance when stress is not handled well, absenteeism, turnover, and medical compensation increase, and productivity decreases. To achieve a peak of performance, stress should be managed effectively, with the negative effects of stress minimized. The fact that most of the employees thought of leaving their jobs and felt that the organization did not care about them reflected huge dissatisfaction that undoubtedly lowered performance. The organization must conduct a needs assessment for an Employee Assistance Programme. An Employee Assistance Programme must be introduced for early identification and intervention of problems so that performance levels will increase (Daniel, 2019, pp. 375-382).

The WFC is not only prevalent among seafarers but also may cause their job stress. The objective of this research is to investigate the relationship between WFC and job stress, examining the moderating role of job satisfaction, which plays in this relationship. A cross-sectional survey was conducted in Yangshan Port, Shanghai, China, from August to October

2019. Seafarers working on merchant vessels participated in the present study. Hierarchical linear regression analyses were employed to test the moderating role of job satisfaction. The results demonstrated that WFC was positively associated with job stress. Job satisfaction played a moderating role in the association of WFC with job stress. The findings show that job satisfaction was a crucial factor in reducing seafarers' job stress. Managers should therefore enhance organizational investment and support in job satisfaction to reduce seafarers' job stress (Liu, An, Sun, Liu, 2022, pp. 1989-1995). This study proposed a nuanced approach to the association between job insecurity and financial stress by examining whether financial well-being mediates the established association. In addition, the scholars examined whether the association between job insecurity and financial stress, through financial well-being, is moderated by income. For this study, they conducted a path analysis using 1,145 survey respondents. Results revealed a significant relationship between job insecurity and financial stress and a partial mediation effect on financial well-being. Moreover, the indirect effect of job insecurity on financial stress through financial well-being was moderated by income. Although people who have higher financial well-being were more likely to have lower financial stress, this relationship varied by income such that it was stronger for higher income groups than for lower income groups. Their findings provide insights into the way job insecurity and financial well-being influence financial stress. Implications for practice and directions for future research are discussed (Choi, Heo, Cho, Lee, 2020, pp. 353-360).

## 3. Materials and Methods

### 3.1. Theoretical support and Hypothesis Development

*3.1.1. Relationship of Workplace Adaptation with Workplace Incivility*

Workplace rudeness hinders the socialization-related learning needed to adapt to the association since representatives are less willing to ask coworkers and supervisors for the information they need because of the lack of correspondence. Working environment adjustment is a learning technique that clarifies newcomers through both legitimate and easy-going learning plays out the appropriate responses for adjusting to contrasting conditions in their new environment, according to (Reio, Callahan, 2004, pp. 3-22; Reio, Sutton, 2006, pp. 305-324). By forming relationships with partners and then administrators through interest-driven exploratory practises, such as argument, supposition, and guided thinking, newcomers secure employment-related data that they need to continually integrate into workgroups, cross-functional groups, and the association (Reio, Wiswell, 2000, pp. 5-30).

**H1: Workplace Adaptation predicts the uncivil behaviour significantly.**

*3.1.2. Relationship of Workplace Adaptation with Job Stress*

It is widely acknowledged that the socialising process is a way to lessen the instability associated with starting a new career. All the newcomers go through a process of gathering information and making sense of it to assess how well they fit into the hierarchical context and gain knowledge of the typical mental states and behaviours (Louis, 1980, pp. 226-251). The effective socialising studies promotes learning opportunities as well as clarity regarding expectations related to work assignments, appropriate conduct, and social standards within the association. Consequently, one important goal of socialisation is to provide new employees with information that aids in the learning process and effectively reduces vulnerability, and by implication, stress (Klein, Heuser, 2008, pp. 279-336).

**H2: Workplace adaptation predicts the job stress significantly.**

*3.1.3. Relationship of Workplace Adaptation with Withdrawal Behavior*

One of the main concerns at work is how to pay the employees. The employees feel uncomfortable while working in a company that produces less yield productivity because of the unfavourable environment, and they continue to be always unsociable and unaware, which may lead to disappointment in the market competition and a decline in the positive trend. Vagueness and uncertainty appear to generate reduced efficiency, strain, dis-illusionment, and dis-engagement from the work group because of inability to socialise (Van Sell, Brief, Schuler, (1981, pp. 43-71). Since they are the group that will always have the most direct contact with and thus the most direct impact on the newcomer, associates and administrators are crucial facilitators of newcomer change (Bauer, Morrison, Callister, Ferris, 1998, pp. 149-214). They are frequently the resource that newcomers can access the easiest, as well as the one that newcomers perceive as being most useful during the socialisation process (Lundberg, Young, 1997, pp. 58-74). In this way, it is obvious that newcomers who experience social support are off to a good start. In any event, not every newbie contact involves a wealth of resources and assistance.

**H3: Workplace adaptation predicts the withdrawal behaviour significantly.**

This section serves as an example of how the quantitative data analysis approach should be defended. It will also outline the procedures used to verify and validate the data.

### 3.2. Quantitative Approach

In earlier research, researchers built and tested theories using two different approaches. There are two methods of reasoning: inductive and deductive (Neuman, Celano, 2006, pp. 176-201). The present study therefore chooses a quantitative approach. Figure 1 described both approaches with their detailed processes.

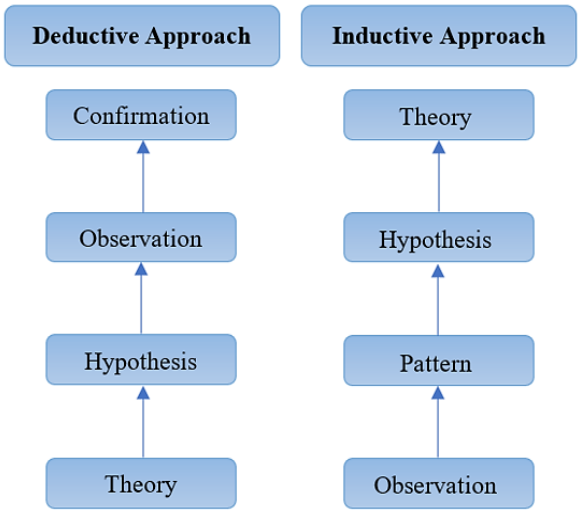


**Figure 1.** Deductive and inductive approaches with all steps.

### 3.3. Sampling Design

*3.3.1. Population*

Blerkom (2009) claims that the population refers to the collection of observations from which a preferred sample is chosen for closer examination (Van Blerkom, 2009, pp. 354-364). The target demographic in the current study is made up of workers in the banking industry in the Pakistani Punjab province's Jhelum and Sohawa districts. There are 310 active private and state banks in Jhelum and Sohawa. These banks offer their services in these two districts.

*3.3.2. Sample*

The specimen is the smallest component to represent a population. Subsequently the results from a single specimen may be extrapolated to the entire population. According to the research, an increase in sample size from 1000 to 2000 (a 100% increase) would result in an efficiency of just 1%. A key difficulty is selecting acceptable standards for efficient sampling. According to study, choosing the ideal sample size necessitates using appropriate parameters. Hence, sample criteria define in the Table 2.

**Table 2.**
*The sample criteria*

| Population | Projected Sample size |
|---|---|
| For 500 | 50 percent |
| For 1,000 | 30 percent |
| For 10,000 | 10 percent |
| For 150,000 | 1 percent |
| For one million or over | 0.025 percent |

The Jhelum and Sohawa districts' banking sectors currently employ 3100 people. The scholars state that to get the data needed to analyse the predictors and consequences of workplace incivility, the current study targeted 10% of the population, or 310 employees. Therefore, it is crucial to gather a representative sample of employees to represent the entire workforce and address the true issue of rudeness in the banking industry (Christensen, Johnson, Turner, Christensen, 2011).

### 3.4. Instrumentation

The questionnaire will be the most appropriate method of conducting the survey due to the high sample size and the geographical tests. The design of the survey and an explanation of the variables chosen, as well as its reliability and validity measures, are included in the first stage.

### Structure of the Instrument

Six (06) components make up the questionnaire: (1) Demographic Information; (2) Workplace Adaptation; (3) Effective Experience; (4) Workplace Incivility; (5) Job Stress; and (6) Withdrawal Behavior.

To quantify workplace stress, research included 5 items. The 5-point scale was established by (Crank, Regoli, Hewitt, Culbertson, 1995, pp. 152-171). An index evaluating job stress was created by adding replies to five different questions. An example response is "I get quite annoyed or furious at work a lot of the time". Responses were collected using a 5-point Likert scale, with 1 denoting "strongly disagree", 3 denoting "neutral", and 5 denoting "strongly agree". The Cronbach's alpha for the occupational stress index was 0.82, indicating moderate construct reliability.

First, data analysis was carried out in the current study after data screening. Second, the CFA provided evidence for each of the investigated factors. Testing was done on the current study's suggested model. Using structural equation modelling, it was possible to explore the causes and consequences of workplace rudeness. Additionally, the validity and reliability of the instrument were reviewed prior to testing the path analysis. The results of the tests conducted in relation to the research questions looked at in the current study are summarised in Table 3. The Table 4 displays the CFA acceptable threshold values for various fit indices.

**Table 3.**
*Summary of statistical techniques through research questions*

| Research question 1 | Research question 2, 3 |
|---|---|
| Descriptive statistics, Pearson’s moment correlation and CFA | Descriptive statistics, CFA, and Structural equation modeling |

**Table 4.**
*Threshold values of CFA*

| **Name of Category** | **Absolute Fit** | **Incremental Fit** | **Parsimony Fit** |
|---|---|---|---|
| **Description** | Measures overall goodness-of-fit for both the structural and measurement models collectively | Measures goodness-of-fit that compares the current model to a specified "null" (independence) model to determine the degree of improvement over the null model | Measures goodness-of-fit representing the degree of model fit per estimated coefficient |
| **Name of Index** | CMIN (Chi-sq) | Comparative Fit Index (CFI) | Chi-sq/df |
| | Root Mean Square Error of Approximation (RMSEA) | Tucker-Lewis Index (TLI) | |
| | Goodness-of-Fit Index (GFI) | Incremental Fit Index (IFI) | |
| **Threshold Values** | p-value ≤ 0.05 | CFI ≥ 0.9 | Chi square/df ≤ 5.0 |
| | RMSEA≤ 0.08 | TLI ≥ 0.9 | |
| | GFI ≥ 0.9 | IFI ≥ 0.9 | |
| **Remarks** | Sensitive to sample size ≥ 200, non-significant at least p-value ≥ 0.05 | CFI= 0.95 is a good fit | The value should be below 5.0 |
| | Range 0.05 to 0.10 acceptable | TLI = 0.95 is a good fit | |
| | GFI = 0.95 is a good fit | IFI = 0.95 is a good fit | |

### 3.5. Data Screening

A total of 310 questionnaires were given out to banking staff for this study, and 267 of them were returned, yielding an actual response rate of 86.13%. During the data screening procedure, every survey questionnaire was checked.

### Sample Description

Table 5 gives an example of a description of an employee's demographics, including age, gender, sector of employment, educational background, size of establishment, and length of employment with public and private banks in the Punjabi districts of Jhelum and Sohawa in Pakistan. A total of 267 completed questionnaires were used in the current study, of which 52 respondents were between the ages of 20 and 24 and 127 employees were between the ages of 25 and 29, 79 employees are between the ages of 30-35, and the remaining 9 employees were aged 36 or more. Furthermore, the banking industry in Pakistan has a male predominance despite the presence of females; hence, 243 respondents were men, and 24 respondents were women. A total of 224 respondents are from commercial banks, while 43 respondents are from public banks, according to additional information on the industry. The qualifying of the respondents comes next. In 267 responders, there were 14.2% intermediate employees, 58% graduates, and 27.7% post-graduates. According to additional information regarding the establishment size, the banking industry employs fewer than 25 people. 7.1% of employees have been with the company for less than a year, according to further information on job tenure. 23.2% of the workforce works in banks and has 1-2 years of experience. 56 people have worked

in banks for more than three years, which implies they have experience of at least three years, and 130 employees have worked in banks for two to three years.

**Table 5.**
*Demographic description of participants*

| Demographic | Demographic Features | Frequency | Percentage |
|---|---|---|---|
| **Age** | 20-24 | 52 | 19.4 |
| | 25-29 | 127 | 47.5 |
| | 30-35 | 79 | 29.5 |
| | 36 or greater | 9 | 3.37 |
| | Total | 267 | 100.0 |
| **Gender** | Male | 243 | 91.01 |
| | Female | 24 | 8.98 |
| **Sector** | Public | 43 | 16.1 |
| | Private | 224 | 83.8 |
| **Qualification** | Intermediate | 38 | 14.2 |
| | Graduation | 155 | 58.0 |
| | Post-graduation | 74 | 27.7 |
| | Total | 267 | 100.0 |
| **Establishment size** | Less than 25 employees | 267 | 100.0 |
| | 25-29 | 0 | 0 |
| | 100-199 | 0 | 0 |
| | Total | 267 | 100.0 |
| **Job tenure in this organization** | less than one year | 19 | 7.1 |
| | 1-2 year | 62 | 23.2 |
| | 2-3 year | 130 | 48.6 |
| | 3-5 year | 56 | 20.9 |
| | Total | 267 | 100.0 |

## 4. Results and Discussion

### 4.1. Workplace Adaptation and Incivility

Workplace rudeness hinders the socialization-related learning needed to become accustomed to the association since representatives are less willing to ask coworkers and supervisors for the information they need because of the lack of correspondence. The success of organisational socialisation will depend on the openness of communication of many subordinates, fostering the relationship between managers and employees, comprehending the role (work) and hierarchical responsibility, and especially the organisational socialisation strategies.

### 4.2. Correlations of variables

The researchers used the data imputation approach to determine the average value of each construct to determine the Pearson's moment correlation. In earlier investigations, mean values were calculated using SPSS; however, AMOS 21 was utilised in the current study to impute the

data. The correlation coefficients between workplace adaptation, job stress, and withdrawal behaviour are shown in Table 6. The standard deviation of workplace adaptation is 0.635 and indicates a 63.5% variation in replies. The mean value of workplace adaptation is 1.76, which is close to 2 and indicates that most respondents disagreed. Furthermore, at P 0.01, workplace incivility, job stress, and withdrawal behaviour are all adversely and significantly linked with workplace adaptation (r = -.37**, r = -.38**, r = -.41**). The standard deviation of positive effects is 0.928 and indicates that there was 92.8% variation in replies. The mean value of positive impacts is 2.02, which is close to 2, which indicates that most respondents disagreed. Additionally, positive effects substantially linked (r = -.36**, r = -.37**, r = -.41**) with workplace disrespect, work-related stress, and withdrawal behaviour at P 0.01.

The standard deviation of negative impacts is 0.988, indicating that there was 98.8% variety in replies. The mean value of negative effects is 2.79, which is near to 3, indicating that many respondents were indifferent. Negative impacts also substantially and positively (r = 0.48**, r = 0.47**, r = 0.43**) associated with job stress, and withdrawal behaviour at P 0.01, respectively. The standard deviation of workplace incivility is 0.544, which indicates a 54.4% variation in replies. The mean value of workplace incivility is 3.05, which is close to 3. This indicates that most respondents were neutral.

**Table 6.**
*Means, Standard Deviation and Pearson's Moment Correlation of the standard selected parameters*

| Variables | PE | NE | WI | JS | WB |
|---|---|---|---|---|---|
| **PE** | 1 | -.344** | -.363** | -.370** | -.414** |
| **NE** | | 1 | .489** | .470** | .430** |
| **WI** | | | 1 | .390** | .559** |
| **JS** | | | | 1 | .409** |
| **WB** | | | | | 1 |

* P.05, ** P.01, M = Mean, SD = Standard Deviation, WA = Workplace Adaptation, PE = Positive Effects, NE = Negative Effects, WI = Workplace Incivility, JS = Job Stress, and WB = Withdrawal Behavior.

The mean value of job stress is 3.22, which is near to 4, meaning that the majority of respondents agreed, and the entire variety in their answers is 66%. In contrast, the mean value of retreat behaviour is 3.15, which is higher than 3, with a variation in responses of 61%.

### 4.3. Job Stress

The element was verified by CFA using AMOS 21. Five items from (Lambert, Hogan, Camp, Ventura, 2006, pp. 371-387) construct of job stress was used to study job stress among Punjab, Pakistan, banking staff. To better understand the model of job stress, a CFA was used in this review. The criteria for item elimination were established based on the factor loadings and residual estimations of each item when CFA was tested.

The standard value of each residual was chosen at or below 2.80, and factor loading >.30 or higher was chosen to keep the item. The outcomes of the subsequent model specification were remarkably excellent, and the Chi-square value was also within a reasonable range. The goodness of fit index value is 2/df=21.174, and Table 7 displays the remaining values as GFI = 0.991, CFI = 0.992, RMR = 0.016 and RMSEA = 0.070. Besides this, Table 8 displays the items for job stress. The range of standardised factor loadings in the model is from 0.62 to 0.75, which is over the established threshold for keeping the items as shown in Figure 2 and within a very acceptable range.

**Table 7.**
*The observations regarding CFA of job stress*

| **Statistics** | **Absolute Fit** | | | | | | **Incremental Fit** | | | **Parsimony Fit** |
|---|---|---|---|---|---|---|---|---|---|---|
| **Fit Indices** | $\chi^2$ | DF | CMIN/DF | GFI | RMR | RMSEA | NFI | TLI | CFI | AGFI |
| **Acceptable Threshold value** | As close as to Zero | As close as to Zero | As low as 2 and as high as 5 | >.95 | <.05 | <.08 | >.90 | >.90 | >.95 | >.90 |
| **1-factor Model** | 6.925 | 2 | 3.463 | .987 | .029 | .096 | .983 | 964 | .988 | .934 |

The following abbreviations are used in statistics: 2 = Chi-square, DF = Degree of Freedom, CMIN = Minimum Chi-square, GFI = Goodness of Fit Index, RMR = Root Mean Square Residual, RMSEA = Root Mean Square Error of Approximation, NFI = Normed Fit Index, TLI = Tucker Lewis Index, CFI = Comparative Fit Index, AGFI = Adjusted Goodness of Fit Index.

**Table 8.**
*Retained Items of Job Stress*

| **Item Number** | **JS1** | **JS2** | **JS3** | **JS4** |
|---|---|---|---|---|
| **Retained Items** | "A lot of times my job makes me very frustrated" | "When I am at work, I often feel tense and uptight" | "I am usually calm and at ease when I am working" | "There are a lot of aspects of my job that make me upset" |

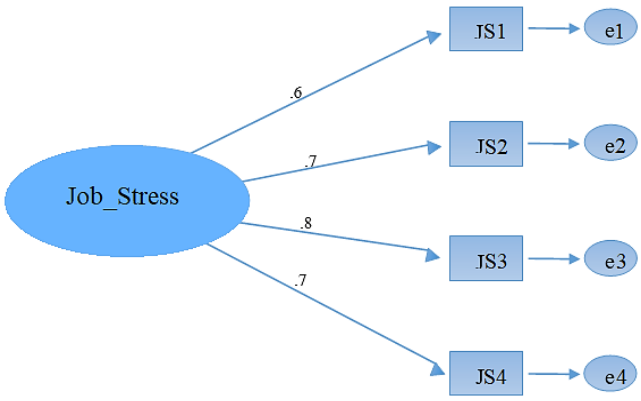


**Figure 2.** The CFA of Job Stress.

### 4.4. Withdrawal Behavior

Through CFA with AMOS 21, the factors were verified 4 elements from (Lehman, Simpson, 1992, p. 309) made up the withdrawal behaviour construct, which was used to investigate the withdrawal patterns of Pakistani banking personnel.

To further understand the results of the investigation, a CFA was tested as a model. The criteria for item elimination were established based on the factor loadings and residual values of each item after CFA testing. The standard value of each residual was chosen at or below 2.80, and factor loading >.30 or higher was chosen to keep the item from the Table 9.

**Table 9.**
*Retained Items of Withdrawal Behavior*

| Item Number | WB1 | WB2 | WB3 | WB4 |
|---|---|---|---|---|
| **Items of Withdrawal Behavior** | "I leave the work early without permission" | "I take longer lunch and break than allowed" | "I take suppliers and equipment without permission" | "I fall asleep at work" |

All six items were put onto a single factor to evaluate a single factor model of withdrawal behaviour, which produced the best results. This model produced remarkably excellent results, and the Chi-square value was also within a reasonable range. According to Table 10, the goodness of fit index values is 2/df = 93.353, which is high, as well as GFI = 0.971, CFI = 0.976, RMR = 0.030, and RMSEA = 0.070. As shown in Figure 3, the ranges of standardised factor loadings after the model definition are from 0.62 to 0.91, which are highly acceptable and higher than the established standard for keeping the items.

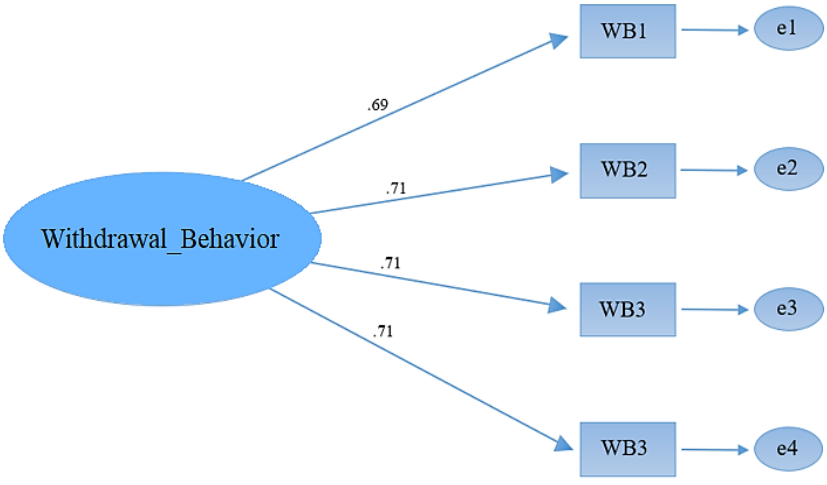


**Figure 3.** The CFA of Withdrawal Behavior.

**Table 10.**
*The observations of regarding Confirmatory Factor Analysis Withdrawal Behavior*

| Statistics | Absolute Fit | | | | | | Incremental Fit | | | Parsimony Fit |
|---|---|---|---|---|---|---|---|---|---|---|
| **Fit Indices** | $\chi^2$ | DF | CMIN/DF | GFI | RMR | RMSEA | NFI | TLI | CFI | AGFI |
| **Acceptable Threshold value** | As close as to Zero | As close as to Zero | As low as 2 and as high as 5 | >.95 | <.05 | <.08 | >.90 | >.90 | >.95 | >.90 |
| **1-factor Model** | 2.040 | 2 | 1.020 | .996 | .015 | .009 | .993 | 1.000 | 1.000 | .981 |

The following abbreviations are used in statistics: 2 = Chi-square, DF = Degree of Freedom, CMIN = Minimum Chi-square, GFI = Goodness of Fit Index, RMR = Root Mean Square Residual, RMSEA = Root Mean Square Error of Approximation, NFI = Normed Fit Index, TLI = Tucker Lewis Index, CFI = Comparative Fit Index, AGFI = Adjusted Goodness of Fit Index.

## 5. Conclusion

According to the research question, is there a link between workplace adaptability, successful experience, job stress, and withdrawal behaviour in banking staff?

According to (Baron, Kenny, 1986, p. 1173) definition of the conditions for mediation, there must be a substantial direct relationship between the exogenous and endogenous variables for mediation to exist. To answer this study topic, various hypotheses have been investigated. Incivility at work is significantly positively correlated with job stress. According to the findings, there is a strong positive correlation between workplace rudeness and job stress. The results of the new study agree with those of the earlier ones. For instance, according to (Miner, Settles, Pratt-Hyatt, Brady, 2012, pp. 340-372), rudeness among coworkers is associated with higher levels of stress. According to (Lim, Cortina, Magley, 2008, p. 95), workplace incivility is linked to stress from the job, poor mental and physical health, and psychological distress among employees. Incivility at work has a mediation influence on both workplace adaptation and job stress. The results showed that rudeness at work had a substantial partial mediation influence between workplace adaptation and job stress. In the context of this study, it suggests that when socialising is effective, there would not be any rude behaviour and, consequently, no stress at work.

Incivility at work and withdrawing behaviour have a strong positive correlation. According to the findings, there is a strong positive correlation between rudeness at work and withdrawal. According to (Kern, Grandey, 2009, p. 46), even one act of rudeness results in unfavourable consequences. In an unwelcoming or unpleasant atmosphere, employees feel distracted and dissatisfied, which may increase employee absences or contribute to escalating employee conflict. The result could be a reduction in work effort and a drop in production. Incivility in

the workplace has a mediation influence on both workplace adaptability and withdrawal behaviour. The results showed that workplace rudeness had a substantial partial mediation influence between workplace adaptability and withdrawal behaviour. In the context of this study, this suggests that when workplace adaptation is effective, there would not be any uncivil behaviour, and employees won't ultimately exhibit withdrawal behaviour.

According to the findings, uncivil behaviour, task stress, and withdrawing behaviour don't exist when there are positive impacts. On the other side, if there are adverse impacts, there will be rude behaviour, which will eventually lead to job stress and withdrawal behaviour.

## 6. Limitations of the study

The current study contains limitations, as with all investigations. The study tried to cover the broad range of elements that can affect the phenomenon of workplace rudeness among bank employees. To complete this assignment, the researcher had to deal with a few obstacles, which need to be explored and avoided in future studies. The results of the current study are only applicable to the two districts of Punjab, Pakistan (Jhelum and Sohawa). For greater understanding, divisional discussions should be held. The investigation at hand is quantitative. Qualitative research may also help to clarify the reasons why rudeness occurs. Researchers would also benefit greatly from the creation of new incivility measures that are theoretically more sound and psychometrically more rigorous. The current study by the researcher is cross-sectional; therefore, longitudinal studies may be valuable for tracing the evolution of the research variables' effects on organizational results. For instance, it would be intriguing to monitor newcomers for two years and look at how unruly behaviour affects how much they learn and socialise as well as how long they stay with the company.

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## 8. Conflict of interest

The authors confirm that there is no conflict of interest involved with any parties in this research study.

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# AUTONOMIZATION OF NON-ADDED VALUE PROCESS IN LOGISTICS – CASE STUDY

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**Introduction/background**: This research elucidates the tangible benefits and operational patterns of incorporating AMR (Autonomous Mobile Robots) in warehouse management, particularly for non-value-added processes. It offers insights to logistics providers on optimizing their use of AMR and understanding the cost-benefit dynamics when juxtaposed against traditional human-operated systems.
**Aim of the paper**: The primary objective of the study was to present the justification for the operation of AMR using the example of a selected warehouse process implemented by a 3PL company The selected process is handling of empty pallets in the warehousing management of a 3PL company.
**Materials and methods**: The research utilizes a case study approach targeting a leading global 3PL provider known for comprehensive warehousing solutions and value-added services (VAS). The case specifically addresses the deployment of two AMR to manage non-value-added processes related to empty pallet handling in the warehouse. The data for analysis was sourced from a system synchronized with a warehouse management system (WMS) covering a span of six months.
**Results and conclusions**: Upon extensive analysis, it was discerned that the AMRs, while operational, spent about 30% (AMR1) and 35% (AMR2) of their time ready but without tasks. Such statistics suggest an underutilization of the robots, yet also indicate a robust warehouse management system ready to accommodate unexpected surges in demand. Detailed examination further revealed that AMR1's main activity (57% of tasks) was retrieving empty pallets from the AS/RS output modules, whereas AMR2 was predominantly (70%) involved in moving empty pallets to the transit area. Notably, even with AMRs being underutilized, the operational cost savings compared to human-operated forklifts was evident. The study is restricted to the autonomization of a single process in one 3PL company, and the results might not be universally applicable to all logistics service providers or other processes. Further, the research only spans a period of six months.
**Keywords:** Autonomous mobile robots, Logistics, Planning and control, Value-added services.

## 1. Introduction

In the realm of industrial settings, spanning multiple decades, both AGV (automated guided vehicle) and AMR have played pivotal roles in enhancing the efficiency of intralogistics and material handling operations. Nevertheless, for system integrators, the selection and successful implementation of enhanced, appropriate, and dependable communication and control technologies for these unmanned vehicles continue to present a formidable challenge (Hercik et al., 2022). The unique communication demands of AGV and AMR place rigorous performance expectations on communication links in terms of both latency and reliability, criteria that many existing wireless technologies often struggle to meet (Oyekanlu et al., 2020).

AMR are now finding their way into various intralogistics domains, including manufacturing, warehousing, cross-docks, terminals, and hospitals. With their advanced hardware and control software, AMR are capable of carrying out tasks independently in dynamic settings. In contrast to AGV systems, where a central unit manages scheduling, routing, and dispatching for all AGV, AMR have the ability to communicate and negotiate autonomously with other resources such as machines and systems, thus distributing decision-making across the system. This decentralized approach enables the system to adapt dynamically to changes in both the system's state and the environment. These advancements are reshaping the conventional methods and decision-making processes for planning and control. The integration of automation and autonomy themes with third-party logistics is a topic that frequently appears in publications (Helmke, 2022; Amiri et al., 2022). The authors decided to review the SCOPUS database to examine how the automation theme, mainly using AMR, is connected with third-party logistics. Sources were searched with titles, keywords, or abstracts containing both AMR and third-party logistics terms. The query used was as follows: (*TITLE-ABS-KEY ("autonomous mobile robots") AND TITLE-ABS-KEY ("3PL" OR "third-party logistics" OR "third-party logistic" OR "logistics service provider" OR "LSP"))*. Two publications were found. In one, the AMR theme is described technically, and a tool for positioning these robots is developed (Tanaka et al., 1998). In the second publication, the emphasis is on the navigation of such robots in the internal logistics space, suggesting that AMR can positively impact the efficiency of logistics processes (Chen et al., 2023). Of course, the literature extensively describes the concept of using AGV-type solutions, mainly because these solutions have been on the market for a much longer time. The relatively low number of publications related to the use of AMR in the realm of third-party logistics and in non-value-generating processes led to the formulation of the main goal and the research question.

The main objective of the paper is to present the justification for the operation of AMR using the example of a selected warehouse process implemented by a 3PL company. The paper adopts a single research question, with the following content: What are the benefits of autonomizing the process of handling of empty pallets in the area of warehouse management

of a 3PL company? We contribute to the literature to guide managers in the decision-making process, thus supporting them in achieving optimal performance using AMR and AGV. Finally, we propose an agenda for future research in this area.

## 2. Theoretical background

### 2.1. Non-added value processes in logistics

While the traditional Taylor-Ford model primarily aimed at cost reduction through volume-based strategies, the contemporary business landscape demands a more comprehensive approach. In today's dynamic environment, companies must prioritize their sustainability and competitiveness. To achieve this, firms need to reevaluate their production processes, distinguishing between "Added Value" (AV) and "Non-Added Value" (NAV) tasks. To assess and optimize these actions, companies employ a process known as value-added analysis. This systematic examination dissects each step within their processes to determine if each activity contributes value to their products or services. When a process or activity is found to lack value, the company's objective is to either transform or eliminate it. Some NAV tasks should be systematically eliminated to align with the modern industrial vision and the focus should shift toward enhancing management practices (Azzemou, Noureddine, 2021).

An effective point of intervention for improving competitiveness is within the logistics chain, a pivotal component of current production and distribution systems. The logistics chain encompasses physical operations such as transportation, warehousing, handling, and packaging, all of which significantly contribute to the overall value of the end products. In essence, logistics represents a complex system comprising both product flows and information flows, necessitating adept management to ensure quality, reliability, and responsiveness while minimizing operational costs (Min, 2019). It is recognized as a strategic function that generates added value for the company, making it an ideal area for strategic enhancement in the pursuit of sustainability and competitive advantage.

Appreciating the significance of value-added activities hinges on a deep comprehension of the requirements of businesses. These activities present substantial opportunities to manufacturing firms, particularly when their impact on business performance has been thoroughly grasped (Yang et al., 2013). In this context, value-added activities provided by suppliers can be defined as any proactive measures taken by suppliers to enhance the value of the delivered products or services, with a notable emphasis on contributions from key suppliers (O'Brian, 2014). This research area is attention on four key value-added activities that exert a notable influence on the performance of manufacturing firms: supplier-customized services, collaborative logistics, the sharing of information, and the realms of innovation and

development. These facets collectively underscore the multifaceted nature of value enhancement within the manufacturing domain, with the potential to yield substantial gains in overall business performance (Jum'a, 2020).

Elevating business performance hinges on the optimization of flow management, a domain mastered by the logistics function. In essence, this optimization entails the reduction of production or transportation time, ultimately leading to substantial financial benefits. It is imperative to recognize that logistics has evolved into a strategic imperative, with Added Value (AV) serving as a pivotal factor in a company's competitiveness, regardless of its size or specific industry.

In this context, the elimination of non-AV activities is a central objective, and this aspiration is realized through the Lean concept (Ikechukwu, 2019). At its core, Lean thinking revolves around the eradication of waste, known as "Muda" in Japanese. Waste is defined as any action or circumstance that fails to create value for the customer (Womack, Jones, 2015). Any action that ceases to contribute value or has never done so is categorized as non-value-added, often referred to as waste. Waste encompasses anything that surpasses the minimal essential resources required to produce a product or service. Depending on the context, waste can manifest as surplus materials, superfluous equipment, unnecessary expenditures, time squandered, surplus personnel, or excess parts. Another perspective on waste is any activity or process that fails to bring about a physical alteration in the product or bolster its profitability by fulfilling the customer's prerequisites.

Seven distinct types of waste have been identified, and among them, overproduction stands out as the most pernicious, as it begets and conceals other forms of waste (Cortes et al., 2016). Overproduction invariably leads to surplus inventories, which, in turn, obstruct the path to continuous improvement (Dossou et al., 2022). Just as Lean Manufacturing principles have been successfully applied to production, they are equally adaptable to the realm of logistics. Lean Logistics sets its sights on eliminating waste throughout the supply chain (Morgan, 2006). This endeavor translates into heightened productivity, diminished inventories, reduced floor space requirements, decreased overall logistics expenses, and enhanced service levels, notably in terms of on-time deliveries (Christopher, 2013). Within the logistics domain, it's evident that seven areas of waste have been identified:

- Handling disproportionate quantities, involving unnecessary movements or the handling of larger quantities than required.
- Empty transportation, signifying the transport of underutilized or empty loads.
- Superfluous operations, such as unnecessary or redundant transportation, repackaging, and more.
- Unwarranted human movements and motion.
- Accumulation of stock and outstanding inventory.
- Non-conforming goods, encompassing deterioration, picking errors, and quality issues.
- Machine underutilization and inactivity.

Recognizing and systematically addressing these areas of waste is instrumental in achieving streamlined and cost-efficient logistics operations On the flip side, In the fast-paced world of logistics, the efficiency of operations is paramount. To ensure that products and goods reach their destination in a timely and cost-effective manner, companies must continually seek ways to optimize their processes (Azzemou, Noureddine, 2021). One key aspect of this optimization is the identification and elimination of non-added value processes. Non-added value processes are activities within the logistics chain that do not directly contribute to the quality or functionality of the product but consume valuable resources, including time, labor, and capital. Identifying and minimizing these processes is essential for improving overall efficiency and cost-effectiveness. Several strategies can be employed to address non-added value processes in logistics: Process Mapping, Value Stream Analysis, Lean Principles, Technology Integration, Continuous Improvement, Collaborative Partnerships. By recognizing and addressing non-added value processes, logistics companies can enhance their competitiveness, reduce costs, and provide better service to their customers. This ongoing commitment to process improvement is essential in a world where every minute and resource count in the quest for operational excellence.

### 2.2. AMR and AGV

Within the industrial sector, the evolution of robots has seen them progress from being robust but stationary machines to becoming highly advanced mobile platforms, catering to a more extensive array of automation requirements (Liaqat et al., 2019). The inception of AGV dates back to 1953, when Barret Electronics, located in Northbrook, Illinois, USA, introduced the first known AGV (Muller, 1983). Since that milestone, AGV have found extensive use in streamlining intralogistics and material handling operations within industrial settings (Ullrich, 2014). In recent decades, the adoption and integration of AMR have continued to flourish in these same environments. AMR typically refer to material handling vehicles with the ability to autonomously traverse from one location to another to fulfill specific tasks. They are often equipped with robotic arms and actuators mounted on mobile platforms (Shneier, Bostelman, 2015). AGV, on the other hand, are predominantly employed in industrial applications for the purpose of moving materials within manufacturing facilities or warehouses (Iwasa, 2017).

Over the past few decades, there has been rapid progress in materials handling technology. Notably, one significant advancement has been the transformation of AGV into AMR. The guidance systems that are at the core of AGV-based material handling systems have undergone a remarkable evolution, progressing through various stages, including mechanical, optical, inductive, inertial, and laser guidance, culminating in the present-day vision-based system (see Fig. 1). This contemporary vision-based system relies on a plethora of sensors, robust on-board computers, artificial intelligence (AI), and simultaneous location and mapping (SLAM) technology. These components empower the device to comprehend its operational

environment and navigate within facilities without the need for pre-defined reference points. This breakthrough has ushered in a new era of navigational flexibility.

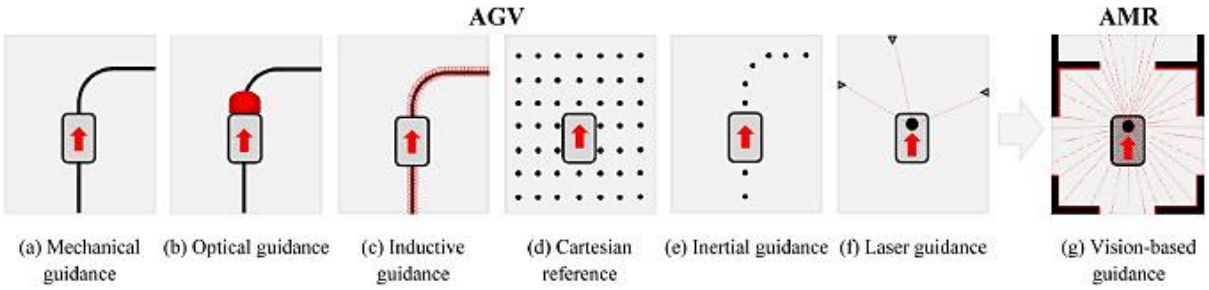


**Figure 1.** General workflow of AMR1.

Source: Adapted from: Fragapane et al., 2021, p. 406.

Traditional AGV are restricted to adhering to predetermined routes and navigating exclusively to predefined locations along those routes, as illustrated in Figure 1(a) through 1(f). In contrast, AMR possess the capability to maneuver to any reachable point within a designated area without encountering collisions, as depicted in Figure 1(g). Minor alterations, such as modifications to machine layouts, would typically entail significant time and potential periods of inactivity when employing most AGV guidance systems, posing economic risks and productivity setbacks. In contrast, AMR exhibit a remarkable ability to swiftly adjust to changes in the operational environment (Fragapane et al., 2021, pp. 405-407).

The demand for increased flexibility has been a driving force behind the evolution of AMR, expanding their role far beyond basic navigation capabilities. While AGV are often characterized as computer-controlled, wheel-based load carriers primarily designed for repetitive transportation tasks, devoid of onboard operators or drivers (Le-Anh, De Koster, 2006), AMR offer a wide array of services beyond mere transportation and material handling operations. They can engage in tasks like patrolling and collaborative activities with human operators. Coupled with their autonomous decision-making capabilities, these mobile platforms present highly adaptable solutions.

The autonomy of AMR implies a constant need for decision-making, taking into account the prevailing rules and constraints within their operating environment. A significant challenge arises from the absence of a human supervisor who possesses an intimate understanding of the system's limits. Consequently, AMR must autonomously monitor their own state, identify potential system faults, and respond appropriately.

The hardware and control software of AMR enable not only advanced navigation and object recognition but also object manipulation within unstructured and dynamic environments (Hernández et al., 2018). These advancements have ushered in a shift toward decentralized decision-making processes. In contrast to AGV systems, where a central unit governs key decisions such as routing and dispatching for all AGV, AMR can independently communicate and negotiate with other resources, including machines and systems such as enterprise resource planning or material handling assessment and control software, allowing them to make

decisions autonomously. This shift reduces the reliance on centralized, external control (Furmans, Gue, 2018). Industrial robots have undergone a transformation, shifting from robust but immobile machines to advanced mobile platforms that can cater to a wider spectrum of automation requirements. These mobile platforms, known as AMR, rely on sensor feedback to navigate their surroundings (Siegwart, 2011). This stands in stark contrast to the traditional AGV, which are constrained to predefined paths employing methods such as magnetic/electrical wires, inertial navigation, optical sensors, or infrared sensors (Lasi et al., 2014).

What sets AMR apart is their heightened level of built-in intelligence, enabling them to identify obstacles in their path and autonomously recalibrate their route to reach their destination (Loganathan, Ahmad, 2023). The overarching goal of decentralized decision-making in AMR is to enable dynamic responsiveness to changes in demand and environmental conditions while allowing each vehicle to continuously optimize its operations. Due to their impressive efficiency and cost-effectiveness, AMR have found applications across various industries. They are now considered a pivotal component of the 'Industry 4.0' concept, contributing to the realization of smart factories and self-organizing systems.

## 3. Methods

The choice of a case study as a research method was motivated by the desire to empirically test the functionality of AMR in a real business environment that has implemented such a solution. The subject of this case study is a selected 3PL (third-party logistics) provider. The chosen 3PL company is one of the leading logistics service providers in the world, specializing in offering comprehensive warehousing solutions and VAS. With its many years of experience in the global market, the company is renowned for delivering high-quality services that assist clients in optimizing their supply chains. The firm provides warehousing solutions tailored to the needs of each client, regardless of size or industry sector. Its modern warehouses are equipped with advanced technologies, ensuring efficient goods management and rapid product flow. Besides standard warehousing services, the 3PL company also offers a broad range of VAS that add value to a client's products at various stages of the supply chain. These services include, among others, assembly, labeling, packaging, and other specialized solutions tailored to the individual needs of clients. Collaborating with such a logistics service provider allows businesses to focus on their core operations, while all logistics-related matters are entrusted to experts with years of experience in the industry.

The described case pertains to the use of AMR in warehouse management for non-value-added processes, specifically processes associated with the handling of empty pallets in the warehousing sector. In this case, two AMR-type robots are used. The first AMR performs two types of operations. The first type involves picking up empty pallets from the drop-off area of the AS/RS (automated storage & retrieval system) module and transporting them to the pallet sorting area. The second type is associated with taking the empty pallets from the sorting area and transporting them to the pallet retrieval zone for the AS/RS module. The general flow logic is presented in figure 2.

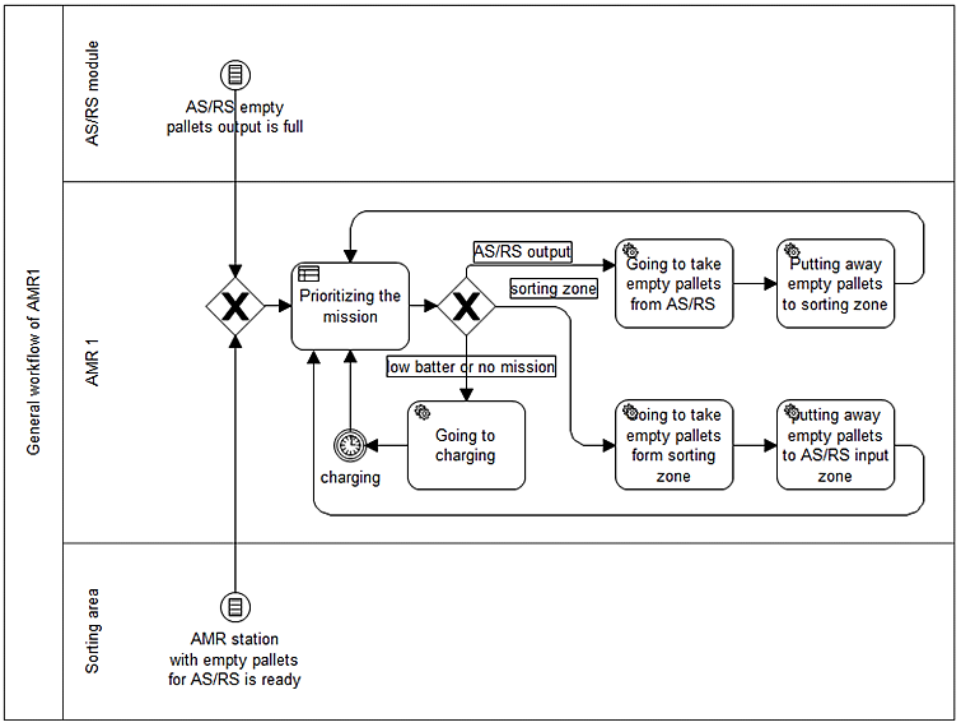


**Figure 2.** General workflow of AMR1.

Source: Own study.

Depending on the situation, following established business rules related to the cost-effectiveness of performing operations and the current location of the robot, it receives missions that have appropriate priorities in the action hierarchy. The second robot (AMR2) also operates on empty pallets, where empty pallets are allocated either to the transit module or to one of the two other modules available in the warehouse, or, when the robot receives such information, it also retrieves pallets post-regeneration and transports them to other warehouse modules. In this case, a hierarchy of actions is also established, similar to the previous case, and the robot's operation is interrupted in the event of a low battery level.

The data used for analysis came from data collected from a system integrated with a WMS (warehouse management system) that recorded the work of the AMR robots. The scope of the data adopted for analysis spans 6 months, and the displayed results are calculated over such a warehouse operating period.

## 4. Results

In the conducted case study, the performance of two AMR robots was measured. Data was collected from the last 6 months of the robots' activities in the warehouse management area. Initially, a calculation was made of the breakdown of individual activities generated by the robots (figure 3). The activities were divided into durations of:

- Productivity, when the robot is involved in moving empty pallets.
- Charging time, when the robot is charging its battery and cannot perform other tasks.
- Other, related to tasks such as setup or service work.
- Anomalies, when the data sent to the IT system by the AMR was incorrect, complications arose in the robot's operation, or when tasks assigned to the robot had to be abandoned.
- Not used – ready for action, when the robot's battery level was sufficient for a task, but none was available.

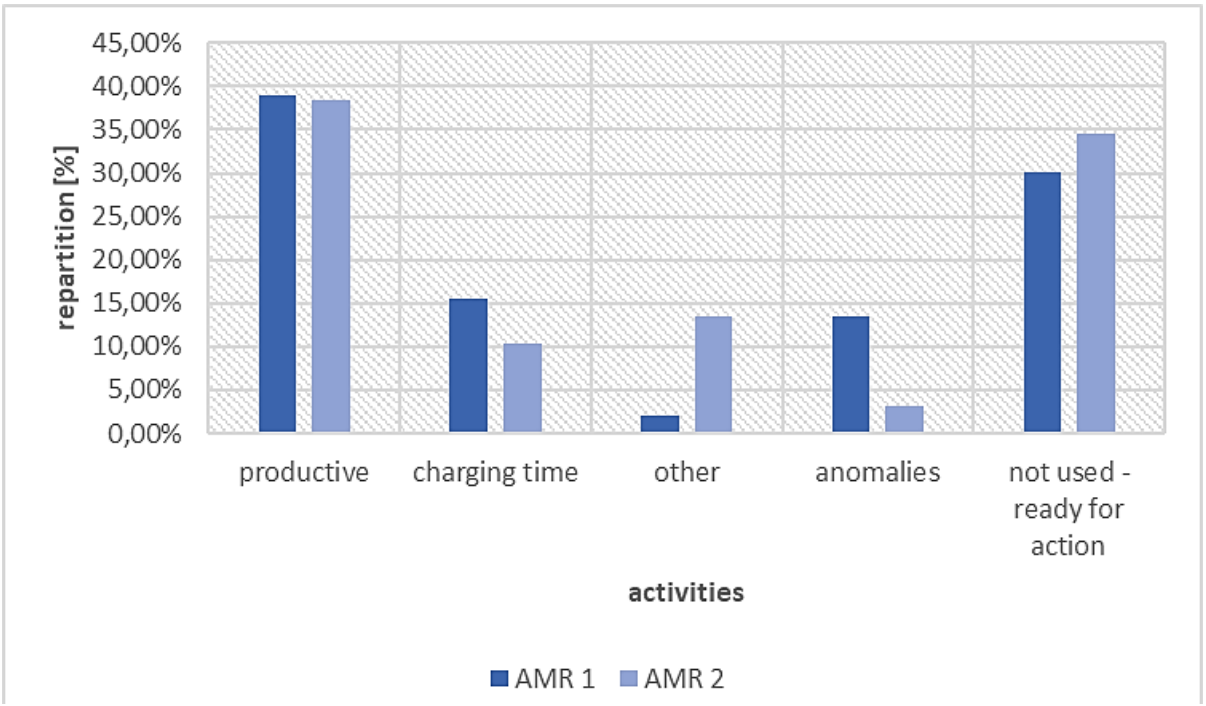


**Figure 3.** AMRs' activities repartition.

Source: Own study.

From the comprehensive analysis conducted, it was observed that both robots, AMR1 and AMR2, had substantial intervals during which they were ready and operational but had no assigned tasks. To delve into specifics, for AMR1, this idle or ready state without a task made up roughly 30% of its entire operational time. On the other hand, AMR2 had a slightly higher percentage at around 35%. Such statistics imply that the robots are currently not operating at their full potential or capacity. In fact, they have a significant bandwidth to manage more tasks, suggesting that if there's a future uptick in operational requirements, these robots would be well-

equipped to handle them. This scenario of the robots being ready for tasks but not having any, particularly in the context of a warehouse setting, speaks volumes about the warehouse management's efficiency and robustness. It appears that the management has effectively developed a system that ensures there's a buffer or a resilience factor, especially when it comes to handling tasks related to empty pallet manipulation. This resilience can be crucial in times of increased demand, ensuring that the system can handle unexpected surges without any hitches. For a more detailed breakdown of the types of tasks that AMR1 has been handling, Figure 4 provides a clear representation. This figure maps out all the tasks that AMR1 undertook in the past six months, giving insights into its operational patterns and distribution of tasks.

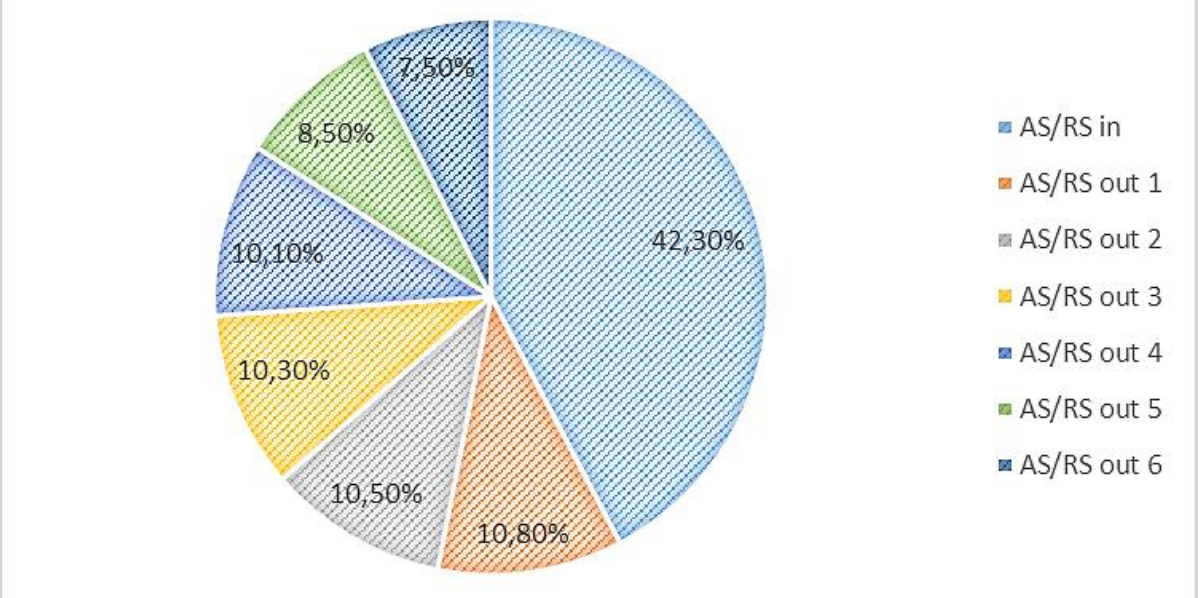


**Figure 4.** AMR1 tasks repartition.

Source: Own study.

From the in-depth analysis undertaken, a noteworthy observation regarding AMR1's operations emerged. It was seen that AMR1 is predominantly engaged in operations associated with retrieving empty pallets from the AS/RS output modules, with this activity accounting for approximately 57% of its tasks. In contrast, the task of transporting these empty pallets back to the AS/RS input modules made up a smaller fraction of its operations. However, it's essential to highlight that this disparity in percentages is not overly pronounced or significant, implying that the robot isn't overly biased towards one operation over the other. A further interesting observation from the analysis is that, when we delve deeper into the types of operations AMR1 performs at various AS/RS output points, we find that there's a remarkable consistency. AMR1 seems to execute a nearly equal number of operations across all available AS/RS output modules. This pattern strongly suggests that the workload distribution for AMR1 has been well-thought-out and optimized, leading to a balanced operational approach. Such a balanced distribution is indicative of efficient warehouse management practices, ensuring that no particular module or point is overly stressed or underutilized. For a comparative perspective on robotic operations, Figure 5 provides a visual representation of the tasks carried out by AMR2.

This visual breakdown can offer insights into how AMR2's operations stack up against AMR1, potentially highlighting any operational trends or patterns specific to that robot.

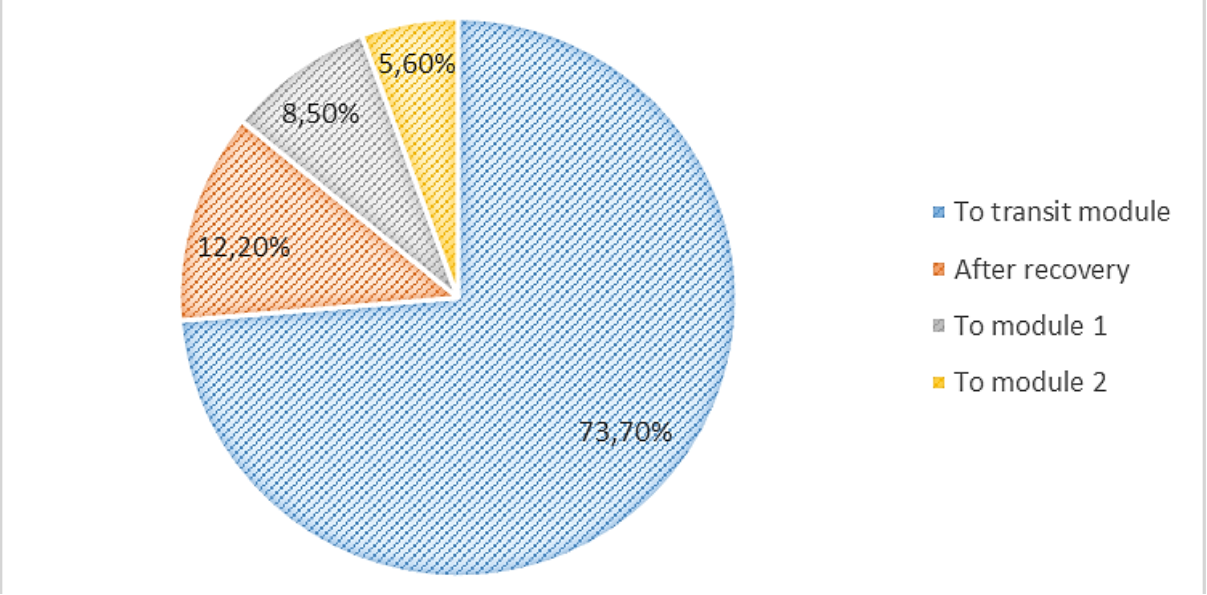


**Figure 5.** AMR2 tasks repartition.

Source: Own study.

In a detailed assessment of AMR2's activities, a distinct operational pattern emerges. A significant portion of its tasks, specifically over 70% within the last six months, is dedicated to the movement of empty pallets to the transit area. This high percentage underscores the importance and priority of this task in AMR2's list of duties. Such a focused approach towards a single, primary operation hints at the strategic significance of this task in the overall warehouse workflow. While this dominant task occupies the majority of AMR2's operational bandwidth, it's important to note that the robot is not solely limited to it. There are other tasks that AMR2 undertakes, albeit with a lower frequency. However, in the grand scheme of things, these tasks are considered secondary or incidental. Their sporadic nature suggests that they might arise due to specific circumstances or unique requirements and are not part of the robot's routine functions. For a broader perspective on how AMR2's operations compare with another robot in the same environment, figure 6 offers valuable insights. This graphical representation breaks down the number of operations executed by both AMR1 and AMR2, distributed across different days of the week. By examining this, stakeholders can gain a clearer understanding of the operational rhythm and consistency of these robots throughout a typical week, identifying peaks, troughs, and potential areas of optimization.

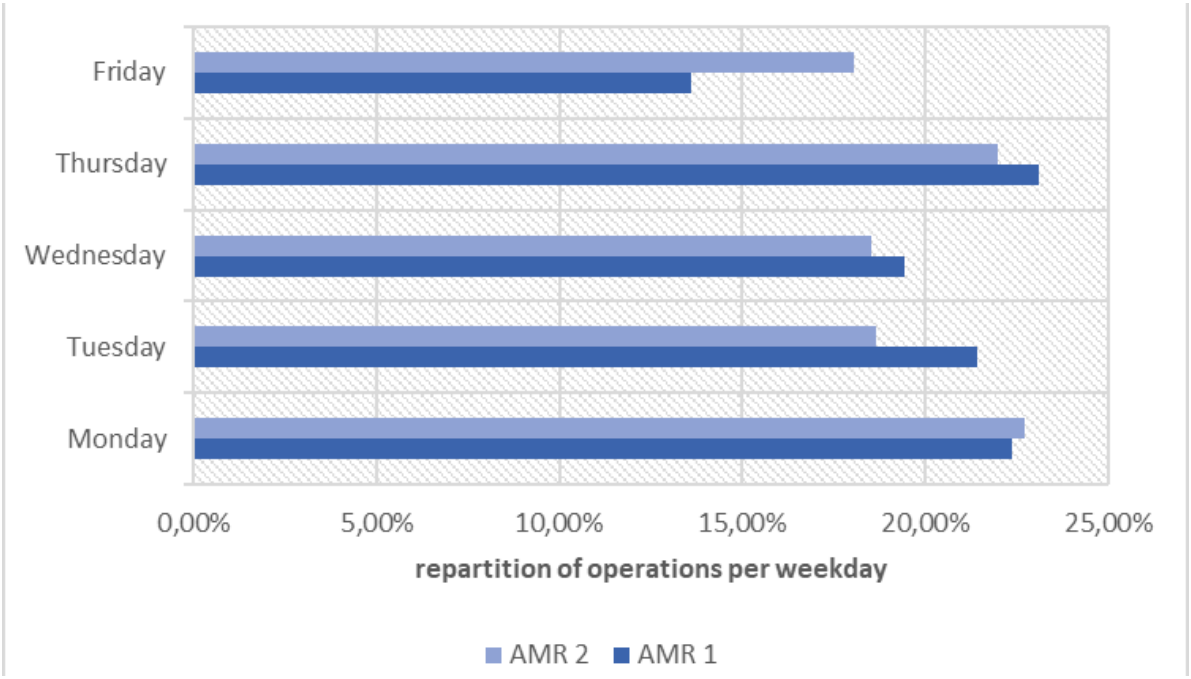


**Figure 6.** Repartition of operation per weekday.

Source: Own study.

As seen in the illustration, both robots exhibit irregular work patterns throughout the week. This inconsistency primarily stems from the fluctuating demand for their services. This variability provides opportunities and a foundation for more flexible planning of their tasks and for expanding their operational scope within the logistics operator's warehouse management. Figure 7 showcases the operational costs of the AMR robots in the studied case, compared to the costs generated by traditional forklifts operated by human personnel.

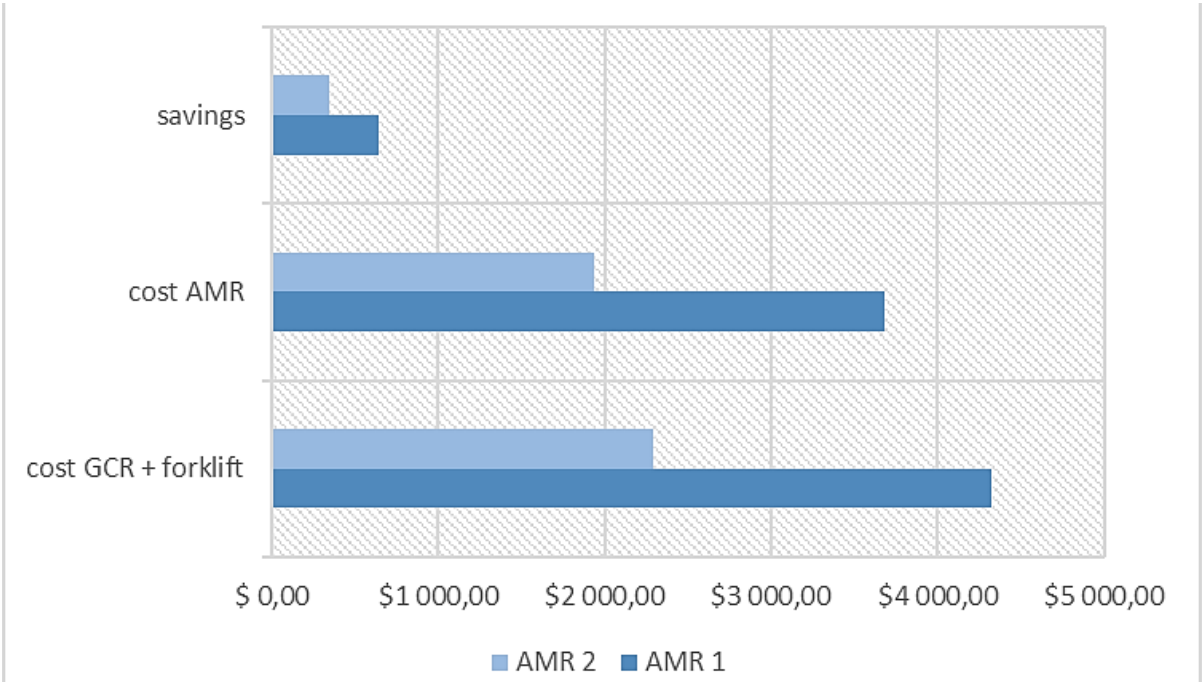


**Figure 7.** Average monthly costs & savings comparision.

Source: Own study.

The costs and savings presented are averaged monthly values based on data from the last six months. The GCR (general cooperation rules) costs are associated with costs set by the logistics service provider, standard task execution times, human labor expenses, as well as the costs of using, operating, and charging a forklift. AMR costs include the robot's operational costs and energy consumption costs related to its charging. As indicated by the six-month observations, even when the AMR robots are not utilized to their full potential (a significant portion of their time was on standby, ready to undertake a task without having a mission they could execute), automating such processes results in cost savings.

## 5. Discussion

The results of our study suggest that both machines, AMR1 and AMR2, are not being fully utilized in the current warehouse configuration, operating at only about 65-70% of their potential. Such long periods of inactivity might reflect various factors. On one hand, this might result from the robots being introduced with an anticipated higher workload that has not yet materialized. On the other hand, it's worth considering the efficiency with which these robots complete their tasks - it is possible that they finish them faster than their human counterparts, thus having more downtime. This is corroborated by studies already found in literature, e.g., by Konstantinidis et al. (2022), Guérin et al. (2016), and Chen et al. (2020). Analyzing the benefits derived from automating non-value-added processes, such as handling empty pallets, allowed the study to uncover significant potential cost savings. An important aspect here, however, is the prioritization of tasks for these robots, which currently experience substantial idle times. The topic of setting robot work priorities in warehouses is a compelling research subject discussed in studies like Selmair et al. (2020) and Hmidach et al. (2020). Automating these tasks not only frees up resources but also reduces the chances of errors, ensuring smoother and more efficient operations. The fact that even underutilized robots can lead to cost savings, as shown in our study, speaks to potential benefits. Apart from costs, service quality, speed, and reliability also experience significant improvements. In light of these findings, a debate could be started on whether the autonomy of processes that don't directly add value might seem like overinvesting. However, gains related to efficiency, potential scalability, and benefits from future-proofing argue for such investment. The issue of substantial AMR investment costs, which must be compared to operational savings, is discussed in studies like Pugliese et al. (2022) and Žulj et al. (2022). Warehouses, especially those managed by 3PLs, are tasked with diverse operations with fluctuating demand, and such flexibility might be better managed with autonomous systems than manual ones. This study has provided key insights, but like any study, it has its limitations. The biggest limitation is focusing exclusively on a specific 3PL provider. While this offers depth, the findings might not be universally applicable across all warehouses

or industries. Moreover, the study was conducted over six months, which might not capture all seasonal fluctuations or potential operational changes.

Future research could examine a broader spectrum of 3PL providers and extend the duration to account for year-round activity. Research could also focus on other non-value-added processes to assess whether the benefits observed during empty pallet handling also extend to other operations. Another intriguing direction would be a more detailed examination of the AMR decision-making algorithms for further utilization optimization. The autonomization of non-value-added processes seems promising for the logistics sector, offering both operational efficiency and cost savings. With advancing technology and growing pressure for faster and more efficient delivery, such automation is likely to become the norm rather than the exception.

## 6. Conclusions

Both AMR1 and AMR2 robots, though not utilized to their full potential, were found to have considerable operational bandwidth. This implies the potential for increased workload, if and when required, without the need for additional investment. Despite the robots operating below their capacity, there were notable savings when compared to traditional human-operated forklift methods. This implies that even partial autonomization can lead to cost benefits. The study provided detailed insights into how tasks were distributed amongst the robots. For instance, AMR1's balanced task distribution across various AS/RS output modules signifies well-optimized warehouse management practices. In contrast, AMR2's operations were more focused, pointing to its strategic role within the warehouse. The robots' ready states, even during idle times, underscore the resilience and flexibility embedded in the system, suggesting a robust buffer for unexpected surges in operational demands. The most significant being its focus on a single 3PL provider, which might not be representative of the broader industry. While the findings are deep, they might not necessarily be widely applicable. Additionally, the six-month study period may not capture the entire spectrum of seasonal variations and operational changes.

This research contributes to the field of management sciences. By delving deep into the nuances of autonomization within the logistics sector, the study offers valuable insights for practitioners, especially those in warehouse management. The data-driven approach provides a sound base for future research, be it in expanding the scope to other 3PL providers or in analyzing other non-value-added processes. Autonomization, especially of non-value-added processes, presents a compelling proposition for the logistics sector, offering enhanced operational efficiency and significant cost savings. As the realm of management science continues to evolve, leveraging technology to optimize and enhance processes will be paramount, and this research stands as a testament to such an evolution. However, presented

case study focuses only on one 3PL so in the future the research should be expanded. Research on the larger sample could provide the results which could strongly contribute to the literature that assists managers in the decision-making process.

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# STUDY OF CULTURAL ORIENTATIONS AMONG UNIVERSITY STAFF

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**Introduction/background**: Organizational culture is manifested in ingrained values, attitudes, normative behaviors, aspirations, and needs. For the shaping of effective employee development processes and efficient human resource management processes, active engagement in organizational activities and a sense of identity along with the values characteristic of the existing organizational culture are important. Organizational culture is one of the more significant phenomena directing behaviors of people in various types of organizations, including higher education institutions.
**Aim of the paper**: The aim of the article was to analyze the changes that have occurred in the perception of university organizational culture over a span of 6 years, in the arrangement of perceived and preferred culture. The text compared two time perspectives; the first study took place in 2016, the next in 2022.
**Materials and methods**: The research was conducted using the Cameron-Quinn questionnaire, among employees of two private universities. The questionnaire was distributed directly to respondents or sent by email.
**Results and conclusions**: In the arrangement of perceived culture in both study periods, a hierarchical approach dominates, indicating the subordination of employees to the development strategy of the university, the level of choices for an adhocratic orientation has slightly decreased, the arrangement of clan indications has practically not changed, which means a lack of predisposition to building advanced forms of group work, whereas the perception of organizational culture as a market has increased, meaning that there is a shift towards the entrepreneurial university. In summary, it can be observed that there is a need to focus on changing the current delegation of authority towards partial decentralization and autonomy of academic and teaching staff, for functioning in executive teams. Such an approach provides an opportunity to build overlay organizational structures of a task or project type, depending on the needs, which will strengthen the position of the university in the external environment.
**Keywords:** organizational culture, university culture, management of university organizational culture, perceived and preferred culture.

## 1. Introduction – Definitional Aspects of Organizational Culture

Organizational culture is one of the more significant phenomena directing behaviors of people in various types of organizations, including higher education institutions. Universities differ from each other in organizational culture, which in turn conditions the ability to adapt and respond to changes taking place in the educational market at the higher level.

In simple terms, organizational culture defines social norms and value systems that stimulate employees. However, many different definitions of organizational culture are identified in the literature. Kroeber and Kluckhohn argue that organizational culture "consists of patterns, both explicit and implicit, acquired by behaviour and transmitted by symbols, constituting the distinctive achievements of human groups, including their contributions to artifacts; the essential core of culture consists of traditional (i.e., historically delineated and selected) ideas, and especially the values associated with them; cultural systems may on one hand be recognized as products of actions, but on the other hand, they can be perceived as elements that condition further actions" (Kroeber, Kluckhohn, 1952). A more synthetic definition describes organizational culture as "a set of values, traditions, aspirations, beliefs, attitudes, which are the essence of everything that is done and thought in an organization" (Kuc, 2008).

In turn, A. Schein proposed a definition stating that organizational culture is: "A pattern of basic assumptions - invented, discovered, or developed by a given group as it learns to cope with its problems of external adaptation and internal integration - that have worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems" (Schein, 1985). Furthermore, Schein points out that organizational culture is determined by three components: basic assumptions (the organization's relationship to its environment, time, and space; the nature of humanity, professional activity), norms and values (the system of commands and prohibitions, ethics of conduct, service standards), and artefacts (physical – dress, organization's decor, logo; behavioural – the way people address each other, rituals; linguistic – linguistic formulas, stories, myths). For the purposes of the article, the definition by Cameron and Quinn is adopted, seeing culture as: "unwritten, often subconsciously adhered to principles that fill the gap between what is written and what actually happens. Culture concerns shared views, ideologies, values, beliefs, expectations, and norms" (Cameron, Quinn, 2003). Cameron and Quinn identified 4 types of organizational culture: clan, adhocracy, hierarchy, and market.

**Table 1.**
*Types of organisational cultures according to Cameron and Quinn.*

| Type of culture | Characteristics |
|---|---|
| Clan oriented culture | The place of work is perceived as a friendly place, people work together willingly, team work is appreciated. Supervisors act as advisers, teachers and they care about their employees. Organisations are able to survive due to their employees' loyalty and attachment to tradition. |
| Adhocracy oriented culture | It is dynamic, entrepreneurial and creative. In this culture risk-taking and experimenting are a daily occurrence, people are not afraid of taking up challenges and leaders are innovative and are not afraid to introduce changes and experiment with new ideas. |
| Hierarchy oriented culture | It is characterised by integrity and gradation of subordination relations. The scope of work and expected behaviours of people are defined in very seriously treated procedures and regulations. Organisation's integrity is ensured by the emphasis on formal rules and regulations. Coordination and systematisation are a challenge for leaders, strong emphasis is put on efficient functioning of the organisation, following time schedules and gradual, continuous cost reduction. |
| Market oriented culture | This model focuses on results and task implementation. People are driven by ambition and orientation towards goals whereas leaders are ruthless, demanding and focused on competitiveness. Organisation's integrity is ensured by expansion and desire for victorious competition. |

Source: own analysis based on (Cameron, Quinn, 2003).

Summarizing the above definitions, it can be said that organizational culture defines social norms and value systems that stimulate employees. Organizational culture also encompasses shared meanings and symbols, ways of behaving, cognitive patterns, the proper organizational climate, and management style (Kiwak, 2016).

Organizational culture fulfils various functions within an organization by delineating its boundaries, providing a sense of distinctiveness to its members, shaping the framework of the organization's identity facilitating employees' engagement, defining norms of behaviour, allowing better control and shaping of members' behaviors, and enabling the integration of organization members (Dohn, Łyp, 2017).

Organizational culture is shaped by many factors, including the national culture in which the organization operates (Hofstede, 2007).

Determinants of organizational culture formation found in the literature can be divided into 4 groups:

1. Characteristics of organization members – it is people who create the organization. Every employee entering the company brings their own values, customs, communication style, and conflict resolution methods, has specific education, uses a specific language, etc.
2. Characteristics of the organization itself – the history of the organization, its vision of operation, goals, management style, organizational structure, or adopted communication method significantly matter.
3. The state of the environment – i.e., the adopted national culture in which the organization operates, legal regulations, economic situation, state system, political situation.
4. The nature of activity – the profile of activities, industry, scale of operation, or degree of cooperation with other entities.

In the case of higher education institutions, the impact of these individual elements on organizational culture has its specificity, which results from the character of their market-social activity.

Among the environmental features of universities, particular importance is given to: how the university is perceived by the social environment; the values attributed to universities as entities with a certain prestige; the average power distance in Polish national culture, reflected in the mutual relations between students and staff as well as among employees of different academic degrees and functions; regulations of the Ministry of Science and Higher Education, which impose the framework for the functioning of universities; unfavourable demographic changes - low birth rate and aging society, which force competition for students; increasing influence of the labour market and business entities, requiring universities to adopt a more flexible approach to education.

Regarding organizational characteristics, significant aspects include: the mission and objectives of the university, where, unlike in business, the main goal is not profit but the realization of statutory assumptions; the history of the given university - long-standing operation in the market of public universities is on one hand their strength and distinction, on the other hand, it may cause difficulties in quickly adapting to changes; established patterns of mutual references among employees of different degrees and academic titles; hierarchical structure, top-down management style, and significant dependence on central authorities' decisions; specific communication system with employees.

Nature of activity: The specificity lies in offering services by universities that are inherently intangible and related to the persons performing the service, thus heterogeneity is manifested by a large dependency of the service quality on the person providing it. Universities try to introduce uniform education standards, but considering the specificity of lecturers' work, it is difficult to unify behaviours; changes are occurring in the way services are provided, with increasing opportunities for offering services indirectly – e-learning platforms; accessibility to partnership programs is growing, which allows staff and students to go to foreign universities; the grant system that enables conducting research with various entities, including internationally; a strong emphasis on research and commercialization of research results, shifting the focus from teaching to scientific activity.

Organization Members: In the case of universities, the characteristics of members will largely be determined by the profile of the university (technical, humanities, arts, etc.). At technical universities, men still dominate both in the power structures and among academic and teaching staff, while administration is overwhelmingly female. This is not only due to the internal conditions of the organization but also the prevailing socio-cultural system (Koszembar-Wiklik, Krannich, 2016).

Organizational culture, by giving meaning and direction to individual activities, allows for the achievement of organizational cohesion, eliminates states of uncertainty, but can also create an effective barrier to changes, especially when changes violate the existing status quo or when they force a violation of culturally established behaviour patterns.

Significant cultural change cannot be accomplished if it is led by only a handful of people at the top of the organization. Cultural change leaders are initiators who create meaning and set the pace, challenging existing patterns and opening new perspectives. However, a transformation at various levels of the organization is required for change to occur. Cultural changes are not always driven by top management. Individuals at every role and position can initiate cultural change efforts (Boonstra, 2013; Marcisz, 2017). Different generational characteristics may be significant for organizational culture (Opalińska, 2018). This is particularly evident in universities, where representatives of different generations are present. Changes in organizational culture can result from both generational differences among staff and the new characteristics of the student generation. Generational differences mean that a certain flexibility in approach to norms is increasingly important, while at the same time trying to retain certain established patterns among older employees.

## 2. Research Assumptions

The aim of the research presented in the article is to determine selected cultural orientations and, based on them, identify the dominant type of organizational culture of higher education institutions in the arrangement of perceived and preferred culture. The research was conducted in two private universities. The authors also aimed to compare the results of studies from 6 years ago (involving both public and private universities) with the current research. The comparison concerned cultural models in private universities (Koszembar-Wiklik, Krannich, 2016). In the current research, only respondents who are academic teachers employed at a private university were considered. The subject area of the research is the analysis of the relationship between perceived and preferred organizational culture and the adopted forms of communication in various functional contexts. The method used in the research was a direct and online survey. The tool used to study organizational culture was the Cameron-Quinn questionnaire. The study involved 57 lecturers from two private universities. The universities have a similar teaching profile in the field of management and quality sciences. In the 2016 study, 32 lecturers from a private university participated. The research was conducted based on the OCAI (Organizational Culture Assessment Instrument) questionnaire, developed for the purpose of determining types of organizational culture by K.S. Cameron and R.E. Quinn. An attempt was made to generalize the obtained results and their graphic presentation. From the point of view of the usefulness of measurement methods, the definition of

organizational culture by Cameron and Quinn, which they describe as a set of values considered obvious, common expectations not spoken about, is relatively the most popular among researchers. According to this definition, organizational culture reflects dominant views, defines employees' sense of identity, and provides undocumented, yet essential assumptions for behaviour in the workplace. Undoubtedly, the widespread acceptance of this definition has been facilitated by the fact that the Cameron-Quinn team developed a comprehensive, yet uncomplicated tool for studying culture, namely the OCAI questionnaire. This questionnaire is based on the assumption that although organizational culture is specific to each organization, in this diversity, some patterns can be found that are common or at least similar, allowing for the identification of certain characteristic types of cultures. Such typologies have been recognized by practitioners, allowing for a quick and relatively accurate identification of a company's culture. Cameron and Quinn proposed to distinguish based on a coordinate system four main types of culture: adhocracy, market, clan, and hierarchy. The dimensions – axes create quadrants, each describing a different set of organizational effectiveness indicators defining what is good, advisable, or right. These dimensions are opposites or compete with each other. The pairs of opposing values are: flexibility (typical for task culture) and stability (hierarchy culture) as well as an internal focus (clan culture) and an external position orientation (market culture). The universality of these dimensions and the capacity of the quadrants are associated with the type of culture that represents the basic assumptions, views, and values.

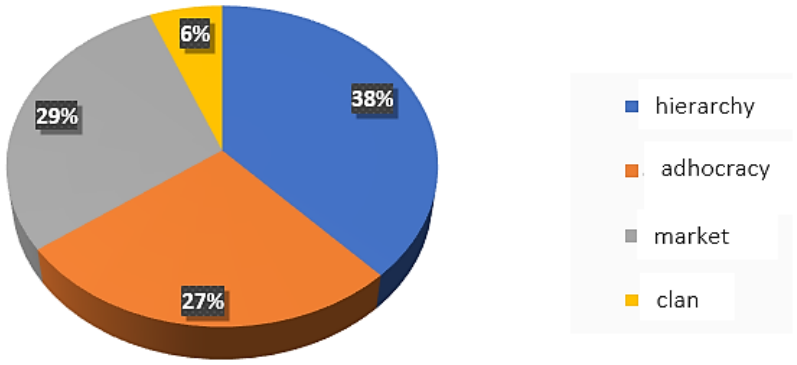


**Figure 1.** Perceived cultural orientations in the studied private universities.

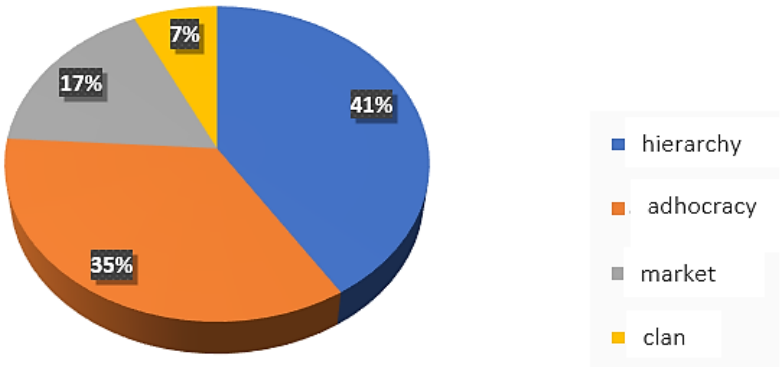


**Figure 2.** Perceived cultural orientations in the study of a private university 2016.

In both study periods, a hierarchical approach dominates – 41% (2016) and 38% (2022), signifying the subordination of employees to the university's development strategy and operational management models. The level of adhocratic orientation choices slightly decreased from 35% to 27%, which may signal a lesser focus on innovation and creative employee engagement. This could directly result from the decreasing participation of private universities in grant systems and participation in dedicated European Union funds. The market arrangement has strengthened to a greater extent, where the development thinking paradigm is associated with reflections on relationships with university stakeholders and building one's position in a dynamically changing environment. Such a choice may also indicate a fuller orientation towards students' needs in terms of educational programs and adjusting teaching directions and specializations to market demand. The arrangement of clan indications has practically not changed, decreasing from 7% to 6%. This means there is still a lack of predisposition to build advanced forms of group work. Group work, understood as the ability to collectively carry out complex scientific projects and collectively prepare a comprehensive system of matrices and educational programs, remains not a priority. There is still a dominant attitude of subordination to university authorities, and loyalty to the organization does not have the character of a direct sense of long-term bonds with the university, in the sense of great opportunities for personal development, treated as a long-term benefit in the outlined, personal career path of academic and teaching staff. Teamwork, multi-faceted participation in university activities, and a general consensus on the main development goals still do not constitute priority choices in the actions of the studied universities, both in the long-term and short-term perspective.

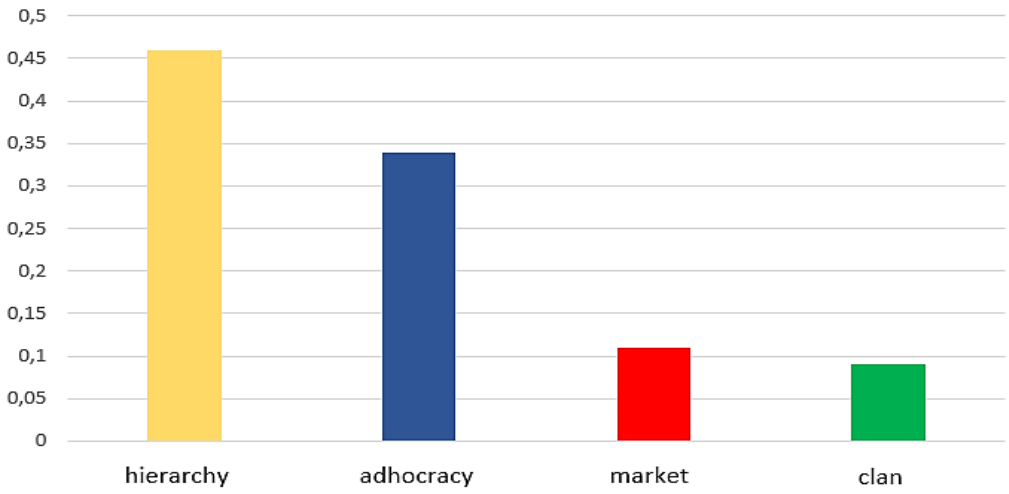


**Figure 3.** Preferred cultural orientations in the study of a private university 2016.

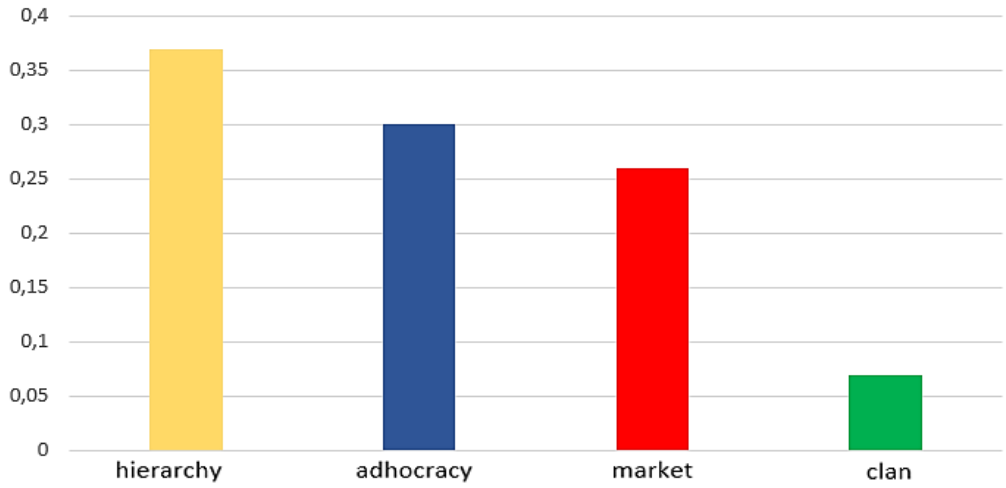


**Figure 4.** Preferred cultural orientations in the study of a private university 2022.

In the current studies, the preference for hierarchy still prevails, yet it has significantly decreased from 46% to 37%. This may indicate a change in employee attitudes, where the dominant role of hierarchical supervision and efficient execution of commands are no longer seen as strongly as an element of fitting into the work team and shaping behaviours that treat subordination as a condition for being perceived as a valuable individual in the personnel management process.

Adhocratic indications decreased from 34% in 2016 to 30% in 2022. The decline is slight, and there is still visibility of adaptive action possibilities, including greater flexibility and creativity in uncertain, ambiguous situations, where autonomy of choice will be possible despite the uncertainty associated with the excess of information.

There was a significant increase in market orientation (jumping from 11% in 2016 to 26% in 2022), which indicates a desire for much greater adaptation to environmental volatility, which may manifest in:

- The willingness to respond to comments and demands of students regarding the implementation of classes.
- A greater focus on aligning educational programs with labour market expectations.
- The desire to use diversified forms of conducting classes in the educational process (using case studies, gamification, etc.).
- Greater flexibility in creating cooperation between students and conducting additional activities such as scientific clubs.

Market orientations of 9% in 2016 and 7% in 2022 show that employees do not regard full group integration based on the complete well-being of the employee and a "familial" relationship as an important aspect of their personal development. Interpersonal trust cannot be considered sufficient for practicing more modern management methods, such as management by delegation of authority. At the same time, indications in the market and adhocracy areas provide an opportunity to think about greater team integration and building task teams in the

implementation of research projects, also in cooperation with scientific teams from other universities.

## 3. Summary and Conclusions

Organizational culture is manifested in ingrained values, attitudes, normative behaviors, aspirations, and needs. Active engagement in organizational activities and a sense of identity, along with the values characteristic of the existing organizational culture, are important for shaping effective employee development processes and efficient human resource management processes. A platform of shared values creates a kind of informal control mechanism, informing employees about the organization's expectations of them. Strongly established values can positively impact the organization's functioning by selecting the right employees in the recruitment process, then appropriately shaping their career paths, and building individual commitments in competence management and talent management processes. Organizational culture builds a catalogue of less or more formal, but clear to employees, expectations and beliefs shaping the final organizational behaviours.

As a basic recommendation, being a synthesis of analytical thoughts in the area of conducted research, it can be stated that the starting point for the strategic reorientation of universities is building a modified organizational culture. This entails forming new patterns and values, beliefs, and attitudes to develop engaged, pragmatic, and utilitarian employee behaviors from the perspective of the assumptions and directions of the changes being made. In practical, application terms, this means using organizational culture with built-in trust as a stimulator, modifier, and correlative amplifier of behaviours constituting the form of a specific organizational culture, as a tool for stimulating internal activity.

It is clear that there needs to be a focus on changing the current delegation of authority towards partial decentralization and autonomy of academic and teaching staff for functioning in executive teams. Such an approach provides an opportunity to build overlay organizational structures of a task or project type, depending on the needs, which will strengthen the university's position in the external environment. The mental change necessary for the revaluation in organizational culture refers to focusing on long-term processes and their shaping, including the processes of organizational modification, improvement of work organization, and enhancement of individual employees' actions. The change should be incremental, constituted by systematic steps focused on improving the process and collective organizational effort, implemented through conventional, low-cost, well-known methods.

Perhaps it would be advisable to introduce active coaching into training activities for university staff, in terms of solving group problems and building trust in task teams. Coaching can be conducted individually or in teams, allowing concentration on oneself,

on one's reflections and actions, thereby improving the quality of functioning of workgroups and executive teams. Improving internal communication in the university may mean an increased number of meetings and consultations of the university's management with employees, not only as a form of discussion but as constructive conclusions that systematically change internal relations. Knowledge from these meetings should be stored in some report form at the universities.

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# MOTIVATING PROJECT TEAM MEMBERS IN A SELECTED DISTRIBUTION COMPANY

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**Introduction/background**: The process of motivating project team members involves creating the conditions that will increase their commitment to the project, which in turn will translate into the achievement of the set goals. A key element of this process is to recognise the individual needs of each team member and thus provide the right tools and conditions for work. Thanks to an in-depth analysis of the ways in which a project team is motivated in a selected company, it is possible to introduce changes to the current motivation system while ensuring its effective impact on current and future project team members.
**Aim of the paper**: The aim of the paper was to identify and evaluate ways of motivating the project team in a selected distribution company and to develop recommendations for the use of effective ways of motivation.
**Materials and methods**: In this paper, a survey was conducted using an online questionnaire. The survey questionnaire was divided into two parts. The first, the information part, contained five metric questions, while the second, the core part, consisted of nineteen closed questions. The respondents were members of the project team at the selected distribution company.
**Results and conclusions**: The conducted research made it possible to identify ways and sources of motivation available in the analysed company, which in turn contributed to the assessment of the effectiveness of the motivation system. The research also made it possible to develop recommendations for proposed improvements in the way project team members are motivated.
**Keywords:** project management, project team, motivation, incentive system.

## 1. Introduction

In today's world, due to the rapidly changing marketplace, companies are trying to meet the expectations of their customers. The changes that occur require organisations to be able to adapt quickly to the prevailing conditions, and also drive organisations to continuously invest in the development of the entire enterprise as well as its resources. No organisation and no team would be formed and exist if it were not for the people working within it. It is the people who

are the key element in the functioning of any organisation and team and it is they who determine the success of the organisation through their skills and commitment. In today's market, companies find it hard to get skilled and loyal employees and even harder to retain them. Therefore, among all management functions, it is motivation that is presented as the most important, but also the most difficult. Companies are constantly looking for ideas on what and how to motivate their employees so that they become even more committed to their work. With the right motivation, it is possible to achieve better results and also to achieve the organisation's goals through the effective implementation of projects.

The aim of the paper was to identify and evaluate ways of motivating the project team in a selected distribution company and to develop recommendations for the use of effective motivation methods. The paper sought answers to the research questions:

1. What are the specific characteristics of the project environment?
2. What are the motivational factors used in project management?
3. What are the ways to motivate project team members in a selected project?
4. What are the motivational sources of team members in the selected project?
5. What are the recommendations for proposed improvements on how to motivate project team members?

The first part of the paper presents general issues related to the motivation process, defines the concept of motivation and describes the leading theories of motivation. Subsequently, on the basis of the literature study, the basic sources, tools and available motivation systems are detailed. The second part of the paper includes an analysis of the motivation system and tools available in the selected company, together with a presentation and discussion of the results of a survey conducted among project team members. The last part of the paper is devoted to conclusions and recommendations from the analyses.

## 2. Theoretical aspects of employee motivation in project management - selected issues

The chances of success, but also the chances of failure of a project are certainly influenced by a properly selected project team (Kisielnicki, 2011). The essences of a project team, as well as the constant changes taking place in the project environment require managers to have not only knowledge, but also skills and appropriate competencies. In turn, the project team itself should consist of people who bring not only their experiences but also their knowledge and abilities to the job (Klemens, Szewczuk-Stępień, 2018). Correctly selected team members and their working together certainly leads to a better end result, while skilful project team management is necessary at every stage of the project (Prabhakar, 2008).

With effective tools to support motivation, managers are able to use the full potential of their employees, whose work can translate into good company performance. However, motivation alone is not enough, it is still important to motivate the employee himself (Bijańska, Wodarski, 2020). What is the difference between motivating and motivation? R.W. Griffin defines motivating as 'an arrangement of forces that induce people to behave in a certain way' (Griffin, 2020). S. Borkowska defines motivating as the deliberate action and behaviour of employees that reflects their level of commitment and increases performance. (Borkowska, 1985), and Z. Jasinski, believes that motivating is nothing more than influencing employees, in a way that will enable them to achieve their goals, in line with expectations (Mazur, 2013). Motivation, on the other hand, is defined as the willingness to act in order to satisfy one's needs. Thanks to motivation, a person behaves in a specific way that can make it easier for him or her to achieve the desired goal. Therefore, motivation is important for organisations. In addition, it is among one of the most challenging processes that directly affect people's behaviour at work, and thus directly influences the efficiency of their work and the effectiveness of their projects (Sroka, 2017).

With the development of the motivation system, approaches to motivation have distinguished. The first of these, the traditional approach was based mainly on the motivational factor of receiving a salary. Different to the traditional one was the approach from the human relations side, where the assumption was no longer the desire for money, but the desire to be part of the organisation and to influence decisions. Another, more elaborate approach was from the human resources side. Its premise was no longer to supposedly influence decisions, but to actually count on the opinion of subordinates and take their ideas into account. This approach was characterised by putting employees and superiors on the same level (Kisielnicki, 2011). At the turn of many years, approaches to motivation have been constantly changing, with the motivation system now based on three basic theories referred to as content theory, process theory and reinforcement theory (Mazur, 2013). Content theory focuses primarily on the factors that determine what actually motivates people to act. Process theory, on the other hand, focuses on explaining people's behaviour in pursuit of their needs. The last theory, reinforcement theory refers to repetitive human behaviour. This theory can also be referred to as the learning theory, as employees whose behaviour has had a positive effect are bound to replicate those actions in the future, and those whose behaviour has not had the expected benefit will not be repeated in the future. The content-based approach to motivation includes three basic theories; Maslow's hierarchy of needs, the ERG theory and the two-factor theory.

Maslow's hierarchy of needs, identifies a person's basic needs, based on a certain degree of importance. However, before a person strives to satisfy his or her higher-level needs, he or she must have the basic ones provided and satisfied. Maslow classified these needs into five categories called physiological needs, safety, belongingness, esteem and self-actualisation needs (Akpan et al., 2022). The second, slightly different from Maslow's hierarchy of needs, is the ERG theory. This theory assumes a division into three categories, called existence needs,

social contact needs and development needs. It also assumes that motivation takes place in a hierarchical manner with the proviso that a person can be motivated simultaneously by several stimuli. In ERG theory, there is a phenomenon called frustration, which occurs when a need is not satisfied. Consequently, there will be a return behind the drive to satisfy the underlying need (Griffin, 2020). On the other hand, the two-factor theory, authored by F. Herzberg, includes two independent factors that influence the level of employee satisfaction, the so-called mental hygiene factors and motivational factors. The motivation process according to this theory consists of two stages. First, appropriate mental hygiene factors should be provided and these will positively influence the level of satisfaction, then the employee should be properly motivated and achieve job satisfaction (Gostkowska-Dźwig et al., 2021).

The process-side approach to motivation distinguishes between expectancy theory, equity theory and goal-setting theory. The first of these assumes that motivation depends on the strength of the desire and then on the results of fulfilling the desire. According to the idea behind the theory, an employee expects the task he or she is performing to meet the requirements set by the organisation, but also expects to receive an adequate reward for performing the task correctly. On the other hand, the theory of justice, authored by J.S. Adams, assumes that each employee expects to receive fair pay and fair rewards by comparing them with other co-workers. A sense of injustice as well as dissatisfaction with the remuneration received arises in employees who do not understand the remuneration and bonus system currently in place in their organisation (Kopertyńska, 2008).

A recent approach to motivation from the reinforcement side is by B. Skinner. Within this theory, four types of reinforcement are specified, i.e.: positive reinforcement; characterised by the receipt of special rewards for correctly performed work, negative reinforcement, characterised by the lack of receipt of a reward, due to an incorrectly performed task, punishment; used to undermine inappropriate and undesirable behaviour, through the application of punishment, and extinction, meaning the weakening of undesirable behaviour by not being noticed by the supervisor. An employee who does not receive a reward perceives for themselves that their behaviour is incorrect and tries not to replicate previous behaviour.

The main sources of motivation are: security, success, respect for values, the need to know the meaning of the activities carried out, as well as openness to new beliefs and the personal predispositions of each employee (Trocki et al., 2003). Further reflections on motivation have distinguished between the basic types of motivation; intrinsic motivation and extrinsic motivation. Intrinsic motivation is characterised by behaviour that occurs of one's own volition and is influenced by one's own experiences and beliefs. Extrinsic motivation, on the other hand, are actions that are imposed in advance. The result of this behaviour can be rewards or also punishments. This division further distinguishes two types of extrinsic motivation; positive and negative motivation. Positive motivation aims to improve the quality of work and increase the possibility of achieving goals, whereas negative motivation can cause feelings of insecurity among employees (Hysa et al., 2020).

The motivation system requires continuous improvement. It is important to know and correctly select such tools that bring out the best in employees in a natural and effective way and that fit perfectly into the character of the organisation. S. Borkowska divided motivation tools into three basic groups: coercive measures, incentive measures and persuasion measures. Coercive measures require an employee to behave in a certain way; they include orders, prohibitions and commands, which are regulated by various legal norms. Different from coercive measures are incentive measures, the idea of which is to encourage the performance of certain activities in exchange for receiving a reward. The motivated person is more willing to perform the assigned tasks because he or she can get something for himself or herself in return. The most well-known incentives include wage measures such as salaries and non-wage measures such as employee benefits, as well as non-economic motivators, which include professional development. The last group of motivators includes persuasion measures, which are closely related to the intrinsic motivation of each employee. The essential element that distinguishes this motivational measure from the others is the absence of the use of both rewards and punishments (Kacprzak-Biernacka et al., 2014).

The creation of a motivational system in an organisation is linked to many factors, both external and internal. There is no single ideal system, and the main factors influencing the shape of the system include the strategy, culture and organisational structure, the size of the company and its financial situation, the specifics of the business and the competitive environment, but above all the personnel potential of the organisation. The success of the organisation and its employees is considered to be the main objective of creating a good motivational system (in relation to a specific organisation) (Dzieńdziora, 2010).

An important element influencing the success of the project implementation is the continuous improvement of the team, which should depend on the evaluation carried out on the individual project participants. Thanks to these evaluations, it is possible to develop the effective functioning of employees in the team. The literature on the subject distinguishes between two types of employee evaluation - formal and informal. Formal appraisal is carried out at fixed periods of time, e.g. when project milestones are reached. Informal appraisal, on the other hand, involves providing verbal feedback to team members on their progress and performance. Such evaluation communicated in the course of project activities is usually face-to-face and ongoing, resulting in the ability to react more quickly to problems encountered or undesirable behaviour (Kisielnicki, 2011).

In modern organisations, managers are responsible for the engagement of team members. This is because they are the ones who work directly with each other and are therefore the ones who have the most knowledge about their employees. It is incumbent on the manager to know what really motivates and increases engagement among employees. With this knowledge, it is the managers who should develop an individualised approach to motivation, which in turn will increase performance at work (Pierścieniak et al., 2013).

## 3. Data and method

The research subject was a distribution company operating in Poland in the energy sector, employing over ten thousand people. The company has more than 190 distribution facilities, located in all provinces. The main tasks of the project teams established at the company include the development and implementation of projects that enable the effective realisation of the company's strategic objectives. The main objective of the project was to implement a system to support the implementation of the investment process carried out in the company. Both the company's internal resources and the support of an external consultant were used to implement the project. The aim of the study was to identify and evaluate ways of motivating the project team in the selected company and to develop recommendations for the use of effective ways of motivation. In addition, motivational factors and sources available in the surveyed entity were identified. The selection of the research group was chosen purposefully, as the respondents were members of the selected project team in the analysed enterprise. A total of 57 employees from across the country were appointed to participate in the project team, of whom 51 took part in the study. Data was collected using a survey research tool, using an online questionnaire. The survey was conducted in February/March 2023, using the web portal www.forms.office.com and sent directly to the mailboxes of project team members at the selected distribution company. Data was collected using a survey questionnaire, consisting of a total of 24 questions. The first, informational part, contained five metric questions, while the second, core part consisted of nineteen closed questions. The questions were developed on the basis of the literature analysis and with reference to the incentive system in place at the surveyed entity.

Of the total team members, the largest number were employees in the positions of Senior Specialist - 41%, Manager - 33% and Specialist - 16%. The smallest number of employees were employees in the position of Junior Specialist - 10% (Figure 1).

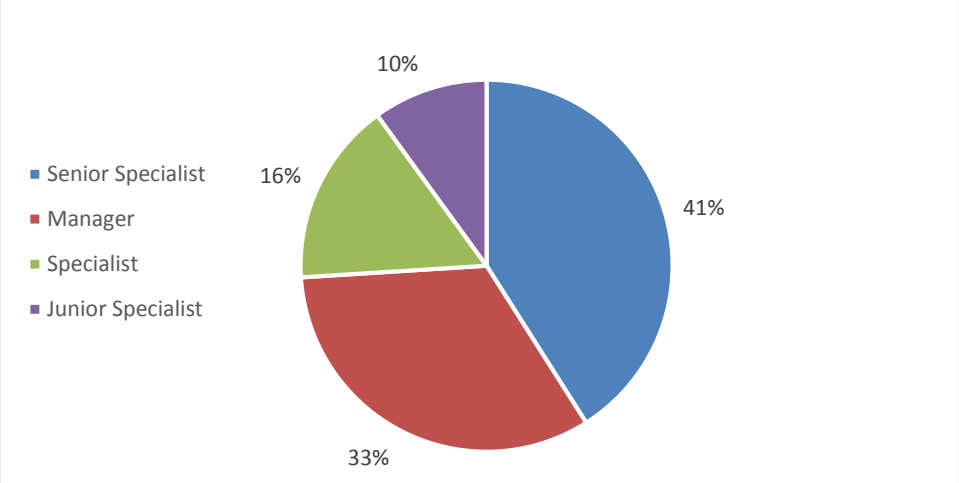



**Figure 1**. Positions held as at the date of the research.

Source: own study.

The respondents were further divided by age group, as well as by length of seniority in the company and the total number of projects in which they were involved. The largest number of project team members, 55%, were employees who were 36 to 50 years of age, 31% were between 26 and 35 years of age, while the smallest number of employees - 14% - were over 50 years of age, and there was not a single person under 25 in the entire project team (Figure 2).

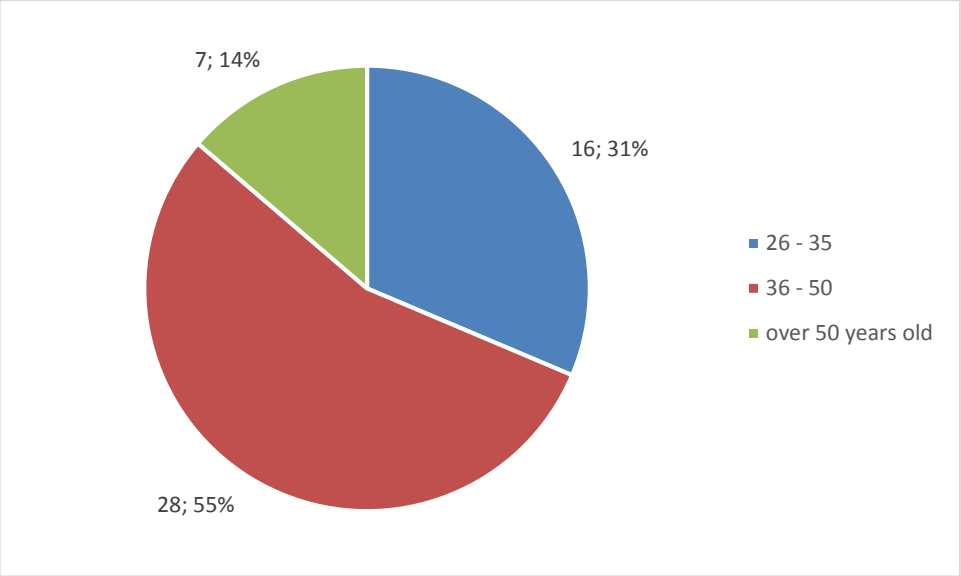



**Figure 2**. Age of respondents.

Source: own study.

The vast majority - 45% - of the project team members were employees with seniority of 11 to 20 years, followed by 29% of employees with seniority of 3 to 10 years, closely followed by 26% of employees with seniority in the company of more than 20 years. In contrast, there were no employees on the project team with less than 2 years of experience (Figure 3).

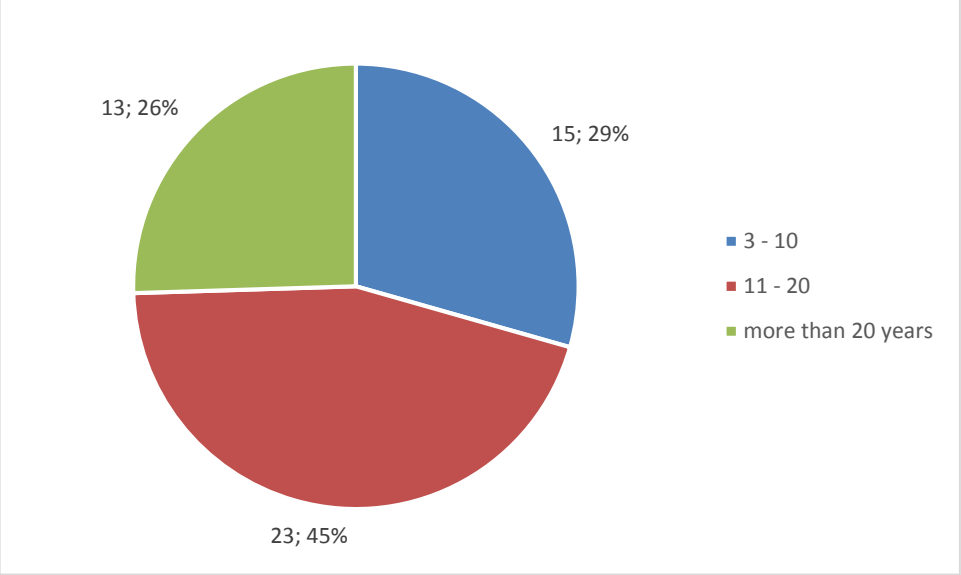



**Figure 3**. Project team members' seniority.

Source: own study.

Next, 41% of employees declared that they had been involved in between 3 and 5 projects. In contrast, 29% of employees declared that they had participated in less than 2 projects, 24% of employees declared that they had participated in between 6 and 10 projects and only 6% of employees declared that they had participated in more than 10 projects (Figure 4).

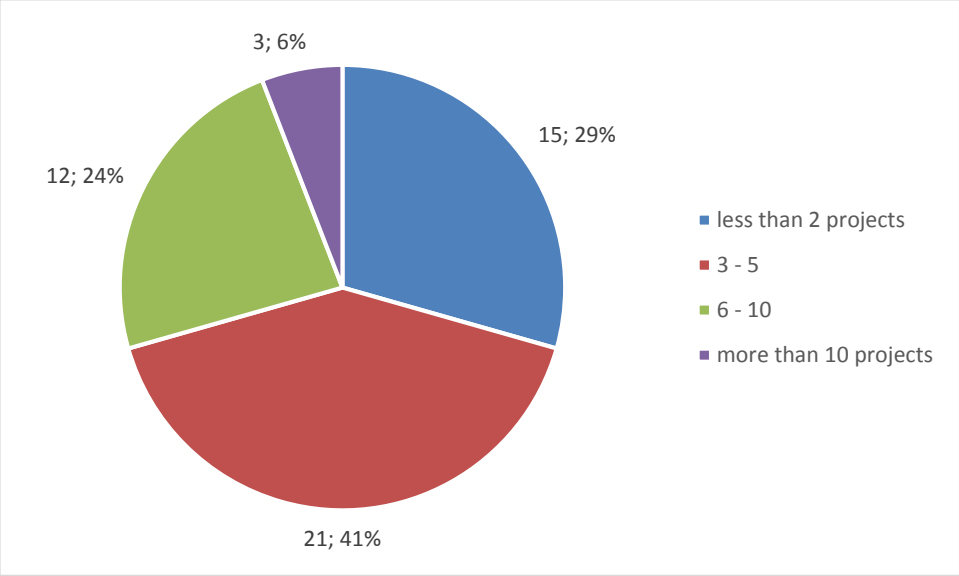
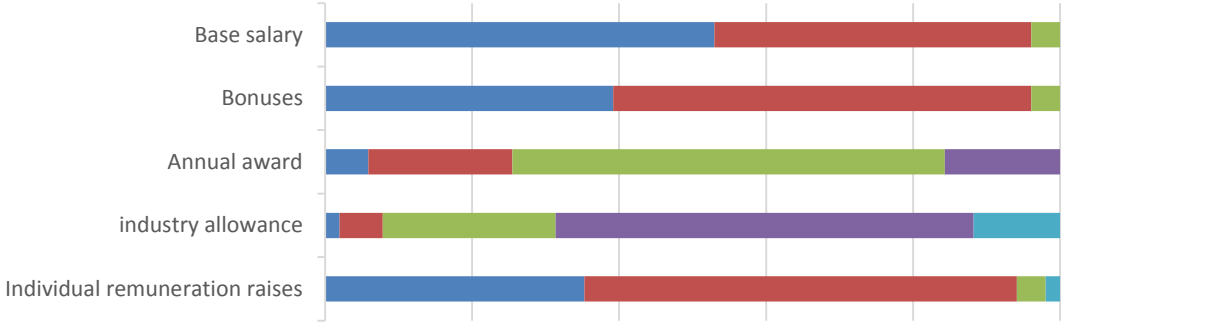



**Figure 4**. Total number of projects carried out by members of the project team.
Source: own study.

## 4. Motivation system in project management - results of an empirical study

As a first step, the respondents determined their knowledge of the ways to motivate project team members available in the company and assessed the effectiveness of the motivation system. As many as 98% of the respondents are familiar with the available means of motivation, while 69% of the respondents rated the system as satisfactory. Next, their overall degree of work motivation was determined; 63% of the respondents felt highly motivated to work, while 39% described their degree of motivation as 'medium' and 'low'. The next questions referred directly to their level of satisfaction with their pay; 78% of respondents confirmed that they were satisfied with their pay and just under 22% denied this, however, for 96% of respondents, the level of pay has an impact on their level of commitment to work.

The research carried out, also made it possible to determine which of the motivational factors available in the company have an impact on the level of work motivation. Among the salary motivation factors, the highest influence is salary - 53%, bonuses received - 39% and individual remuneration raises - 35%. In contrast, the least influential are the industry allowance - 12% and the annual award - 16% (Figure 5).

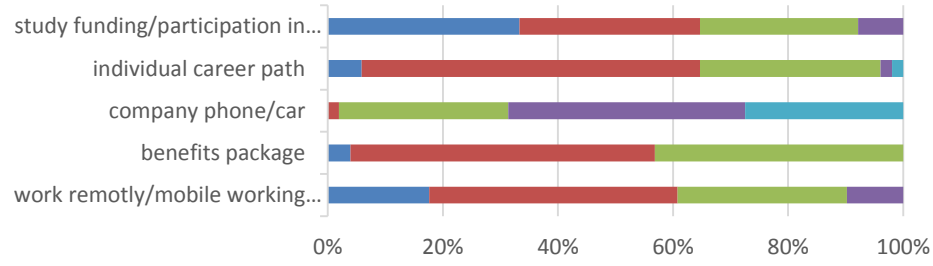



| | Individual remuneration raises | industry allowance | Annual award | Bonuses | Base salary |
|---|---|---|---|---|---|
| highest influence | 35% | 2% | 6% | 39% | 53% |
| big influence | 59% | 6% | 20% | 57% | 43% |
| medium influence | 4% | 24% | 59% | 4% | 4% |
| small influence | 0% | 57% | 16% | 0% | 0% |
| no influence | 2% | 12% | 0% | 0% | 0% |

**Figure 5**. Salary incentive factors available in the company.

Source: own study.

Among non-salary material motivation factors, the most influential are study funding/participation in training - 33%, as well as the possibility to work remotely/mobile working hours (18%). The available benefits package also has a large impact on the level of motivation - 53% and an individual career path - 59%, while having a company phone/car has no impact on the level of motivation to work (Figure 6).

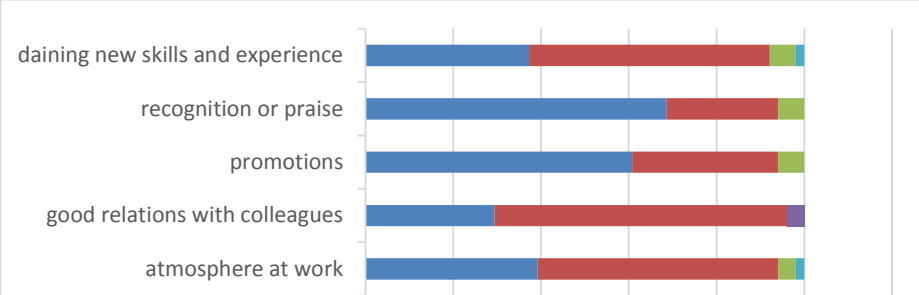



| | work remotly/mobile working hours | benefits package | company phone/car | individual career path | study funding/participation in training |
|---|---|---|---|---|---|
| highest influence | 18% | 4% | 0% | 6% | 33% |
| big influence | 43% | 53% | 2% | 59% | 31% |
| medium influence | 29% | 43% | 29% | 31% | 27% |
| small influence | 10% | 0% | 41% | 2% | 8% |
| no influence | 0% | 0% | 27% | 2% | 0% |

**Figure 6**. Non-wage material motivation factors available in the company.

Source: own study.

Non-wage intangible factors included: recognition or praise - 69%, good relations with colleagues - 67% promotions - 61%, and atmosphere at work - 55% and gaining new skills and experience - 55%. A small proportion of respondents - 4% indicated that the above factors have little or no impact on their level of motivation at work (Figure 7).




| | atmosphere at work | good relations with colleagues | promotions | recognition or praise | daining new skills and experience |
|---|---|---|---|---|---|
| highest influence | 39% | 29% | 61% | 69% | 37% |
| big influence | 55% | 67% | 33% | 25% | 55% |
| medium influence | 4% | 0% | 6% | 6% | 6% |
| small influence | 0% | 4% | 0% | 0% | 0% |
| no influence | 2% | 0% | 0% | 0% | 2% |

**Figure 7**. Non-wage intangible motivational factors available in the company.

Source: own study.

Although the analysis shown so far indicates that it is the non-wage intangible motivational factors that have a very strong impact on employees, still more than half of the respondents - 57% - believe that it is the wage factors that are more effective and 43% that non-wage intangible factors are, however, more effective motivational factors. However, it should be noted that none of the individuals confirmed the effectiveness of non-wage tangible factors (Figure 8).

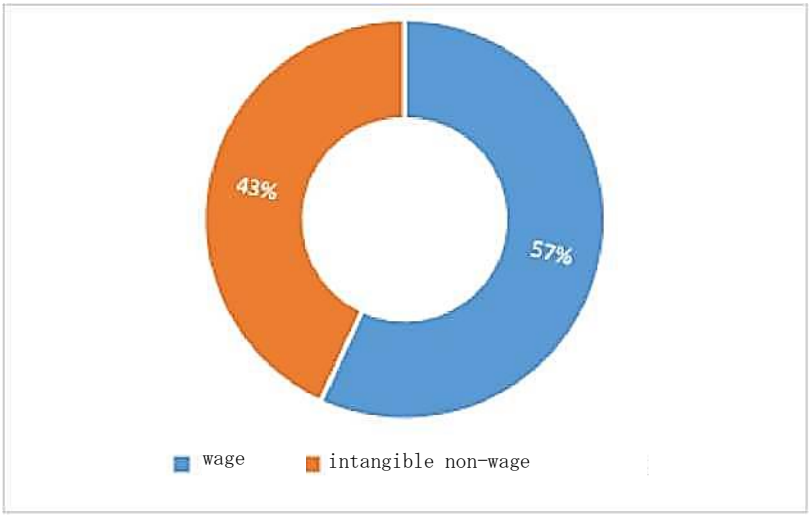



**Figure 8**. Effectiveness of selected forms of motivation.

Source: own study.

When asked whether employees had the option to refuse to participate in the project team, 63% of the respondents were appointed to the team without the option to refuse, 29% had the option to refuse, but did not use it, and only less than - 8 % could not opt out of the project despite not wanting to participate. This in effect showed that participation in the project team, was a form of distinction, as 88% of the respondents confirmed, and only 12% were of a different opinion (Figure 9). Although 67% of the respondents described the commitment of the members to the team as satisfactory, when asked: in the opinion of the members of the project team, does the available incentive system in the company encourage participation in the projects that are carried out in the company? as many as 74% think that it does not, and only 26% think that it rather does.

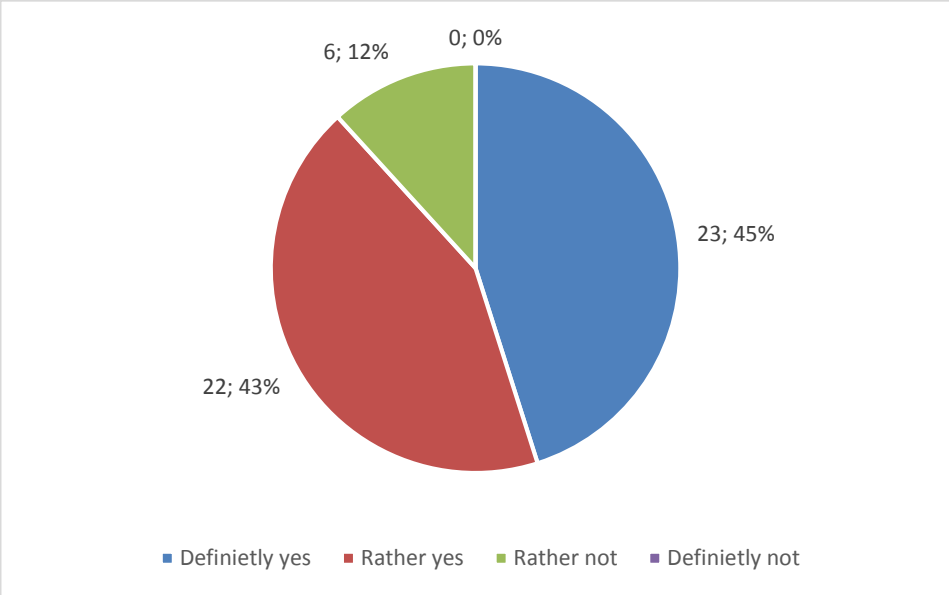



**Figure 9.**- Distinction resulting from participation in the project team.

Source: own study.

When asked: is the effort put into the success of a project adequately recognised and rewarded by the company?, 81% of the respondents denied this and only 19% said that they were rather well rewarded for the work put into the project, despite the fact that in an earlier question about the effectiveness of the company's incentive system, the answers were rather positive.

Further research focused on the performance evaluation system for project team members. For 84% of the respondents, the method of performance appraisal is rather clearly defined, while for 16% it is not. In contrast, its effectiveness was described by 75% of the respondents as unsatisfactory and 25% as rather satisfactory. Furthermore, 78% of the respondents believe that the developed performance appraisal system for project team members has no impact on increasing the level of commitment to the project, and only for 22% it has an impact.

Finally, respondents addressed the question of whether, in their opinion, the incentive system available in the company had an impact on the end result of the project and whether the project was successful. The result is surprising, with as many as 84% of respondents stating that

the system developed at the company was unlikely to have had an impact on the end result, and yet over 88% of respondents believe that the project was successful (Figure 10).

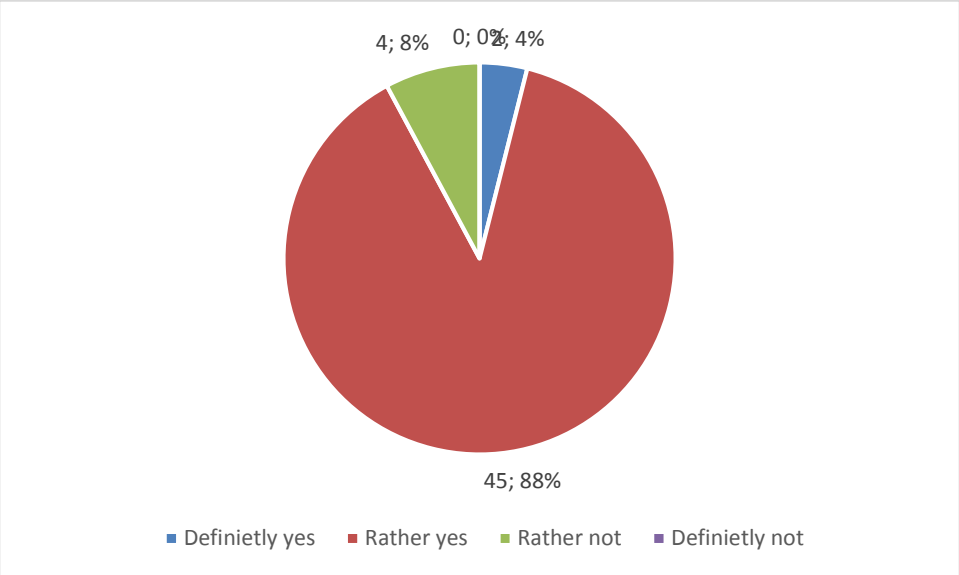



**Figure 10.** Project success.

Source: own study.

## 5. Discussion and conclusions

The process of motivating project team members is primarily about creating conditions that will have a significant impact on increasing the level of commitment to the project, which in turn will contribute to achieving the set goals. A key element of this process is to recognise the individual needs of each team member and thus provide the right tools and conditions for work. A key role in the success of a project is played by correctly selected members who have both experience and expertise.

The research carried out showed that employees were invited to participate in the project team, most of whom, held senior specialist positions and had many years of experience in the company, which influenced the effects of their work. These employees, were highly experienced in both their field and knowledgeable about the company's procedures, which in turn allowed them to make decisions and perform their job duties more effectively. Organisations that create a project environment are characterised by specific features, i.e. limited lead time, and limited resources, both human and financial. These characteristics, affect the entire project implementation and require an appropriate approach on the part of the project team. The project environment also enforces the need for full commitment and quality in the execution of the assigned tasks, the individual project members as a whole forming one cohesive team.

Even though the vast majority of members had only been involved in a negligible number of projects and lack of experience in teamwork was a noticeable problem, the level of commitment to the team, was at a satisfactory level, which could be a direct result of their long experience and sense of belonging to the company due to their length of service. The research also showed that the incentive system available in the company is clearly defined and that employees are familiar with the principles and methods of motivation. The use of motivational factors in a team is very important for the success of a project. However, in order to be able to motivate your team effectively, you should first of all know and understand the individual needs of each member in order to best match the motivational factors to their needs. The team leader should get to know both the intrinsic and extrinsic motivation of his or her employees in order to be able to match the right type of motivation in order to effectively achieve the project goals.

As a result of the research, previous theoretical considerations and analyses have confirmed that among all the motivational measures available in the company, the most effective according to the surveyed respondents are the salary motivational factors, which include the basic salary in the first place and, just behind it, the received bonuses and individual remuneration raises. The majority of employees are also satisfied with their basic salary, which became the reason for describing the motivation system as effective. Satisfaction with the remuneration received also has a positive impact on the overall level of commitment to the job.

In organisations that provide their employees with positive work experiences and appreciate them and enable them to learn new skills, there is a noticeable increase in performance and commitment, which was also confirmed in the research conducted in this study, as members showed that nonmonetary intangible factors were equally important to them, showing that participation in the project was a form of recognition for most of them. Other available non-wage intangible motivational factors such as gaining new skills and experience, promotion, a good atmosphere and relationships between colleagues were also shown as being very important. This was also confirmed against the original theoretical considerations and analyses. The analysis of the data made it possible to evaluate the motivation system in terms of the incentive to participate in projects and to assess whether the effort put into achieving project success is adequately recognised and rewarded. The results showed that the system in place did not encourage participation in projects and also the amount of work that employees put into the project was not adequately rewarded by their superiors, despite the extensive incentive system. Despite this, the project was successful.

In order to be able to talk about a fully effective incentive system, several changes need to be made to the current system. Considering that the very participation in projects is motivating for employees, and that currently they are top-down appointed to these jobs without being able to take part in recruitment, as such recruitment is not carried out. With this in mind, the Company could consider conducting internal recruitment for individual team members. In this way, future teams can gain not only an employee with the right competences, but also

an employee who has the right attitude to work in the team. Through recruitment, an employee with a different specialisation, characterised by different experience and knowledge can be included in the team, which in turn can have a positive impact on the team atmosphere and influence even better performance. In addition, the cyclical performance appraisals carried out could provide opportunities for promotion or at least individual raises for those highest rated and employees.

With the research carried out and a few imperfections found, it is possible to make relatively minor changes to the system, which will certainly have a positive perception among current and future project team members. As has been stressed more than once, the foundation of any organisation and any team is people. Job satisfaction is crucial for effective teamwork and the achievement of common goals. The main limitation of the article is the size of the research sample to the project team in the selected distribution company. Undoubtedly, the direction of further research will be to include a larger group of project teams in the study, as well as to expand the group of companies studied.

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# PUBLIC MANAGEMENT OF THE POST-WAR RECONSTRUCTION OF UKRAINE ON THE BASIS OF GREEN ECONOMY

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**Introduction/background**: Russia's war against Ukraine forced to change the traditional orientation of public administration in Ukraine, to define new priorities and develop a strategy for comprehensive economic reform and post-war recovery of Ukraine. Therefore, an urgent task for the modern public administration system is the development of mechanisms for the formation and implementation of the state policy for the development of the "green economy", which would harmonize the interests of the state, business and community, comprehensively integrate the development of the "green economy" into the process of improving the state economic policy of the country, create conditions for acceleration of the country's development, improvement of the level and quality of life of the population.
**Aim of the paper**: The aim of the paper is to formulate the key features of state regulation of the "green economy" to determine the directions of development of this concept in Ukrainian realities.
**Materials and methods**: Research materials and methods are based on the analysis of open data, their processing and use, as well as on the methods of systematization and system-structural analysis, which will allow formulating the received data in a unified format.
**Results and conclusions**: The green recovery of Ukraine should be considered as one of the possible concepts of post-war reconstruction, which is based on a holistic vision of the development of society, the economy and the state as a whole. Ukraine can take advantage of such opportunities to lay the foundations for future green growth. This goal can be achieved if the post-war recovery vision is "green". The conducted studies show that it is necessary to develop a state strategy that would, first of all, provide the thorough scientific research and the development of "green" technologies. To achieve this goal, two models of green restoration can be proposed.
**Keywords:** economic reconstruction, green economy, public administration.

## 1. Introduction

The concept of green economy has relatively recently appeared in the focus of scientific research. The reason for interest in the green economy was the initiatives of global and regional organizations that are looking for a way out of the multidimensional economic and environmental crisis deepened by Russia's war against Ukraine, in which most of the world's countries are involved. This crisis shows that a return to the previous state is impossible and a new concept of economic and social growth adapted to the changing global economy is needed.

The new economic model, in which the use of new material goods does not harm the environment, is not associated with a lack of natural resources, and there are no significant differences in social status, is called the "green economy", the basis of which is economic and social, and which involves strengthened interaction of the state and private business. Under such conditions, the state is tasked with equalizing the rules for the functioning of "green" products through the refusal of subsidies, policy reform and the creation of incentives that can strengthen market infrastructure and mechanisms. Also, the state can direct public investments to green public procurement. At the same time, the challenges for the private sector are changing – to find and use hidden opportunities for the transition to a "green" economy in key sectors, to invest and increase certain financing. The European Union's Europe 2030 strategy emphasizes sustainable development and a green economy as drivers of future development. The green and social economy plays a significant role in the structural changes of European economies.

The aim of the paper is to show how the concept of green and social economy can become a tool for expanding the possibilities of sustainable development and for characterizing the green economy as a new, more radical direction of the post-war reconstruction of Ukraine's economy to create a harmonious, balanced social and ecological development of the country. To achieve the aim of the paper, the analysis and a methodology based on a system approach is used.

## 2. Ukraine's losses from Russia's direct aggression as a catalyst for change

The cost of damages and losses from Russian aggression in Ukraine has already reached record levels, and the drop in real GDP in Ukraine is deeper than in most countries that have experienced armed conflicts (Перун, 2023).

At the same time, Ukraine managed to maintain macro-financial stability and attract significant amounts of international aid, which will have a positive impact on the prospects of post-war recovery.

Russia's military aggression against Ukraine caused large-scale destruction of production capital and infrastructure, brought human casualties and social losses. The war led to a reduction in jobs and incomes, a decrease in purchasing power and the amount of accumulated assets. In 2022, the national economy lost 29.2% of real GDP, and 13.5 million people were forced to leave their homes. More than 7 million people were below the poverty line, and the poverty level reached 24% of the population. Experts from the World Bank and the European Commission estimate the damage from the war in Ukraine in the period from February 24, 2022 to February 24, 2023 in the amount of 134.7 billion dollars USA, and the need for reconstruction – 410.6 billion dollars USA (Богдан, 2023).

According to estimates of the World Bank and its partners, the housing sector (38% of total damage), transport (26%), energy (8%), industry and trade (8%), agriculture (7%) suffered the greatest losses.

In the total amount of recovery needs (410.6 billion dollars USA), the transport sector occupies 22%, the housing sector 17%, the energy sector 11%, the sphere of social protection and means of subsistence 10%, solving dangerous situations 9%, agriculture 7%.

In general, economic losses from war include not only the destruction and damage of infrastructure, production facilities, public institutions, but also the loss of human capital and the expenditure of resources on military confrontation (Корогодський, 2023).

**Table 1.**
*The cost of losses from military actions and needs on 02/24/2023 in billion dollars USA*

| **Sector** | **Damages** | **Needs** |
|---|---|---|
| Housing of citizens | 50.4 | 68.6 |
| Education and science | 4.4 | 10.7 |
| Health care | 2.5 | 16.4 |
| Social protection and means of subsistence | 0.2 | 41.8 |
| Culture and tourism | 2.6 | 6.9 |
| Energy and mining industries | 10.6 | 47.0 |
| Transport | 35.7 | 92.1 |
| Telecommunications and digital technologies | 1.6 | 4.5 |
| Water supply and water treatment | 2.2 | 7.1 |
| Municipal services | 2.4 | 5.7 |
| Agriculture | 8.7 | 29.7 |
| Industry and trade | 10.9 | 23.2 |
| Irrigation, water resources management | 0.4 | 8.9 |
| Finance and banking | 0.0 | 6.8 |
| Environmental protection and forests | 1.5 | 1.5 |
| Governance | 0.3 | 0.6 |
| Demining | - | 37.6 |
| Others | 0.3 | 1.5 |
| Total | 134.7 | 410.6 |

Source: The World Bank, the Government of Ukraine, the European Union, the United Nations. "Rapid Damage and Needs Assessment"

In 2022, national budget expenditures on defence amounted to 23% of GDP, and in 2023 they should amount to 20% of GDP. Demographic losses from military operations are also significant, which are still difficult to estimate. But according to the results of the EBRD study in the world, even 25 years after the end of the wars, the population of the affected countries remained significantly smaller than in comparable countries without armed conflicts. The main components of these losses are the victims of military operations, the outflow of refugees and the decrease in the birth rate.

According to the EBRD, on average, war events result in a drop in GDP per capita by 9% relative to the pre-war level (Албул, 2023).

However, the most destructive and large-scale wars ended with a drop in GDP per capita by 40-70%. (Transition Report 2022-23).

In Ukraine, it is still too early to talk about the total drop in GDP as a result of the current war, but in 2014-2015, after the first act of Russian aggression, Ukraine already lost 15.8% of GDP, and in 2022, real GDP decreased by 29.2%.

In addition to thousands of deaths and the destruction of critical infrastructure, another, more invisible crisis related to Russia's invasion could haunt Ukraine for years – environmental damage. From shelling of chemical plants to forests burned by rockets, the consequences will be felt not only by the ecosystems of Ukraine, but also by its people. The environmental danger Ukraine faces as a result of the armed conflict is also exacerbated by the country's industrial background. Heavy industry is a significant part of Ukraine's economy, especially in the east of the country. The largest nuclear power plant in Europe is located in Ukraine, in the city of Zaporizhia, and Ukraine's industry accounts for almost 29% of its gross domestic product. One of the high-risk threats is tailings, where liquid industrial waste is stored. In total, there are 465 of them in the country, which store more than 6 billion tons of waste, and 200 of them are located in the east of Ukraine, the region most affected by the war (Impact of Ukraine crisis, 2022).

According to the calculations of the government of Ukraine, environmental damage has already amounted to 54 billion dollars USA. A significant part of nature conservation areas is under occupation, which means that the country's biodiversity is under threat. Green areas can turn into deserts. About 700,000 hectares of forest are currently under occupation. Of them, about 500,000 hectares are on the mainland of Ukraine and 200,000 hectares of forest – on the territory of the Ukrainian Crimea. About nine hundred objects of the reserve fund are under occupation and shelling. This is almost a million hectares of land, that is, 20 percent of all nature conservation areas of Ukraine. About 600 species of animals and more than 750 plants and fungi are threatened with destruction or partial destruction. The total losses from the contamination of Ukrainian soils with chemical substances have already exceeded 15 billion hryvnias, and the losses from the contamination with war waste, according to preliminary estimates, have reached eight hundred and sixty billion hryvnias. We are talking, in particular, about the remains of equipment, ammunition and broken

infrastructure. Due to water pollution, Ukraine has already suffered losses of over 58 billion hryvnias (Екологічні наслідки, 2022).

The conducted research showed that the average level of cumulative losses of real GDP during the war was 40%. At the same time, the average drop in real GDP in the 1st year of the war was equal to 20%, and the drop in Ukraine's real GDP in 2022 reached 29.2%, the decline in industry – 38%. This speaks both to the brutality and massive destruction from the Russian aggressor, which Ukraine suffered, and to the low adaptive capacity of the Ukrainian economy to the conditions of martial law and the lack of broad state support.

**Table 2.**
*The annual rate of decline in real GDP in the first year of military operations in the geographic territory in %*

| No. | Country and the first year of hostilities | The rate of change of real GDP in % |
|---|---|---|
| 1. | Iraq (1991) | -60.2 |
| 2. | Austria (1945) | -58.7 |
| 3. | Ukraine (2022) | -29.2 |
| 4. | Germany (1945) | -28.9 |
| 5. | Bosnia and Herzegovina (1992) | -28.8 |
| 6. | Japan (1945) | -24.6 |
| 7. | Croatia (1991) | -22.0 |
| 8. | France (1940) | -17.5 |
| 9. | Iraq (2003) | -16.0 |
| 10. | the USSR (1941) | -13.9 |
| 11. | the Netherlands (1940) | -11.9 |
| 12. | Italy (1943) | -9.4 |
| 13. | Ukraine (2014) | -6.6 |
| 14. | Finland (1939) | -4.3 |
| 15. | Georgia (2009) | -3.7 |

Source: Maddison Project Database, State Statistics Service of Ukraine

The Great War dealt a significant blow to the economy of Ukraine. Only in the third month of the full-scale invasion, total losses reached 100 billion dollars USA, which is equal to 50% of the total amount of GDP in 2021 (У НБУ, 2022).

According to UN estimates, the war destroyed 35% of Ukraine's economy. Due to the Russian invasion, the monthly budget deficit of Ukraine is estimated at 5 billion dollars USA (Коваленко, 2023).

Ukraine's economy shrank by more than 35% in 2022 due to the massive destruction of infrastructure, including rail and other connections with neighboring countries, road networks and bridges. Production and trade activities are disrupted; there are large losses of labor force due to migration or conscription into the army.

## 3. "Green economy" as a way of future development of Ukraine

Scientists believe that the economy depends on the natural environment, of which it is a part and in which it exists. Such an economy is not only a new economic trend. It is also considered as a direction of sustainable development, which combines the following components: ecological, economic and social. Among these components, priority is given to environmental ones (Маковоз, Передерій, 2018).

Thus, in the studies of the international organization UNEP, it is noted that the concept of "green economy" "...can solve current tasks and provide opportunities for the strategy of economic development of all nations" (Key World Energy, 2012, p. 8).

The need to change the economic model of Ukraine's development is also caused by the fact that the traditional model predicted growth only with increasing costs of natural resources. There was a need to change approaches in the economic model, which would predict the dependence of growth not on the growing costs of resources. The "green economy" model envisages growth together with environmental sustainability, the transition to which requires an investment of 2% of global GDP by 2050. Green investments can ensure rational resource management. In the world, many countries have implemented the principles of green economy. Thus, Korea was the first to define the green economy as a national strategy. Many countries are increasing investment in renewable energy. In South Africa, a tax on polyethylene bags has been introduced, in Brazil 95% of aluminum cans are recycled, 55% of plastic bottles, 50% of glass and paper are reused («Зелена» економіка, 2019).

Despite the fact that the green economy is a global economic model, it involves the development of production at the local level, an emphasis on secondary use, and the restoration of natural self-regulation. Development that is ecologically oriented requires innovative approaches and changes in public interests. In the conditions of increased importance of socio-economic regional development and decentralization of management, there is a need to manage environmental protection, rational use of natural resources and ensuring the safety of human life (Галушкіна et al., 2017).

Reducing risks for the environment is associated with solving the problem of resource scarcity and minimizing the occurrence of negative consequences not only for enterprises, but also for vulnerable groups of the population («Зелена» економіка, 2019).

The transition to a "green economy" requires the joint efforts of different countries, because under the conditions of such coordinated, defined and predictable cooperation through market and political instruments, it becomes possible to achieve higher results. Both the state and the private sector must make voluntary commitments to the green economy, which may go beyond the national framework of individual states. The tasks that can be achieved through greening include the following: reducing the scarcity of resources and environmental risks, strengthening progress in the economic sphere, social justice, increasing well-being («Зелена» економіка, 2019).

Without radical changes in the structure of society, production and life in general, it is impossible to build a model of a green economy that would ensure sustainable growth. Ukraine must change its own institutions, introduce corporate responsibility. Solving socio-economic problems is related to income policy, financial and budgetary policy, which should stimulate economic growth, control financial flows, ensure investment and structural changes, and develop trade agreements at the international level. The state should develop ecological politics that would focus on natural and social justice, as well as the satisfaction of current important needs, taking into account the interests of the future (Гаврилюк, 2015).

## 4. Analysis of recent research and publications

Theoretical and practical aspects of the "green economy" concept are studied by such scientists as: E. Barbier, A. Cameron, A. Markandya, C. Stewart, and D. Pearce (Cameron, 2012; Barbier, 2010; Pearce, 1989).

Ukrainian scientists Y. Berezhna, O. Veklych, I. Bystryakov, T. Galushkina, B. Danylyshyn, A. Kachynskyi, L. Musina, V. Potapenko, A. Martyniuk, Y. Ogarenko, and N. Shlapak made a significant contribution to the study of theoretical and practical aspects of the "green economy" concept (Гаврилюк, 2015; Гарлицька, 2017; Гончаренко, 2020; Горянська, 2019; Гура, Гуцан, 2017).

That is, the "green" economy can be considered a type of economy that is oriented towards the coherence of economic development and the ecosystem, taking into account the capacity of the latter, the restoration of which is one of the primary permanent tasks of the state's development. The creation of a "green" economy means the inclusion in the production process of the natural component of consumption (use of resources), constant reproduction and preservation. The reproduction itself must take place on a permanent basis with the restoration of the natural environment, which does not allow it to be fragmented or episodic. The principles of the "green" economy include the following:

- Harmonization of "nature-production-human" relations with coordination of economic, ecological and social priorities;
- Protection from the destructive impact of production on both people and nature;
- Provision of life activities in the present and future periods;
- Ensuring economic and socio-cultural growth, taking into account environmental safety (Марчук, 2014).

The main principles of the functioning of the "green" economy include the use of alternative sources of energy, fuel, ecologically clean production, the use of technologies in economic activity that make possible to save resources, along with the implementation of programs for the purification of natural resources, processing and disposal of waste.

At the state level, such an economy will contribute to development and integration processes, in particular, European integration. It is believed that existing environmental challenges can be addressed using environmental finance through:

- Achieving a balance in the use of natural resources, including fuel and energy, which provides for the transition to the consumption of alternative energy, regional balanced use of energy resources;
- Forecasting the growth of the population and forecasting the need for energy consumption, which will make possible to choose an ecological way of obtaining energy and preserving resources to meet the needs of future generations (restoration of the biosphere, in particular, the Earth's biomass);
- Consideration of the economic system of human development as a part of the biosphere and the processes that take place in it. As a result, there is a need to reformat the theoretical basis of economic development (Гарлицька, 2017).

Examining the concept of "green economy", we can conclude that such an economic system, together with the reduction of environmental risks, contributes to the increase of public welfare and provides social guarantees. The task of the green economy is to create a political program that would be operational and promote the emergence of such sources of economic growth that would be compatible with ecosystems.

Green economy measures are divided into economic and non-economic, such as:

- Assessment of the value of natural resources in accordance with the requirements of sustainable development;
- The investment policy of the state, which is oriented towards green technologies, infrastructure, restoration and increase of natural capital;
- Lack of provision of environmental subsidies, which are ineffective and used in unsustainable activities (agriculture, fishing, forestry and water management, etc.);
- Implementation of public procurement in the field of production of ecological products;
- Tax reforms in terms of priority on taxation of pollution, not labor force;
- Removal or reduction of trade barriers for ecological goods;
- Maintaining research on the creation of environmentally friendly technologies (Горянська, 2019).

Thus, the domains of the green economy are:

- Resource management.
- Renewable energy sources.
- Energy and material saving.
- Clean technologies and clean production
- Biodiversity protection.
- Corporate social responsibility
- A sustainable model of consumption and production.

According to B. Ryszawska, key areas for a green economy include: renewable energy, clean technologies, energy-efficient (energy-saving) construction, public transport, waste management and recycling, sustainable use of land, water, forests and ecotourism (Ryszawska, 2013).

## 5. State management of the transition to green economy

The task of the state is to create the conditions for both business and society in general to transition to a green economy using green technologies. The main tasks to be performed in Ukraine include the following:

- To modify the system of national accounts to assess progress through integrated environmental, economic and social indicators;
- To change the tax policy, canceling "dirty" subsidies, supporting green sectors;
- To develop infrastructure, primarily public transport;
- To carry out territorial planning in accordance with the developed development models (Гончаренко et al., 2020).

Growth in the green economy involves both public and private investment aimed at increasing the efficiency of resource use, and investment requires government support and incentives. The state is also entrusted with the function of implementing a fair pricing and tax system that would stimulate resource conservation, maintaining environmental standards, technical regulations, and subsidizing energy resources. The effectiveness of actions should be evaluated through a system of indicators and used for making political decisions (Галушкіна et al., 2017).

As for Ukraine, the directions for the implementation of the green economy are as follows:

- Use of resource potential on a rational basis;
- Diversification of energy supply sources;
- Environmental protection;
- Production of agricultural products of organic origin;
- Modernization of the housing and communal sphere;
- Formation of environmental awareness and behavior of the population (Гура, Гуцан, 2017).

State regulation provides the implementation of such ecological principles of economic activity that would accelerate economic growth and contribute to the emergence of transformational changes. Such a policy should be established in programs, plans and strategies, discussed by various contact groups, and approved by authorities. Under such

conditions, an increased return on investments is possible. Individual states are developing strategies for mitigating the consequences of climate change, developing, first of all, organic production. In state regulation, several political directions are implemented, which require the development of separate blocks. The developed regulatory system with defined goals, principles and tasks should become the basis of the concepts of "green economy", which should be taken into account in development strategies. Specific regulatory instruments that will be used to achieve the set plans and fulfill the tasks should be developed. The effectiveness of state regulation should become an object of monitoring (Кумачова, 2015).

State policy should provide the assessment of the economic effect not only on the basis of GDP, but also through the use of other tools. The banking system should function in order to create greater public utility. State policy in the field of "green economy" is oriented towards long-term tasks, solving not only economic, but also social and environmental problems. This requires both state institutions and management mechanisms that emphasize ecological principles and processes. It is a mistake to think that the green economy is exclusively aimed at greening. Such a model primarily requires social changes. In the conditions of globalization, when the processes in one state are integrated and dependent on the processes in another, the problem of using limited resources intensifies, and the issue of solving the problems of society's existence within the limits of the entire planet arises. Accordingly, the theory of the "green" economy, according to most scientists, is the tool whose use will make possible to solve problems common to many countries, focus on the long term, find innovative ways to use existing resources sparingly, and thereby ensure economic growth (Ульянченко, Єфанов, 2019).

The "green" economy, as a type of economy, is closely related to environmental and social policies, aimed at satisfying the constitutional rights of citizens, which is regulated by the main law of the state – the Constitution of Ukraine. It was determined that the state has an obligation to its people to ensure environmental safety, to maintain ecological balance throughout the entire territory of the state. The main basis of the state's activity should be the preservation of the gene pool. The land cannot be harmed, the ecological situation can deteriorate (Конституція України від, 28.06.1996).

The Cabinet of Ministers of Ukraine, as the central body of executive power, is entrusted with the responsibilities of ensuring the economic independence of the state, which can be achieved through the implementation of tax policy, as well as investment, financial and price policy, simultaneously with the policy of environmental safety and nature management (Конституція України від, 28.06.1996).

To fulfill the constitutional tasks, the Cabinet of Ministers of Ukraine defines and approves the strategies of its activities. In accordance with the strategy defined for the period until 2030, several such directions are taken into account:

- The tax system – the implemented environmental tax needs to be reviewed, as there is a need to increase its effectiveness;
- Energy security – increasing independence through the activation of production of own energy carriers, diversification in the supply of energy resources taking into account different sources and routes; development of mainly renewable and low-carbon energy sources, availability of reliable and ecological energy for all consumers;
- Environmental policy – determination of quotas for greenhouse gas emissions, control of industrial pollution, implementation of a system of integrated permits for large polluters; carrying out reforms regarding the waste management system, increasing volumes of not only waste sorting and processing, but also reuse; reducing the degree of use of plastic products, including disposable ones; ensuring sustainable development of forestry; greening of the economy due to increased effective use of funds received from the actual volumes of emissions, discharges, placement of waste;
- Rational use of the subsoil – ensuring the development of natural resource potential on a sustainable basis; formation of a transparent, non-discriminatory, investment-attractive sphere of subsoil use; increasing critical and strategic reserves of the mineral and raw material base, in particular through the introduction of electronic bidding on the basis of competition, the digitization of geological data, the introduction of an economic passport for every Ukrainian citizen, on the basis of which it will be possible to receive a share of the exploited natural resources (Програма діяльності, 2020).

The Government of Ukraine defined the relevant priorities in its activities, which include the following:

1) Introduction of the principles of sustainable development into national legislation through consideration of greening, primarily in budget and tax legislation;
2) Constant institutional improvement of the management system in the sphere of resource use and environmental protection;
3) Involvement of a wide range of public participation in decision-making regarding environmental protection, ecological safety and the use of natural resources;
4) Ecological education and upbringing, which will provide an opportunity to form ecological consciousness;
5) Development of the economic mechanism in the field of nature management and its improvement;
6) Strengthening cooperation in the international environment, harmonization of legislation;
7) Creation of an effective system for monitoring the use of resources and the environment;
8) Strengthening of control over compliance with legislation in the field of environmental protection activities both by the state and the public (Розпорядження Кабінету Міністрів, 2021).

Determined priorities and strategic directions cause the need for legislative changes. Laying the foundations for environmental protection legislation requires the cooperation of all branches of government. Therefore, a number of codes were adopted in Ukraine (in various areas of natural resources: land, forest, water, subsoil), as well as laws on the environment, atmospheric air, animal life, environmental expertise, radiation safety (Галушкіна et al., 2017).

Increasing efficiency in environmental policy, compliance with international standards and requirements together with the use of economic tools will provide an opportunity to stimulate enterprises to implement various innovative environmental technologies, and accordingly contribute to "green" state development (Галушкіна et al., 2017).

"Green" economy primarily involves risk management in the field of ecology, which is associated with various economic areas of activity. Since Ukraine has ratified many international agreements, it has simultaneously undertaken to adhere to sustainable low-carbon development and to adapt to climate change, which has a negative impact on the environment. Environmental problems also create problems in the economic security of the state, since the resource potential is very high (availability of sources, the number of minerals), and state management is inefficient (outdated equipment, high wear and tear of funds, outflow of qualified personnel), then work in the field of subsoil use is very ineffective (Про Основні засади (стратегію), 2019).

Environmental principles are also taken into account in the priorities of innovative activities at the state level, namely: new technologies in energy transportation, the introduction of technologies that are not only energy-efficient, but also resource-saving, the preference for alternative energy sources, the development of new technologies in high-tech industries, in particular in relation to production, processing various materials and their connections, the development of robotics, information and communication technologies using the achievements of modern science (Галушкіна et al., 2017).

Ecological economy involves the implementation of such a tax reform strategy that would provide an opportunity to create jobs and preserve the environment. This becomes possible due to the transfer of the tax base from the income of the enterprise and the wage fund to the consumption of natural resources, the implementation of harmful emissions. Such a transfer contributes to the growth of wages, stimulation of investments in innovation, reduction of natural resource costs, which is achieved due to the reduction of the use of materials in production, reduction of energy costs, which also affects the reduction of harmful emissions (Галушкіна et al., 2017).

Sustainable development strategies are being developed in Europe, which are focused not only on the green economy, but also provide the creation of new jobs. At the same time, attention is focused not only on sustainable development, but also on the aging of the population and resource conservation. Growth in the green economy is considered together with innovation and competitiveness. A competitive, resource-saving, low-carbon, socially

oriented economy with high employment is defined as the goal. In accordance with the adopted unified European strategy, each state develops its own development strategies. Innovative state European programs in the field of "green" economy include:

- Road map of the transition to a competitive low-carbon economy;
- Energy efficiency plan;
- Road maps for the development of the electric power industry, the transition to resource efficiency;
- Programs for the development of research, regional development, competitiveness, and innovation (Галушкіна et al., 2017).

Mobility and efficiency are considered key features of resource utilization. "Green" economy is considered as a factor in opening up new opportunities in business, increasing employment, and in general – strengthening national strategies. International organizations are developing incentives (investment and fiscal), implementing political reforms to ensure the transition to a "green" economy. The implemented energy and climate packages should significantly reduce greenhouse gas emissions, first of all. Environmental sustainability in the economy should be achieved through:

- Protection, development and preservation of natural capital;
- Development of a resource-saving and competitive low-carbon economy;
- Protection from environmental risks and pressures;
- Increasing the efficiency of response and challenges in the field of ecology and climate;
- Compliance with the full responsibility of polluters with compensation for damages (Галушкіна et al., 2017).

Regulatory and legal support for the functioning of the "green" economy is formed at the national and supranational levels, since environmental problems and subsoil use, life and health of the population do not have exclusively local significance. The "green" economy of one state affects another, so cooperation between different countries and harmonization of legislation is important for the conservation of resources, development of technologies and creation of new jobs.

The plan for the economic recovery of Ukraine, presented by the Office of the President and developed jointly with the Cabinet of Ministers, includes the abandonment of the commodity economy and climate modernization. The plan is built on nine key principles and provides for full access to the markets of the EU and G7 countries.

The economic recovery plan of Ukraine provides:

- Acquisition of candidate status, and then full membership in the EU;
- Building the economy on the basis of deregulation and liberalization. A declarative principle for business has already been adopted for most licenses and permits;

- Creation of logistics routes in the western direction. The government is working on expanding their bandwidth. There are already the first results – a corresponding memorandum was signed between Ukraine and Poland;
- Transition from export of raw materials to processing in industries that provide the largest export earnings. In agriculture and metallurgy, thanks to processing, it will be possible to achieve the significant growth;
- Development of the domestic military industry. It is not only about the purchase of weapons, but also about production, in particular through the transfer of military technology;
- Self-sufficiency in energy will be achieved by increasing the production of own gas and the development of nuclear energy. It is quite possible to achieve energy independence in 3-5 years;
- Climatic modernization. The creation of new facilities in various industries must take into account the principles of the "green" economy;
- Localization of at least 60% of Ukrainian companies and manufacturers, which will be involved in the renewal of Ukraine. This will give an impetus to the economy, create new jobs, and revive entrepreneurial activity (План відновлення, 2022).

A successful solution for the recovery of the country will be the integration of the Ukrainian economy into the EU economic system. Various European logistics and infrastructure projects can help in this. For example, the inclusion of Ukrainian logistics routes (road, rail, air and water) in the European logistics networks under the TEN-T program (in July 2022, the European Commission included Ukrainian logistics routes in the indicative maps of the project), reconstruction of existing and opening of new checkpoints on borders with European states, transition of the railway to the European format track standard, etc. While hostilities continue, Ukraine and EU countries are negotiating the liberalization of freight transit from Ukraine to Europe, the creation of "Solidarity Roads" for the export of grain and import of necessary goods, support of Ukrainian export of goods through European ports, etc. All these developments will remain relevant even after the end of the war (План відновлення, 2023).

Localization of production can become an important condition for full-fledged post-war development for Ukraine – at least 60% of products must be produced within the country. This point is indicated in the plan for the recovery of Ukraine after the war, which was approved by the specialized committee of the Verkhovna Rada in May 2022 (План відновлення, 2022).

The plan is designed for 10 years and aims to strengthen European integration and support private initiatives (War-Torn Ukraine, 2022).

In the context of the concept of "green economy", whole economic systems should be taken into account, and not only individual sectors, since the system covers all processes and infrastructure related to a certain natural resource or activity.

Ukrainian officials and architects are already thinking about how to rebuild cities destroyed by the Russian invasion in a way that is also environmentally friendly and helps fight climate change. Reconstruction can be a good chance for Ukraine to move away from ineffective or morally outdated practices of both Soviet and modern planning of public space. Reconstruction should take into account the historical legacy and the modern context: real needs of people, landscape features.

The reconstruction of the country is not only the restoration of physical objects. Already now, Ukraine needs qualified and experienced workers, and after the victory, this issue will become even more urgent. Therefore, the government should do everything to ensure that Ukrainians can live with dignity in their country, and not abroad. According to various data, the number of Ukrainians in EU countries is approximately 5.5-7 million people. About 3 million were working or studying abroad even earlier, before the full-scale war. According to a survey by the sociological group "Rating", 90% of Ukrainian citizens do not plan to move abroad for permanent residence (П'ятнадцяте загальнонаціональне опитування, 2022).

However, only half of the surveyed Ukrainians see the future of their children in their native country, if the danger will remain in the future, according to a survey of the Kyiv International Institute of Sociology (Лише половина, 2022).

Since April 2022, the number of those returning to Ukraine is greater than those leaving it. Among the reasons: the desire to return to the family, the feeling that the region of residence has become safer, etc. Someone returns because they do not have permanent housing and work abroad. And some still remain in other countries. Sociologists tell different figures: from 5% to 10% of the total number of those who left. These people will probably remain abroad in the future (Будрін, 2022).

The Ukrainian government is working on ways to encourage citizens to return to their homeland: negotiations are underway with EU countries on the possibility of providing refugees with financial support for a certain period after returning to Ukraine. They are also discussing the provision of additional funding to hire Ukrainians for jobs that will help rebuild the state, as well as the creation of temporary basic income programs for those who will return home. In particular, some of these aspects are already foreseen in the project of the Recovery Plan of Ukraine (Охріменко, Попов, 2022).

Taking into account the failures and risks of other countries will help Ukraine to better cope with the challenges of reconstruction both during and after a major war. For example, the authorities should not repeat the mistakes of not creating a single platform for coordinating the organizations that helped in the reconstruction, so that significant investments – donor – did not come to Ukraine.

## 6. Conclusions

Thus, the current vision of the post-war reconstruction of Ukraine by the Government of Ukraine and international partners is only being formed. In particular, recovery will involve not only overcoming the direct consequences of the war, but also a comprehensive plan for the development of the state in the medium term. At the same time, it seems that the vision of such a recovery by the government of Ukraine and international partners does not contain sufficient and effective green elements, which may for a long period reduce the opportunities of individual sectors from modernization and sustainability.

Therefore, the green recovery of Ukraine should be considered as one of the possible concepts of post-war recovery, which is based on a holistic vision of the development of society, the economy and the state as a whole. Ukraine can take advantage of the opportunities created by post-war recovery to lay the foundations for future green growth. This goal can be achieved if the post-war recovery vision is "green".

To achieve the goal, two models of green recovery can be proposed: optimistic and pragmatic. Both models are quite rational and feasible, although they differ in their level of ambition. The optimistic model assumes that the main goals are green (climate-neutral or green economy, green growth, sustainable agriculture, etc.), as well as the processes for achieving them. The optimistic model of post-war recovery can be briefly described as the Green Course of Ukraine. Its vision is "Green Ukraine as part of a global climate-neutral economy".

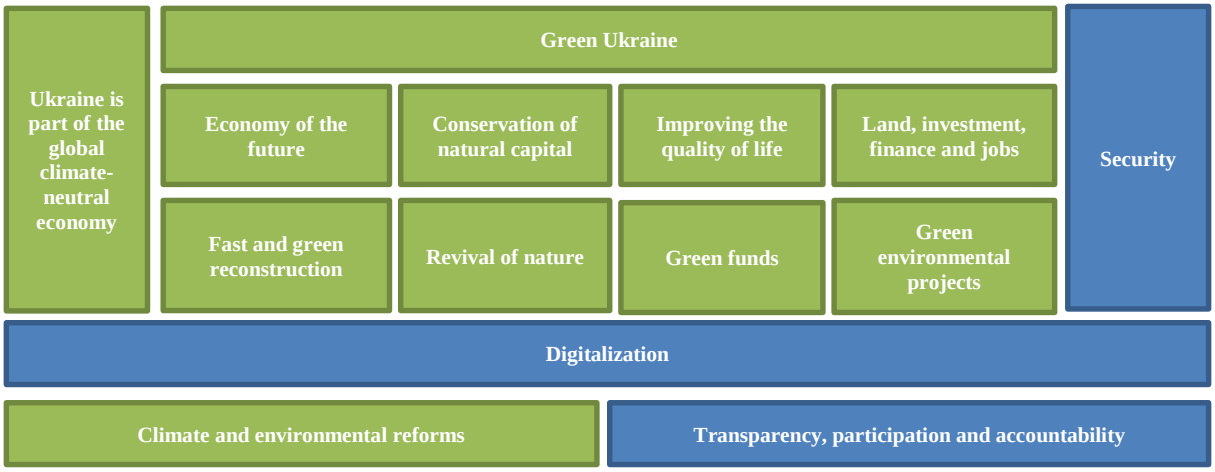


**Figure 1.** The architecture of an ambitious model of green recovery of Ukraine.

Source: Developed on the basis Зелене повоєнне відновлення України: візія та моделі. Аналітична записка. Серпень 2022 р.

General and sectorial principles of an optimistic green recovery model may include:

- Building the economy of the future: economic growth on the basis of decoupling, when macroeconomic indicators increase, and the pressure on natural capital decreases. In particular, this involves the growth of indicators of carbon productivity of the economy, water productivity, reduction of specific indicators of waste generation and water and air pollution, development of a circular economy;
- Preservation of natural capital, including management of water and land resources and preservation of biodiversity;
- Improving the quality of life, including the ecological quality of life of the population;
- Creation of conditions for green investments and innovations, state support of green sectors in priority areas, creation of green jobs.

Instead, the pragmatic model is a green tool for achieving goals that cannot always be classified as "green" (for example, energy independence, energy security, etc.). The key function of the pragmatic green model of Ukraine's recovery is to "green" the recovery process, prevent long-term negative consequences from the point of view of Ukraine's green growth and ensure the implementation of individual priority strategic initiatives in this area.

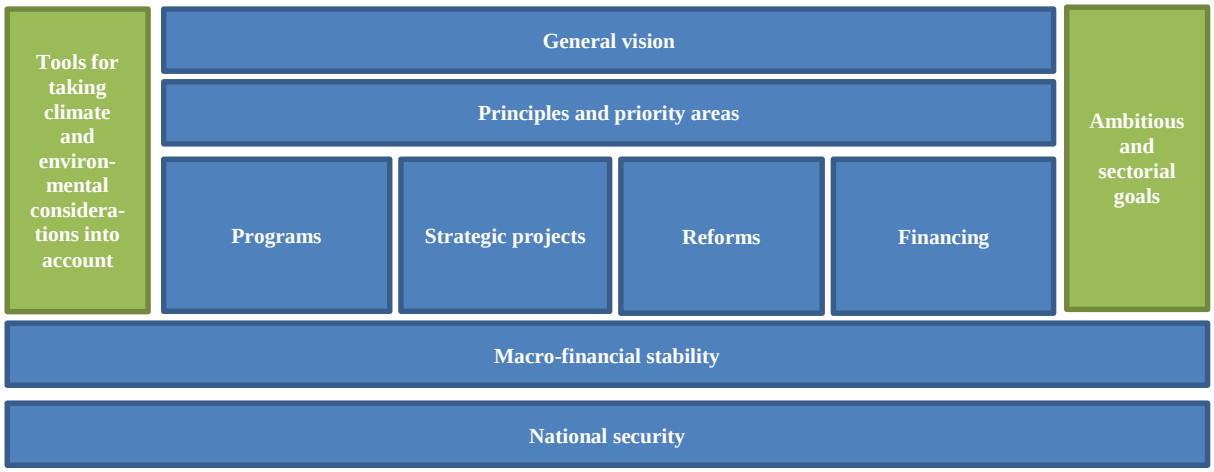


**Figure 2.** The architecture of a pragmatic model of green recovery of Ukraine.

Source: Developed on the basis Зелене повоєнне відновлення України: візія та моделі. Аналітична записка. Серпень 2022 р.

From the point of view of the elements of the pragmatic model of green recovery, they have the character of end-to-end integration of green issues in post-war recovery through the inclusion of relevant principles. The main tools of the pragmatic green model should be:

- Effective mechanisms for taking environmental considerations into account during decision-making, especially at the initial stages of recovery;
- Clear green financing conditions for selected objects or directions.

It is these elements that should create effective road signs to ensure the implementation of the principles of the green economy.

The conducted analysis of the modern Ukrainian economy confirmed the need for systematic "greening" of all industries in order to achieve long-term competitive advantages on a global scale. Such transformations will allow not only to improve the state of the environment, but also to increase the well-being of the population and the stability of the economy in the face of globalization challenges and recession. To fulfill this goal, a state strategy should be implemented, which should focus on all sectors of the economy and act systematically. The conducted research shows that the implementation of the "green economy" concept has begun at the global level, and all national economies are interested in it. It is the most influential tool for overcoming the recession. Ukraine should be actively involved in these processes, develop and implement such strategies, programs and plans that would meet not only the current international norms and standards, but also take into account prospective changes in the national economy.

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# COMPREHENSIVE IDENTIFICATION OF RISKS IN THE VARIOUS PHASES OF INVESTMENTS IN RENEWABLE ENERGY SOURCES PROCESS

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**Introduction/background**: The article draws attention to the wealth of sources devoted to determining the risks related to individual (different) stages of the RES investment process. At the same time, no sources presenting a summary of these risks in a comprehensive form have been identified. The article meets the expectations of investors in RES, providing them with information about the most important risks accompanying the implementation of investments in RES, at each of its stages.
**Aim of the paper**: The aim of this article is to present the results of a comprehensive analysis of risks in the investment process for the RES industry.
**Materials and methods**: The paper uses research methods consisting of text, literature, and documentation reviews as well as non-participant observation and analysis with synthesis.
**Results and conclusions**: The result of the analysis is a list of risks at each stage of the investment process dedicated to investments in RES. They have been classified in terms of the scale of impact from the perspective of the decision-making dimension.
**Keywords:** renewable energy sources, risk management, investment, classification, risk.

## 1. Introduction

China, the United States and Germany are leading the way in renewable energy investment, with a combined share of 54.5%. India, Brazil and Japan have also increased their spending on green energy, while Poland is also beginning to show increased interest (Kwinta, 2022). This can be attributed to the high electricity prices that make renewable energy more attractive. Interest in renewable energy is also growing in Poland. However, it should be noted that due to the specificities of the local natural resource market (coal is dominant), the main motivation for these activities is EU regulations (Seroka, 2021a) because the local natural resource market is

dominated by coal. Directive 2003/87/EC of the European Parliament was the outcome of the arrangements in the Kyoto Protocol (December 1997) and is regarded as the first document imposing obligations on Poland in the realm of renewable energies (Paska et al., 2022). This document is an addition to the United Nations Framework Convention on Climate Change (May, 1992). There is an observable rising requirement for energy, which further affirms the necessity for more investments in the processing industry. In 2022, the rate of increase of electricity demand will decrease significantly. The economic climate in 2021 saw a marked improvement due to the easing of Covid-19 restrictions, resulting in a 6% increase in global electricity demand. This growth is expected to slow to 2.4% in 2022, which is similar to the growth experienced between 2015 and 2019. Despite this slowdown, electricity demand remains on an upwards trajectory. The European Union's climate policy will serve to further increase the share of renewable energy sources (RES) in the energy mix of member countries. As of November 2022, Poland's installed capacity for all power sources stands at 60 GW, 22 GW of which is renewable and therefore makes up over 35% of the total. Figure 1 below outlines the growth drivers of this sector in terms of percentages.

| | | **Type of RES power plants** | | | | | |
|---|---|---|---|---|---|---|---|
| | | **Water** | **Wind** | **Biogas** | **Biomass** | **Photovoltaics** | **SUM** |
| **Installed capacity [MW]** | **11/2021** | 976,2 | 7000,7 | 255,5 | 912,3 | 7140,8 | 16286 |
| | **11/2022** | 978 | 7864,8 | 279,5 | 968,6 | 11924 | 22015 |
| **Dynamics** | | **100,2** | **112,3** | **109,4** | **106,2** | **167** | **135,2** |

**Figure 1.** Capacity of RES that have been installed by source type in November 2021 and November 2022.

Source: Rynek Elektryczny (2022). Moc zainstalowana OZE wzrosła do ponad 22 GW, https://www.rynekelektryczny.pl/moc-zainstalowana-oze-w-polsce/, 4.03.2023.

In Poland, photovoltaic power generation is the leading form of renewable energy, making up almost 54% of the nation's total installed renewable energy capacity. As of November 2022, close to 12 GW of photovoltaic power generation had been installed. Wind energy was the second highest, with an installed capacity of 7.8 GW, accounting for 36% of the country's renewable energy capacity (Figure 2).

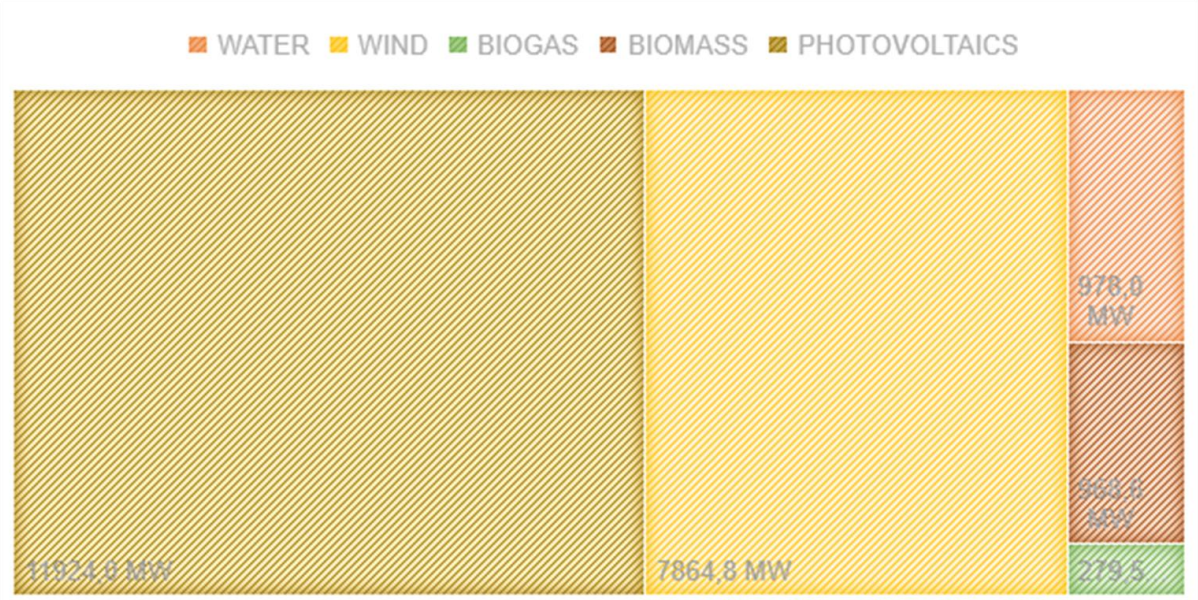


**Figure 2.** RES capacity structure in November 2022, in Poland.

Source: Own elaboration based on: Rynek Elektryczny (2022). Moc zainstalowana OZE wzrosła do ponad 22 GW. https://www.rynekelektryczny.pl/moc-zainstalowana-oze-w-polsce/, 4.03.2023.

In November 2022, Poland had established 12,893 renewable energy power plants, amassing 227.33 MW of total capacity. The vast majority of these are photovoltaic facilities (12,886), with a capacity of 199.2 MW; the remainder are five biogas power plants (1.87 MW) and two wind turbines (26.25 MW). No hydroelectric or biomass power plants were constructed. Overall, during the entire year of 2022, 343,700 new renewable energy sources were set up in Poland, with an installed capacity of 4.4GW. This data reveals an uneven development of renewable energy in Poland. This may be due to, among others: from: many challenges identified already at the stage of the investment process. So far, no material has been identified in the literature presenting the risks associated with investments in renewable energy sources in a comprehensive approach, where such risks would be identified at each stage of the above-mentioned process (Bajor, 2016; Michalak, 2014; Seroka, 2020, 2021b; Śpiewak, Wesołowska, 2016, 2019; Śpiewak, 2017; Szczepaniak, 2013 et al.). The main goal of the article is to fill this research gap and present the results of a comprehensive risk analysis during the investment process in the renewable energy industry.

## 2. Theoretical background and methodology

Comprehensive risk identification is a fundamental aspect of successful investments in renewable energy sources. By acknowledging and assessing the diverse range of risks associated with each phase of a project, stakeholders can develop effective risk management strategies and make informed decisions to achieve their sustainability and financial goals.

It is imperative for investors, project developers, and policymakers to continuously monitor and adapt their risk identification processes to navigate the evolving landscape of renewable energy investments.

In order to acquire useful information and factual data, it is necessary to use proper techniques and methods to obtain them. The degree of precision of the objectives and the materials gathered for research will determine which techniques and approaches will be employed (Jaroszewska-Brudnicka et al., 2021). As the research issue is complex, the triangulation method of research was employed. This method works by using multiple techniques to verify the results garnered from the research. A. Lewis iterative triangulation was chosen as the method of research (Lewis, 1998). This method is based on a systematic iterative process between literature exploration, empirical evidence, and intuition. Due to the nature of economic and social phenomena, research methods must be adjusted to meet the needs of the research goal. Two main research philosophies were used to define the phenomena: hermeneutics and positivism. Logic was the method of research philosophy utilized, which puts its attention on the dominant and alternative paradigms. In the realm of the dominant paradigms, quantitative methods were selected and expressed through deductive methods based on non-participant observation, analysis and synthesis. For alternatives, a qualitative approach was taken, from which literary analysis were chosen.

Non-participant observation means that the researcher is among the group of people being observed, but is limited only to a passive observation of their behavior.

## 3. Specificity of the analyzed issue

No signs point to the renewable energy investment process ending anytime soon. Renewable energy sources are becoming increasingly popular, meaning the investments is likely to continue. This process is usually divided into three main parts: pre-investment, implementation, and operation (Figure 3). Depending on the type of renewable energy, these stages could be different. For example, constructing a photovoltaic park may require different steps than setting up a biogas plant, which is a much more complicated process.

| PHASES | STAGES |
|---|---|
| PRE-INVESTMENT PHASE | Analytical stage |
| | Preparatory stage |
| | Legal – administrative stage |
| IMPLEMENTATION PHASE | Financing stage |
| | Executive stage |
| | Generating unit operation stage |
| OPERATIONAL PHASE | Investment operation stage |

**Figure 3.** Phases and stages in investment process.

Source: Own study.

Nonetheless, the job of honing in on the enhancement and advancement of the electricity system foundation is much easier. Guidelines in this field have been static for some time. They gave their sentiments on formal and legal, ecological and socio-economic prerequisites and on the licenses given. In this subject as well, strategic issues present no difficulties due to the accessibility of proper specialized offices. That expels all difficulties related with acquiring land and getting site licenses if the venture cycle doesn't mean to extend the office area. When investing in renewable energy sources, there are several risk factors to consider, including capital intensity, long-term returns, site constraints, grid connection requirements, reliance on national laws, and exposure to energy price fluctuations. Furthermore, the liberalization and deregulation of energy markets, along with the restructuring process and its associated uncertainties, have made it more difficult to assess the level of risk. In addition, the lack of credit guarantees and direct state aid, as well as the increasing entry of various participants into the energy market, pose additional challenges. Moreover, the availability of transmission grid capacity and the need to maintain business continuity are also potential issues. On top of that, there are also administrative, legal, and infrastructural obstacles that hinder the development of renewable energy. These include highly complex administrative procedures, a lack of stability in the legal environment, political influence, opinions of different social environments and interest groups, and infrastructural constraints in terms of possibilities to connect systems. Moreover, investments in renewable energy are still associated with relatively high levels of innovation, and new tech subjects in this area often have "teething trouble". Furthermore, specific area resources, such as saturation of the power system causing balance problems, the location of nature reserves and details of the local landscape, and the presence of archaeological sites, can also have a significant impact on the risk. Additionally, some of the known risks can be placed in various categories, which may make them of secondary importance. Still, risk classification can be beneficial. If conducted on a regular basis, it can help in choosing the right tools to reduce or eliminate the risks. Additionally, if the risks are categorized in relation to the company's goals, it can bring more value to the investors. This could have a positive effect on the main areas of investor activity and potentially prevent or mitigate these risks (Keller et al., 2022).

## 4. Results

As technology progresses, people's understanding of the uncertain and dangerous world increases. Science has long since demonstrated that there are no fixed and immutable rules in the universe. Therefore, taking risks is an integral part of any transformation. Risk is an essential part of the natural environment surrounding us. Any creative human activity involves a measure of uncertainty and risk. Risk taking can be classified into various categories. Investment risk is

the tolerance for the potential of achieving a different result than was anticipated when initiating a particular action. Because the future is unpredictable, investors must use forecasts and common sense when deciding on investment strategies, knowing that risk must be taken into consideration. Data obtained from various sources can lead to discrepancies between the expected and actual outcomes. Risk and volatility are intertwined. Even if the probability of certain events can be estimated, there is no guarantee that the outcomes will be evenly balanced. The RES investment process consists of several stages. Each of these stages involves distinct activities, participants and capital investments. During each phase, major risks must be identified and assessed. Having a firm grasp of the threats and their context can be helpful in making decisions.

**THE PRE-INVESTMENT PHASE** includes conceptual, preparatory, legal and administrative stages.

**Analytical stage** - includes risk areas such as site selection and site investigation, energy resource assessment, environmental impact and social conditions.

When choosing a location and studying an area, the biggest threats are figuring out who has the title to the land, confirming the legal standing of the land, accurately ascertaining what the land will be used for, recognizing energy and natural material reserves, abidance by the distance criterion, and considering the mutual effect criterion. These boundaries must be both economically advantageous and in accordance with the environment. Minor risks may involve local governments' decision-making authority, processes, terrain, and requirements concerning archaeological, geological, and geotechnical research.

When looking into energy sources, there is always a chance that the resources available in the local area may not be sufficient - such as wind, solar, water, and thermal energy, or that the necessary raw materials may be in short supply. Other possible risks include fluctuations in the cost of raw materials and changes in the manufacturing abilities of potential suppliers. Finally, it is important to pay attention to the possibility of environmental regulations altering terminal operations, or changes in the type of farms in the area.

When conducting an Environmental Impact Assessment, it is essential to evaluate the primary potential hazards associated with the development. Modifications due to environmental regulations are not substantial. Possible risks can manifest from technological advances or the scope of presumable operational settings of a facility. When analyzing social conditions, the most significant risk is social deliberation (particularly the absence of local community backing for such endeavors). There may be objections as well. Social components concerning adjustments in inhabitants' living conditions are less significant. There are also dangers associated with negotiations with local government, local community formation activities or bureaucratic processes.

**Preparatory phase** – focus on risk areas identification, including planning, design, infrastructure, logistics, choice of investment implementation method, and investor's decision to implement the project.

When creating a plan, the most significant risks come from potential mistakes. This can include overlooking certain aspects, miscalculating costs, and mismanaging the process while in the preparation stage. Moderate risks involve the execution of long-term planning, the usage of specialist advice and evaluation, and spotting discrepancies between expectations and ultimate results. Even less serious risks, such as climate change and other natural disasters, still need to be taken into account.

When it comes to design, the greatest danger is making incorrect suppositions. These can incorporate wrong decision of innovation and contrasts between industrial facility limit and arranged yield. Not modifying tasks as required can likewise have expensive outcomes. There might be no access street, no partition from different structures, no association with the lattice, and no inward electrical foundation, which should all be modified later. Normal hazard is identified with venture quality. Absence of clear and justifiable prerequisites, delayed endorsement forms, late progressions, misconstruing of particulars or delicate archives can cause time gauges to surpass as far as timetables and spending plans. The least recognizable hazard is getting grants and development grants.

In infrastructure, the most serious threat is that it is correctly planned for weather, design, legal, supply and implementation. Risks in infrastructure building can also be identified from the point of view of land availability, for example sound geological conditions, the state of the public road network or the construction of access and provisional internal roads. It is also crucial to collaborate with the national electricity system in terms of the distance from the operator's main feed point or the capacity of the installed transformer. Risk is also impacted by line electricity capacity, documentation of link conditions, and lack of assurance of connection to the mains.

Other risk factors that can affect the success of a project include the state of the connecting infrastructure (particularly external), the condition of the property (due to contamination, pollution or hydrological issues), and the absence of sufficient cost controls. It is also important to make sure that tasks, purchases, and deliveries are carried out in a timely manner. The design documentation and the quality of the work must also be taken into consideration. Social issues are amongst the least risky factors. There is the potential for social resistance to the project due to the disruptions caused by the construction, as well as difficulties in recruiting skilled labour, and any surprises such as archaeological finds, unexploded ordnance, changes in regulations etc.

When it comes to logistics, major risks may involve accidents, destruction of machinery, inadequate capital flow, inaccurate information, and tardy deliveries (Jezierski et al., 2021). Moderate risks may include inadequate protection of the conveyance of the generator set, not picking the best route, substandard quality of delivered components (semi-manufactured goods), orders that are not in sync, and cash that subcontractors providing such services may not have enough of. Lower risks might center around entrance conditions, safeguarding and

storage of supplies, access to equipment and its efficacy when utilized, and keeping track of its performance.

The riskiest decision when it comes to investing is the selection of the general contractor or contractor to work on the project. If the wrong choice is made, the project could be delayed or not completed as planned. Additionally, if the investor and the contractor do not get along, the project could suffer due to miscommunication and disagreements. The risks also extend to the selection of substitute investors or contract managers, as the wrong choice could result in the same problems. Poor cooperation between the investor and their chosen company can result in average risk, while lesser risks include lack of understanding or disgruntled workers (Przybył et al., 2017).

When assessing a potential project, the biggest peril is correctly recognizing the kind of risk involved. Although not as significant, it is still vital to determine and observe the scheduled commencement and termination times, technology picks and financing approaches. The least risky element of this is the selection of the personnel, as their decisions can make or break the project.

**Legal-administrative stage** – focus on differentiates risk areas such as acquisition of land rights, environmental condition determination, development condition determination, institutional investment permits and grid connection permits.

When acquiring property, it is important to consider who owns the land. Investment in energy technology carries a greater risk of buying it back at a higher price than the market rate. Less crucial matters include matters regarding the conveyance of rights, additional fees, conflicts with the owners, etc. Occupancy and lease issues pose the least risk. Issues regarding rent payments or difficulty of access to the land are primary concerns.

The risks associated with the determination of environmental conditions were identified, including the potential for prolonging the process, stopping investment, or clashing with parts of the local community. Additionally, the assessment may require adjustments or new restrictions to be implemented, and the conclusion of the assessment may require the original decision to be rewritten.

When it comes to building permits, the municipality's process for deciding on them and how the area should be developed is fraught with the greatest danger. For licenses, a moderate risk is present. The least risky choice is to carry out engineering projects to fulfill development demands (Willumsen et al., 2019).

When applying for an investment permit, the most hazardous part is acquiring a building permit under the Construction Act. Officials must be aware of the legal information in order to ensure that no pressure is given to pass laws that are too stringent, maintain loopholes in the legal acts, or incorrectly interpret the existing laws. Having the proper construction project is required in order to receive a building permit and is less risky. It is important for policy makers and officials to have good legal knowledge to avoid the potential abuse of power. The least

risky situation is getting a permit for ancillary facilities, but unpredictability in the way officials interpret the relevant rules may still be a problem.

When applying for a grid connection permit, there is a risk of legal changes that could delay the release of the connection conditions, which are necessary to begin planning, constructing, and assembling. To reduce this risk, it is advisable to acquire assignment easements and easements, which are essential documents accompanying the connection conditions and building permits (Śpiewak, Wesołowska, 2019).

**THE IMPLEMENTATION STAGE** includes financing stage, implementation stage and unit operation stage.

**Financing Stages** – focus on risks which are created through activities such as cost control, economic and technical solution optimization, financial engineering and forms of financing or insurance at each stage.

The greatest risk in relation to capital and operating costs exceeding the estimated budget is the need for cost containment at all stages of the investment. In addition, tax variance can be a significant source of risk, as incorrect assumptions, changes in taxation, varying interest rates, exchange rate fluctuations, inflation adjustments and other factors may reduce the ability to successfully refinance investments and thus reduce profitability. A further risk is the possibility of a difference in the salvage value due to initial charges that were not taken into account when the analysis was made and differences in the actual and estimated costs. Lastly, there is the risk of the investment losing value once it is completed.

The optimization of economic and technical solutions requires the management of risks associated with over-investment or under-investment. The key factor in this process is controlling the efficiency factor (which is what determines the cost-benefit ratio). This includes costs for upkeep (materials, personnel, etc.), operational costs, the machinery and its dependability and quality, as well as the chosen energy production technology. Moderate risk is associated with the lack of cost control, late delivery, contractual fines, choosing auxiliary equipment and their compatibility, which will affect the efficiency. The energy sector in Poland is a heavily regulated industry, so prices can be set as "hard" (too high or too low), which also carries risks (Viskuba et al., 2021).

The application of financial engineering carries the most significant hazards when it comes to gauging the economic value of projects, particularly in regards to the utilization of operating and financial leverage. A lower-stakes hazard zone is the development of economic studies and the accuracy of the assumptions therein. In terms of the long-term operation of technical facilities, the least risk is linked to the precise measurement of energy resources. Choosing the form of financing is key to recognizing the areas with the greatest investment and financing risks. This is where debt and equity financing come into play. It enables the project to get off the ground and continue as intended. Dangers in this zone generally stem from the effective acquisition and management of funds, which can lead to the repayment of grants from EU schemes or regional funds. The average risk in this domain is revealed by changes in

financing conditions, i.e. loan interest, margin or equity ratios. Smaller but still possible other hazards within this group involve alterations in the likelihood of access to aid programs and public subsidies.

The selection of insurance involves potential threats, such as actual premiums rising higher than anticipated in the bidding process. The middle risk level encompasses the potential for modifications in the insurance market due to mergers or bankruptcies. Low risk involves the inability to protect against unanticipated situations or calamities arising from natural disasters.

**Executive stage** – describes risk areas such as staffing and training, detailed engineering design, contractor search and selection, negotiation and procurement and supply agreements, civil works and equipment installation, and commissioning.

The greatest danger of incorrectly assigning tasks is inadequate staffing and training programs. There is a strong possibility of recruiting inadequately skilled personnel and selecting the wrong incentives. Another problem is the absence of clear testing standards in the recruitment and selection process and the lack of resources for personnel development. There is also a low to moderate risk of restructuring and redundancies, as well as interpersonal conflicts. Finally, there is a small, but real, risk of these issues (Shimbar et al., 2020).

The main risk associated with the preparation of the detailed technical design is not meeting the legal requirements of the Ministerial Decree of 2 September 2004 (in the Journal of Laws of 2004, No. 202, item 2072). Lesser risks include errors in estimates, quotations, equipment and material. Additionally, there is a risk that the necessary agency approvals may not be obtained.

Finding the right contractor involves assessing a range of risks, such as a lack of clear criteria for selecting contractors, inadequate contracts, and an insufficient understanding of the financial standing of the investor partnership. Additionally, it is important to ensure the contractor holds the appropriate licences for the job and, ultimately, to establish the contractor's trustworthiness.

Outsourcing services from firms operating in the informal economy carries the least amount of risk, followed by the potential for non-compliance with the terms of a contract or agreement. At the medium-level risk is the potential for errors or formalities in the tendering process to render the whole process obsolete. Finally, the lowest risk can be found in poorly worded tender documents.

The greatest risk associated with the construction and installation of equipment lies in the condition and accessibility of the investment site. In order to reduce this risk, it is essential to have perfect design documentation and the appropriate adjustment of infrastructure elements. Additionally, the risk is increased by inexperienced workers, poor quality of work, changing requirements during the works, time and budget overruns, and the financial status of the inwestor (Okręglicka, 2022).

A medium level of risk is associated with staff shortages, technological issues, interruptions in the constant supply of building materials, and also malfunctioning or contaminated supplies. Other risks may include strikes due to personnel shortages, overestimation of results, problems with subcontractors, issues with the collaboration of involved parties, competence conflicts, and accidents and their impacts. The smallest risk identified is that of complications in cooperation.

The implementation of the test run carries with it the greatest risk of incompatibility between the infrastructure elements and the solutions used, which could lead to an inability to obtain an occupancy permit. There is moderate risk related to any regulatory ambiguities surrounding the trial run, and the smallest risk lies in the potential for "acts of God" or fortuitous events, such as extreme weather, natural disasters, contractual breaches, and strikes, which could cause delays and stoppages (Maciejowska, 2022).

**Generating unit use phase** – risk areas, such as commissioning and commissioning, management of the generating unit, obtaining a license to generate energy, energy sales contracts and optimization of the production process.

The greatest risk lies in obtaining approval and permission to use the completed work, verifying that all the required conditions have been fulfilled. This is also what makes payment for the work possible. Confirmation of the completeness or incompleteness of the relevant documentation is also associated with a moderate degree of risk. The least risky aspect of the task is adhering to the set timeline requirements from contractors (Wang et al., 2022).

The greatest challenge associated with running a generating unit is the requirement to continually assess and adjust performance in response to changing market conditions, legislation, and competition. Gathering data related to the operation of the power plant is also a moderate risk. Lower risks include effectively analyzing the data for regularity, periodicity, and reliability, as well as an aversion to change and move towards innovation.

The greatest risk when applying for an energy production concession is not fulfilling the demands of Polish Energy Law. Medium-risk concerns include the need to meet the demands of the many documents related to the investment (about 20). The lowest, but still present, risk is the time-consuming court proceedings due to the appeal process against the decision of the Energy Regulatory Office. Every effort should be taken to avoid having to utilize this remedy.

The conclusion of an energy sales contract carries the risk of incorrectly picking the type of contract, fluctuations in trading amounts and prices on the Polish Power Exchange, trading of "green certificates" on the stock exchange, and the potential for parties to fail to comply with the terms of the agreement.

The implementation of production process optimization has the potential to introduce errors during the design phase, reduce the dependability of production process analysis and fail to take advantage of the potential of the location. Minimizing the risk associated with this course of action involves identifying the worst-case environmental impacts and exploring the various

technical and economic solutions available. Selecting the most viable option from these possible variations can help limit the risk of adverse outcomes.

**THE OPERATONAL PHASE** – means commonly the end of the project. It consists of the stage of investment activity.

**Stage of investment activity** – focuse on risk areas, created by the challenges associated with achieving the assumed efficiency, ongoing maintenance, recovery of resources, modernization and expansion, liquidation, post-consumer extension of a technical facility or land reclamation (He et al., 2019).

The chances of reaching the projected productivity can be hampered by a number of risks, such as the use of complex technology, disruption due to changing weather, the probability of failure, environmental pollution, the influence of weather on operations and malfunctioning, the chance of failure of ground equipment, and the dangers of using chemical substances (when using geothermal energy). The smallest, but still present, risk comes from unseen defects in equipment and weak foundations (Li et al., 2021).

The risks associated with emergency planning can be minimized by regularly conducting inspections and replacing inferior equipment. The lowest risk is associated with preventive maintenance of the equipment.

The process of resource recovery can carry several kinds of risks, such as the damage or destruction of infrastructure elements due to technological progress, vandalism and theft, incorrect analysis of the profitability of modernization works, purchase of incomplete equipment, defective components and modification of requirements, and low-quality services (Rød et al. 2020). As the market is becoming increasingly competitive, newer and more innovative solutions are being implemented, which can also add to the risk.

The greatest risk associated with liquidation is the prospect of having to redeem contracts and bonds on demand, and the potential for costs to exceed the expected amount. A less pressing concern is the difficulty of selling the power plant's equipment, due to a lack of interested buyers or abnormally low purchase prices. Finally, the least significant risk is related to environmental protection, as the regulations in this area are very strict, making it an unlikely source of worry.

Activities that come after the consumer use of a technical object pose the most dangerous consequences to environmental preservation due to the lack of recycling resources. On the other hand, the available recycling technology is deemed to be inexpensive and uncomplicated, reducing the risk. Additionally, the potential for reusing recovered parts has been identified as a low-risk situation.

The greatest risk associated with land reclamation is the potential for land degradation and the subsequent inability to access the area. Furthermore, soil erosion and the cost of reconstructing the land are of medium risk. Lastly, the lowest risk is the possibility of having to modify the land's direction of use due to reclamation works.

## 5. Discussion

This article discusses the key findings which focuses on the energy sector, particularly renewable energy sources (RES). Poland, with its rapidly growing renewable energy sector and similarities to Germany, was examined as a case study. The article emphasizes the importance of risk management in RES investments and the unique challenges posed by these investments.

Poland's commitment to reducing carbon emissions and transitioning to sustainable energy is reflected in its ambitious targets for renewable energy sources, particularly wind, solar, and biomass. The article identifies a broad spectrum of potential risks associated with RES investments, including technical, regulatory, environmental, market, operational, and social risks. It stresses that these risks are not unique to Poland and are relevant to other regions as well. Effective risk management in RES investments requires a thorough understanding of the risks, their magnitude, and their potential impact on projects. The article underscores the need for a comprehensive approach to assessing these interrelated risks. Natural disasters are an exceptional category of risks in RES investments, as they are uncontrollable and unpredictable. There is necessary to acknowledges the severity and unpredictability of disasters and their unique nature. Not all risks are equal in their impact on project completion. The article emphasizes the importance of analyzing the sources of risk and allocating resources to mitigate them, highlighting that investors often prioritize risk management in their decision-making. This section underscores that effective risk management is pivotal in the success or failure of RES investments, as these investments involve complex decision-making processes. Investors often base their decisions on the actions taken to minimize risks. Government policies and regulations play a crucial role in mitigating risks and encouraging RES investments. Consistent policies are essential to address certain risks, such as regulatory changes or market fluctuations.

The article's exploration of RES investments in Poland provides valuable insights for investors, policymakers, project developers, and all stakeholders involved in sustainable energy solutions. It underscores the central role of effective risk management in realizing the potential of renewable energy sources and achieving a cleaner, more sustainable energy future.

## 6. Conclusions

The article looked into the details of the energy sector, with special attention to renewable energy sources (RES). Poland, a growing nation with similar climatic conditions and RES potential as Germany, a leader in the industry, was used as an example. Subsequently, the next stages of RES investment were identified and potential risks were identified. These risks are dependent on the specific nature of investments and the degree of their impact

on a given project. While most of these risks are related and intertwined, disasters are the only exception.

No matter where the sources of risk originate, the set of numbers associated with them will determine the potential for danger. Although all of these risks are important, their individual effects on the completion of the task may differ. Some risks that cannot be quantified can be more serious than those that can be measured. By analyzing the sources of risk, it is possible to determine the resources needed to reduce the likelihood of harm. Taking steps to reduce the risk associated with the investment will often be the deciding factor for investors when making their decision.

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# THE POWER OF SOCIAL CAPITAL IN BUSINESS CONTINUITY: CASE STUDY IN EAST FLORES

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**Introduction/background**: Entrepreneurs are expected to navigate the intricate business landscape with flexibility and creativity, utilizing social networks as a means of ensuring long-term viability. The theoretical framework of Embeddedness, as proposed by Mark Granovetter, underscores the significance of social connections in economic transactions.
**Aim of the paper**: The current study seeks to investigate the importance of social capital in the context of business continuity for entrepreneurs, with a specific focus on how social connections within networks contribute to the long-term success of their ventures. By examining the role of social capital in entrepreneurial endeavors, this research aims to shed light on the significance of social interactions in the sustainability of enterprises.
**Materials and methods**: Undertaking a qualitative research design, the study comprises interviews with four entrepreneurs hailing from East Nusa Tenggara province. The objective of these interviews is to explore the entrepreneurs' dependence on social capital, specifically their financial conduct and social resources within their networks, and how these factors contribute to their business success.
**Results and conclusions**: The investigation unveils the crucial significance of robust familial and familial relationships in preserving corporate longevity. These interpersonal connections furnish indispensable resources and backing, thereby accentuating the instrumental function of social capital in corporate commerce.
**Keywords:** Social Capital, Business Continuity, Bonding, Tax Consultant.

## 1. Introduction

As entrepreneurs are required to adapt quickly and have innovative ideas to keep up with the changing business environment. Business strategy and resource utilization is an effort to make the business sustainable (Sihombing, Rahardjo, 2014). The purpose of an established company is to manage and maximize its profits, so the measure of its success is how much

profit it makes. However, if this becomes the primary goal of entrepreneurs, it is feared that the business will not last long because what is seen in the industry is only economic activity. However, every entrepreneur also wants the business run to be long-lived. Mark Granovetter, a socioeconomic scientist, expressed his idea of Embeddedness: pre-existing social ties influence a 'rational' economic exchange and have been inherent in social networks. Mark Granovetter distinguishes structural Embeddedness, which refers to networks of access to people and resources, while relational Embeddedness includes feelings of trust in a social context (Andres, 2008). Forming bonds in social networks would give Burt (1992) information control and encourage improved performance (Krippner et al., 2007). This means the utilization of social capital in business operations can contribute to the existence of a sustainable company, competitive, and development.

Social capital is defined as a resource owned by an individual or a group so that other individuals can then utilize it by forming a relationship in which there are norms and values to protect these resources (Granovetter, 1985). For entrepreneurs, social capital is used to access important information, social resources, and support, thus positively impacting their ability to grow their business (Thai et al., 2020). Other research focuses emphasize the role of social capital bonds and bridges in corporate innovation (Eklinder-Frick et al., 2012), local networks (Laursen et al., 2012) and the part of geographic proximity (Murphy et al., 2016; Wang et al. 2017). Based on previous studies, researchers are interested in assessing the efforts of business actors to maintain sustainability, develop business, and remain competitive by looking at social capital applied based on the dimensions of social networks, social norms, and trust. Business continuity in remote areas (remote areas) becomes disturbed, including delays in the delivery of goods due to erratic weather disturbances. Hence, the scarcity of goods needs to be addressed through social networks.

Based on these problems, it is known that social capital has a role in business activities. The research was conducted at four locations in East Nusa Tenggara province: Lembata, Waiwerang, Larantuka and Maumere. The location of the study was selected because of the traditional values in society that are still maintained now and with the consideration that entrepreneurs still have social capital even though it has changed due to modernization and globalization. Business ventures in traditional areas still have affinities such as kinship or kinship. The purpose of this study is to explore taxpayers' efforts in implementing social capital for business sustainability.

## 2. Literature Review

### 2.1 Family: the pillar of business continuity and the foundation of a culture of values in the Entrepreneur/Business

A family business is a business that has at least two family members who control the company's finances and influence the company's policies (Anggadwita et al., 2020). A business is considered a family business if its management is passed from generation to generation (Anggadwita et al., 2020). In addition, a family business is a business that is owned and managed by people who have a relationship with the family. Family ownership has dominated business in China since the early 1800s. In Chinese society, the family is the centre of all relationships, influenced by traditional Confucianism (Ramadani et al., 2017). This affects the Chinese family business from various aspects, such as family, education, work, social ethics, group unity and the values of centralized authority, where the common interests of the group and community meet the needs of individuals (Anggadwita et al., 2020). Confucian theory calls for boys to take over family responsibilities as fathers, especially towards older boys (Ramadani et al., 2017). Kinship-based ownership structures can facilitate the creation of trade networks, for example, by securing suppliers at the upstream end of the production chain and buyers at the downstream end (Permata, Kristanto, 2020). Family is often the main foundation that supports business continuity. The support and involvement of family members have a significant influence on the long-term success of the company. Relationships with families are considered more robust because they share the same values, norms, and beliefs (Akintimehin et al., 2019). Social capital is around the informant and is the closest to supporting business continuity. One of them is the relationship with relatives and family. Relationships with family or relatives are considered more robust because they share the same values, norms, and beliefs (Akintimehin et al., 2019). Relationships between relatives are close based on trust and emotionally close (Ceci et al., 2020). However, in the study of Stasa Ouzký & Machek (2023) found that the internal network does not have a direct impact on the sustainability of the family business, but its role can contribute to the formation of external networks that are useful for improving performance. This means that they do not expand the social environment, but only strengthen existing social relations. Mizruchi (1996) then argued that relying too much on the same person in all situations can reduce the chances of success.

The participation of relatives/family is not entirely possible if self-reliance is absent (Östman et al., 2000). Sustainable business opportunities are supported by the benefits of trust based on social relationships (Josserand et al., 2017). Relatives are the smallest part of the social environment of each individual. However, the attachment that is formed between them is close and close due to their interaction and involvement in daily activities. In this context, the family is considered the most potent support network, so trust becomes the main factor in the construction and maintenance of this relationship. However, in traditional societies, faith in

family members is not always reliable, and there are also limits to economic inequality between generations (Moscona et al., 2017). Research by Uzzi (1996) has also shown that strengthening relationships can increase economic value by building trust between individuals.

### 2.2 Business Continuity

Business continuity can be seen in how to meet, develop, and protect the resources owned in each aspect (Zacca et al., 2015). The permanence of the business is a desire for all entrepreneurs, and is expected to carry out each of their activities to generate progressive profits (Agustina, 2022). The development of the business cannot be separated from leadership style, family values, cultural values, and management ability to build a long-lived business for generations (Dayaqarsa, 2022).

A sustainable company refers to a company that can achieve long-term business goals and add value by incorporating economic, social and environmental aspects into its business strategy (Agustina, 2022). Sustainability is used to develop and utilize resources, allowing individuals to meet current and future needs from an environmental, economic, and social point of view.

Entrepreneurs are part of social networks; they use social capital for entrepreneurial activity (López-Nicolás, Meroño-Cerdán, 2011). Social capital supports risk-taking, contributing to business performance sustainability (Reddy, Sambaiah, 2019). One of the advantages of social capital for business actors is access to information and the development of resources to carry out business activities(Kulkov et al., 2020).

Social capital is a social connection for entrepreneurs to acquire assets necessary for business performance. Resources accessible to entrepreneurs through social networks allow them to identify business opportunities and challenges (Bhagavatula et al., 2010). According to the Organization for Economic Cooperation and Development (OECD), social capital is a shared network of norms, values, and understandings that facilitate group cooperation. The closer a group is, the farther it can be from the other group. Social capital has a role in the behaviour of individuals in making business decisions. Businesses need to be accepted where the company's location is so that entrepreneurs will build conformity between social values and behaviour in the environment. Social capital is substantial when norms and cooperation exist (Fukuyama, 1995). Social capital is a resource owned by other individuals to be used by others.

### 2.3 Dimensions Of Social Capital

Social capital is not capital in the sense of money, property, or wealth but as an asset or capital in social relations (Kulkov et al., 2020). Without Social Capital, an entrepreneur cannot obtain material benefits and achieve other successes optimally. A person who applies social capital through good relations with certain parties can obtain material benefits. Social capital is also a social exchange distributed through individuals' internal and external relationships (Josserand et al., 2017). Woolcock (2003) divides social capital into three types, namely

bonding, bridging, and linking. Binding social capital (bonding social capital) is a strong relationship because it has common demographic characteristics, attitudes, behaviours, and information and resources available; it generally involves family and relatives (Claridge, 2018). Bridging social capital is a weak bond because individuals in groups have differences in culture, social class, identity, race, religion, and others but have similar interests or goals (Claridge, 2018). This means that the relationship is motivated by a conscious weakness, so an attempt is made to balance it by working together to realize each other's goals. Characteristics of organizations with social capital, such as networks, norms, and trust, provide ease of coordination and cooperation to obtain mutual benefits (Putnam, 2000). Social capital was first proposed by James Coleman in 1988, who defined it as the ability of individuals to collaborate to achieve common goals. Previous research has shown that social capital can be divided into three dimensions (Thai et al., 2020). These dimensions are structural (connections and closeness of relationships/social networks), relational (beliefs), and cognitive (values and norms).

Networking refers to the structure of relationships that take the form of business relationships, friendships, or membership in a particular group (Josserand et al., 2017). The relationship between the dimensions of social capital and networks is very close because both influence each other. Social capital can strengthen networks by expanding relationships and increasing trust in them. On the other hand, networks can also enrich social capital by reinforcing prevailing social norms and values (Josserand et al., 2017). For example, in the context of a family business, social capital such as trust and loyalty between family members can strengthen the Family Business Network, which in turn can increase the ability of the family business to survive and thrive in the long term. Thus, the relationship between the dimensions of social capital and networks is mutually reinforcing and complementary. Mark Granovetter found that economic activity exists within a strong network of personal relationships. In acquiring networks, developing personal relationships between entrepreneurs and other financial actors, such as customers and suppliers, is as important or more important than the economic transactions that occur (Granovetter, 1985). Economic activity is not done by foreigners but rather by people involved in long-term and sustainable relationships. According to Bourdieu, business networks create social capital (Bondeli et al., 2018). Studies conducted by Denize & Young (2014) showed that price information could be more effective in small-scale trading groups due to stronger network ties, facilitating the fulfilment of traders ' commitments. Network bonding can encourage the creation of trust, information transfer and mutual problem-solving (Uzzi, 1996). Social networks have the concept of a social relationship bound by faith and maintain that trust by maintaining existing norms. Social networks can be formed by wanting to know each other, providing information, and benefiting each other in doing or overcoming something. Open and continuous communication is needed to meet these 'mutual' needs (Josserand et al., 2017). The network concept assesses that individuals and groups have different interests in utilizing resources (wealth, power, & information) that are

adapted to their social context. Therefore, social networks are important in people's lives, because it can be said that there is no human being who is not part of social networks.

In business, the dimension of social capital is also related to norms. Social Capital, which includes networks of social relationships, norms, and shared values, influences the formation and impact of norms that guide interactions and transactions (Thai et al., 2020). For example, in family businesses, social capital, such as trust and emotional engagement between family members, can reinforce norms of cooperation and family loyalty (Deferne et al., 2023). On the contrary, the norms that exist in business can also form and strengthen Social Capital. Norms that encourage cooperation, integrity, and mutual respect between individuals or groups will establish patterns of interaction that enhance social capital in the form of trust and engagement (Thai et al., 2020). Thus, the relationship between the dimensions of social capital and norms in business is mutual influence and mutual reinforcement, where social capital forms the prevailing norms, and these norms also reinforce social capital. Norma is a rule both in written and unwritten form that has been agreed upon by all members of the group which must then be complied with, and there are sanctions if they violate the rules (Bondeli et al., 2018). Social norms are described as an unwritten standard of behaviour followed by a person according to the demands of the majority according to the social environment (Bicchieri, 2014). Social norms are social functions rooted in culture, traditions, values, and habits carried out by a group and are believed to maintain the power of social networks (Fan et al., 2019).

Norms are built and maintained to strengthen the group. Social norms represent a group because they act as characteristics that describe what a group thinks feels, and does. The power of social norms in shaping behaviour is found in the dynamics of Social Psychology that arise in a group, such as the tendency of group members to see each other for guidance, affirmation, and approval, as well as the pressure to achieve uniformity generated by the group towards the actions carried out (Schlenker, Helm, Tedeschi, 1973). The formation of social norms results from group interaction, which includes social values, culture, customs, traditions, habits, conventions and others. The parties involved in a business relationship have expectations of behaviour reflected in the norm so that such behaviour binds, guides, controls, and regulates appropriate and acceptable behaviour (Ojansivu et al., 2022).

Many theorists argue that the social structure, influenced by economic actors, was solid in pre-industrial societies and weak in industrial communities due to modernization. This thought assumes that financial transactions in today's society are based on rational calculations that are not influenced by social ties and kinship. The opposite thinking states that since economic life is part of social life, social attachment occurs not only in modern society, where economic activity cannot be separated from the social context. This led Granovetter to explain the polarization of the two poles of thought, which he called oversocialized and undersocialized. The first is oversocialized, which means that socialization strongly influences economic behaviour. The argument is that society is very sensitive to the opinions of others because organisations follow a system of values and norms that develop into a consensus that is

considered through socialization (Schlenker et al., 1973). This view says that any economic activity and decisions are regulated and guided by the influence of the prevailing system of values and norms. The second is undersocialized states that financial behaviour is a unity that does not depend on socialization factors. Economic actors act based on relationships and social structures that follow rational choice. Granovetter rejected both ideas. Therefore, in Embeddedness, Granovetter describes the characteristics of trust and distrust in the interaction between economic actors. Economic activity becomes disembedded when the social order among economic actors is based on rational calculations. This usually happens if they do not know each other, so there is no mutual trust. It is different if economic actors know each other as a whole, which can lead to trust and attachment so that there is mutual trust in the transaction process.

The dimension of trust is one of the essential keys in the concept of social capital. According to Fukuyama (1995), trust is a critical component in cooperation, giving rise to social capital. Trust can be built with open communication and mutual respect between individuals in the group. Trust is destroyed by excessive selfishness or opportunism. Once mutual trust has been established between individuals in the group, the next step is to maintain trust in the relationship to make it more robust and sustainable. Mutual trust is needed not only in business interests but also in friendship, work and family relationships.

## 3. Research methods

The study used a qualitative approach. The source of data used is through observation and interview. The interview method used is in dept interview is a question and answer with or without using interview guidelines/is open where all informants understand the concept of research (Bungin, 2011). This study was conducted at four locations: Larantuka, Waiwerang, Maumere and Lembata, East Nusa Tenggara province.

### 3.1. Research Informants

The informants of this study consisted of five people who are entrepreneurs. The first informant was named TK1, with a business engaged in the transportation of fuel (ships and trucks) and a building materials store located in the city of Larantuka, East Nusa Tenggara province; the second informant was named TK2 who had a leading business in the form of refuelling stations (gas stations) with additional companies in the form of grocery stores that sell products such as groceries, machine spare parts and fishing boat needs, this business is located in Waiwerang, East Nusa Tenggara; The third informant TK3 with business D Shop building materials, electrical equipment and equipment fishing boats whose location of business activities are in Waiwerang, East Nusa Tenggara; fourth informant HM as entrepreneurs

distributor of groceries and grocery stores in Maumere, East Nusa Tenggara. A summary of these informants can be seen in the table below:

**Table 1.**
*Informant Background*

| No | Informant Initials | Business Type | Location |
|---|---|---|---|
| **1** | TK1 | Fuel transportation services (ships and trucks) and building materials stores | Larantuka, NTT |
| **2** | TK2 | Grocery store (ship spare parts) | Waiwerang, NTT |
| **3** | TK3 | Shop building materials, electrical equipment and fishing boat equipment | Waiwerang, NTT |
| **4** | HM | Food & Grocery Distributor | Maumere, NTT |

**Accessible social resources (networks)**

The development of the business world requires business actors to have social relationships with parties that can support and achieve their business goals. One of the parties that supports and is actively involved around informants is the family since most of the management structures are run by descendants and family members who also work in the company. At the same time, the supplier is the party in charge of delivering the product (Ernawati, Hamid, 2021). In addition, informants also see a link between taxes and business activities, so the role of tax advisors in assisting informants in updating tax regulations is increasing. Then, for users of goods and services produced by producers, the part of consumers is vital. Without consumers, the entire supply chain cannot function.

**Table 2.**
Classification Of Social Networks

| Literature | Internal Network (Bonding) | External Network (Bridging) |
|---|---|---|
| (Josserand et al., 2017) | Employees | Customer |
| (Akintimehin et al., 2019) | Family, close friends, colleagues, employees, interns, & business partners | Customers, suppliers, competitors, distributors, creditors, trade associations & professionals |
| (Claridge, 2018) | Family, close friends, neighbours | People of different cultural, socioeconomic and age backgrounds |

Source: data processed by researchers.

## 4. Results and Discussion

### 4.1 Accessible social resources (networks)

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Source: data processed by researchers.

The network is an internal and external relationship (Akintimehin et al., 2019). Based on the table above, the grouping of internal and external networks in the entrepreneur's environment can be seen. Internal networks are individuals or groups within the company's scope or have a close relationship with the owner (social bonding). While external networks are individuals or groups outside the company's size, a connection must be formed through cooperation (social bridging). Networking provides social cohesion by encouraging people to collaborate and not just with people they know directly to obtain mutual benefits (Field et al., 2010). To get these benefits, networks must be based on trust, values, and norms. The economic benefits of social networks that is, new information, is more quickly obtained, and adding relationships can strengthen ties and interpretations of non-economic actions carried out in social life (Granovetter, 1985).

**Network Of Relatives/ Family**

During this time, the sustainability of the family business is still often a question. There is an assumption that the next generation can potentially destroy the family business (Ward, 2004). On the other hand, some family businesses can still last for years (Toshio Goto, 2014).

Background: the informants ' business is a family business; they are the next generation of the business that exists today where their parents originally founded the company. As the primary founders of a family business, parents are responsible for building character and preparing the next generation for a successful leadership transition. The next successor is ready for one person and the whole family. The informant, as the next successor, is the person who is willing to replace the owner and management of the company in succession planning. The informants admitted that the involvement of family members was beneficial in running their business.

*In the past, this business was built by my parents and was not transferred directly but carried out gradually. Like parents diligently provide direction, often invited to meet with business relations, taught business mechanisms and family values in business, yes, that is so (informant TK3).*

*Yes, this family business is indeed fortunately if we are in trouble, other relatives will want to help. Certainly their ability and ability to help (informant TK2).*

*Yes, because this is a family business and some relatives are involved. They help a lot and maintain contact with outsiders (HM informant).*

*I prefer to defend the organizational culture, and indeed, this business can also survive because of the good name of the old gang (Informant TK1).*

Based on the informant's statement above, the role of the family in their business is very significant. However, it does not rule out the possibility of barriers between family members, such as conflicts of interest (Ward, 2004), succession (Santarelli, Lotti, 2005), and the absence of mutual trust (Healy, 2001). However, informants TK1 and TK3 showed that to anticipate the emergence of problems in the family business, they uphold family values and organizational culture that have been embedded since the first time the business operated. Although Anggadwita et al. (2020) state that the succession process is less successful if the company adheres too closely to traditional business models. On the other hand, HM informants have a different view that family members can bridge to connect with business partners. Informant Tk2 revealed the strength of the family business because members of it can work together to help each other if there are obstacles. This can be done if the business they have is at the same level, meaning that business conditions are stable. Furthermore, informants also have a strong relationship with close relatives, where their efforts exist equally and support the main business of the family.

*... Then there are also others that, right, I also have a building Store now there is another Tk3 brother. We also have a good relationship with him because we often borrow products from each other if, for example, the stock is running out (Informant TK1).*

*There are some relatives, so we often exchange what goods they need later to borrow, and vice versa (Informant TK2).*

*... and coincidentally the same as his business cousin. So you can help each other, for example, if I receive a lot of cement orders, but the stock is limited, so I take it first from Tk1's brother (Informant TK3).*

*Incidentally, the Tk2 brother is the same as selling household supplies. TK2 often borrows goods such as oil, flour, rice, and others. In addition, if with close relatives can ask for financial help in the form of (HM informant).*

Based on the statements of informants TK1, TK2, TK3, and HM, their businesses have a sense of connection, so they help each other and use them positively. These networks must have strong ties and create cohesiveness and solidarity to achieve common goals (Montemerlo, Sharma, 2010). In addition, Akintimehin et al. (2019) explain that internal networks such as

family, friends, and colleagues can participate in business advice and financial loans. This is slightly different from the results of this study because, from the interviews above, it can be seen that the informants have family relationships and manage similar businesses; they help each other in the availability of goods (exchanging products, lending freight services, and lending commercial interests. Related to mutual borrowing of trade goods, it occurs when certain goods are out of stock and have not received a shipment from the supplier. The informant will temporarily borrow from similar traders. Because later, if the informant has supplied the goods, it will be returned to the merchant concerned. Furthermore, it is done with the intention that the product's completeness should be the store's identity. The way informants do business has become a common culture in the region, where such behaviour is rarely found in big cities.

One of the closest Social Capital informants in supporting business continuity is the relationship with relatives and family. Relationships with family or relatives are considered stronger because they share the same values, norms, and beliefs (Akintimehin et al., 2019). The research can support the informant's statement that if they are related to relatives from the same environment, their education is similar so that a sense of kinship arises by itself. According to Josserand et al. (2017), internal network relationships are created through personal interactions based on trust, loyalty, and closeness. Resources around informants, for example, in the same industry where they lend goods to each other, can only be used if the other person has strong connections and a sense of trust. So, this relationship has strength that comes from within or binding capital. Binding Social Capital describes relationships within a group characterized by a common background and, therefore, close (Claridge, 2018).

Relationships between relatives are close based on trust and emotional closeness (Ceci et al., 2020). However, the study of Stasa Ouzký and Macheki (2023) found that the internal network does not directly impact the sustainability of the family business. Still, its role can contribute to forming functional external networks for improving performance. This means they do not expand the social environment but only strengthen existing social relations. Mizruchi (1996) then argued that relying too much on the same person in all situations can reduce the chances of success. The participation of relatives/family is not entirely possible if self-reliance is absent (Östman et al., 2000). Therefore, informants need new contacts to interact with heterogeneous groups, which helps increase social capital and fill the weaknesses of homogeneous groups.

**Supplier Network**

A supplier is a party whose role is to sell goods or products to merchants. The informants work with suppliers from big cities to deliver goods to their stores because the limited products in their area make informants net suppliers outside the island. The process of shipping goods using sea routes, namely EMKL and air routes. On the other hand, informants have constraints in their relationship with suppliers—obstacles experienced by informants, such as the delivery

process, production costs, and shipping transportation. The barriers informants face are due to erratic weather and scarcity of goods in the informant's area.

*Suppliers are outside Java, shipping can be two ways via ship or plane. But sometimes it is hampered by weather changes so delivery can be late (Informant TK2).*

*If for goods such as cement, iron, ceramics, electrical equipment and ship equipment, the distributor is from outside all. The delivery uses EMKL because it is cheaper, but sometimes I visit their place directly. In addition to looking around, I also want to discuss the constraints related to the product and delivery process (Informant TK3).*

*Ship and truck spare parts suppliers from Surabaya, as well as building stores. For heavy goods such as cement, large ship parts are sent through EMKL; for small ones, such as spare parts, they usually use lion expeditions. The delivery schedule is always specified, but sometimes I ask to be sent faster when it runs out. Well, that's sometimes a problem too; it can be because of the uncertain weather and transportation of long trips from Java to come here (Informant TK1).*

*My Supply of goods is sent from Makassar, but there are also those on the island of Java. If the fastest yes is near here, they can be relied upon if the goods run out at any time. Well, if the one in Java is sometimes still a problem with transportation (HM informant).*

Suppliers as business partners make it possible to increase competitive advantages, for example, by improving the quality of products and services (Akintimehin et al., 2019). Other research also confirms that suppliers can be partners and competitors because they depend on the same customers (Wilhelm, 2011). Buyer-supplier-supplier networks (triads) lead to intra-network dynamics (Choi, Wu, 2009). However, the informant needs the supplier to be a helpful partner in the product supply, and the informer and the supplier do not depend on the same consumer. The consumer scope of the informant is only in the scope of the company's activities.

On the other hand, informants have constraints in their relationship with suppliers. The conditions informants face prove that this relationship is limited by space and time, so interactions become rare and risky (Claridge, 2018). The risks experienced by informants are related to environmental uncertainty, distance, and demand uncertainty (Liao, Hong, 2007). The network formed tends to be in a weak bond because the interactions are more tenuous (Claridge, 2018). In addition, communication can be done remotely, so meetings are held if there is an emergency or certain conditions are needed.

**Tax Consultant Network**

Taxes have a role in business activities because if there is an economic benefit, there is a tax obligation. Informants are very careful with tax matters, because taxes can interfere with business continuity. The relationship that informants form with tax consultants is also bridging capital, which is based on the needs of informants regarding taxation.

*So if there is a problem with a business that says it is almost bankrupt, especially if it has something to do with taxes and until it gets a tax audit for us, it is a disgrace. And I recruited a tax consultant who happened to be a former tax employee, so he must be understanding and reliable. But it's a bit of a stretch to stick to the rules (Informant TK3).*

*Tax-related has been helped by tax consultants, ranging from counting to sharing knowledge as well. Of course with them I am more careful because the rules also bind them (HM informant).*

*Of course, cooperation with tax consultants related to this business taxation. The relationship is based on contracts and rules, so we can't play with taxes either (Informant TK2).*

*... I hired a tax consultant in hopes of helping with tax-related matters. Although consultants from Java are far from me in the area, and there are often misunderstandings via telephone, they periodically come to my place (Informant TK1).*

The motives of the informant's relationship with the tax consultant can be strengthened by Uzzi's (1996) research that the network encourages sharing relevant information, close coordination, mutual adjustment, and problem-solving. Tax consultants are essential in the tax system and influence tax programs (Misra et al., 2020). Establish a network with tax consultants because it has interests between businesses and taxes, so social responsibility arises. Companies located in high Social Capital Index regions will feel responsible for their environment (Chircop et al., 2018). Informant TK2 said that tax consultants are used to help business tax affairs. Informant Tk3 added that a problem with taxes, especially until there is a tax inspection, is considered a disgrace. The point is to use tax consultant services to mediate between informants and tax officials and help prepare tax reporting. All the informants agreed that the relationship with the Tax Consultants was rigorous because they were subject to regulations and ethical standards (Nu'man et al., 2020; Bondeli et al., 2018).

**Consumer Network**

Forming bonds with individuals outside the social environment has a significant role in the performance of business units. Understanding the difference between strong and weak ties is essential, especially in relationships with external clients such as suppliers, customers, R&D partners, distributors, and competitors (Josserand et al., 2017). Consumer networks are becoming a key element in the modern business landscape, essential in shaping consumer trends and decisions. The importance of the consumer network lies in its power in disseminating information and influencing purchasing decisions. Interviews with informants revealed:

*I have a good relationship with customers, especially customers from the village community, where these people come down from the mountains using a pickup truck, come to my place and eat to be sold back to their residence in the village's interior (HM informant).*

*Every Monday and Thursday, there is a market day; many consumers who come down from mountain villages buy goods in large quantities here to be resold or bought for their family's*

*needs. On a typical day, sales are expected. Sometimes they also bring the goods first because they often buy them at the store, then pay later when they sell (informant TK1).*

*If you have known consumers for a long time, the relationship is more relaxed, but consumers sometimes go around, there they often pay in arrears and bid low prices (informant TK3).*

*Yes, there have been those who bought products that did not match their expectations, and they finally returned them. There are also those who ask for many discounts because they have subscribed. That's if it's not a subscription, yes or no (informant TK2).*

Informants TK1 and HM stated that the relationship with consumers, especially merchants, can provide benefits. The company's ability to establish relationships with consumers can impact the effectiveness of marketing efforts in meeting consumer needs and preferences. In the study by Josserand et al. (2017), frontline workers seek to build relationships with business networks such as consumers and suppliers. At the same time, the informants in this study are traders in direct contact with consumers. This makes consumers more comfortable and confident because those who serve them are the direct owners (Blom et al., 2021). The direct participation of the informant in the sales process with the customer provides a better communication space, understanding local needs and creating more suitable products for the local market (Mainardes, Sousa, 2022). The importance of the active role of consumers in social networks provides a deeper understanding of the different forms of social capital (Shyu, 2016).

However, informants TK1, TK2, and TK3 revealed that proximity to consumers can cause difficulties because they often have a lot of demand. In this case, it is natural that this happens because the bond is weak and between the informant and the supplier has their own will (Claridge, 2018). On the other hand, the bond is weakened by not having a standard understanding (Josserand et al., 2017).

### 4.1 Strategies For Accessing Social Resources (Norms)

After forming a social group, the informant explores what social resources can be utilized and how to get these resources. Of course, by still observing the norms and values that apply, these resources can be absorbed optimally. Business growth can not be separated from the leadership style, family values, management systems, and organizational culture needed to build the company's longevity (Anggadwita et al., 2020). This concept of the social group becomes an ordinary object of reference that unites various social problems within the boundaries of sociological disciplines. Although each group and type of group has its distinctive features, the issues are connected with the concept of a social group (Putnam, 1993).

#### Norms in kinship or kinship

The informants revealed that they still apply the family values taught since childhood. Mutual respect, appreciation, and acting appropriately are the norms of decency applied in business relationships. This attitude is intended to avoid conflict because although they are close

relatives, the business they manage has become their respective focus. Like the concept of kinship, the informants seemed to respect each other with tolerance and responsibility for their respective roles. In making decisions, sometimes ask for opinions from relatives so that there is solid cooperation, which can minimise conflict.

*Not in writing, because right from childhood, it has been taught how to behave in the community, with consumers. So do the brothers and relatives who run their businesses. If there is a problem in the business, help as much as possible, and know which limits need to be helped (Informant TK1).*

*What is certain is that we still apply Family Values and indigenous culture. Respect and honour each other and do not interfere too much in each other's business. If there is a request, please let us help (Informant TK2).*

*It's like my own family. Respect each other, appreciate each other, and still get along. However, the business that is run is a legacy, so do not disperse. As much as possible, we help each other, but on the other hand, we also do not force ourselves to be too curious (Informant TK3).*

*Of course, fellow relatives still help each other, such as often discussing each other's business constraints and providing opinions or ways out (HM informant).*

Informant areas are still classified as rural areas and still uphold the norms, local culture, and a high attitude of trust (Anggadwita et al., 2020). So, the informant's behaviour in business and daily life with conventional rules encourages conformity (Bicchieri, 2014). This means all standardized behavioural criteria that are based on customs, traditions, norms, practices, and values (Sherif, 1936). Regarding relatives involved in the management structure, it will be prone to conflict because differences of opinion and a sense of ownership make them entitled to determine the direction of the company. Norms and written rules need to be applied to respect each other and not divide the relationship. In addition, norms can create an atmosphere of fair and healthy relationships with others. If the standards in an environment are correctly applied, it also builds an organizational culture that can be the basis of behaviour. The kinship that informants create is considered an essential aspect of social society because kinship relationships have a significant role in the structure and social behaviour of the period (Ensor, 2016).

Kin and family relationships that still maintain values or norms that have been entrenched since the beginning maximize the exchange of information and as a factor that encourages cooperation (Murdock, 1949). So that organizational goals can be achieved, knowledge can be expanded, and the effectiveness of collaboration can be increased (Healy, 2001). In the family business context, the key to implementing a transparent and open culture is the importance of good relations between family members. The results of this study confirmed that entrepreneurial potential exists in an organization's social connections. To achieve a sustainable business, a family business must work on creating and accumulating social capital. Creating

a transparent and open culture is an essential first step in the entrepreneurial process, whereby members can clearly express values and ideas (Alftan et al., 2015).

**Norms with suppliers**

Based on the four informants, it can be seen that norms are social values that are used as provisions for behaviour in the community. Norms are also mutually agreed rules to minimize conflict. Social values, such as family values, often occur when suppliers interact. The informant's relationship with the supplier is also based on a cooperation agreement contract.

*Such as being honest and open about information related to operations and understanding each other; if there are obstacles, they will discuss it well and find a way out together. So that we can have an understanding." (Informant TK1)*

*"Oh sure, maintain good relations with anyone with a role in this business, including assets. We also have the principles of work and consequences written down; it is enough to do so that problems do not arise in the future (Informant TK2).*

*There are some rules that are guidelines in the cooperation, such as discipline and responsibility, also commit so that there is no action beyond the limit (Informant TK3).*

*Mutual respect and appreciation are important because we must use Ethics in interaction with important parties. Anyway, the good values taught since childhood should not be lost (HM informant).*

Suppliers are parties outside the informant's business and have a role in distributing goods to the informant, so establishing relationships must be based on Business Ethics (Bondeli et al., 2018). In their relationships with suppliers, informants apply unwritten social norms, where the behaviour is carried out intuitively and has social sanctions that can prevent a person from committing irregularities (Koller, 2014). Furthermore, informants TK2 and TK3 added that the bond with a person is business cooperation, so there are also written rules that bind them. According to Putnam (2000), norms are a set of perceptions, values, desires, and goals to support cooperation. The informant-supplier relationship has been considered one of the most critical business areas. Industry informants and suppliers have different views on the key benefits of a close relationship between the two. Most informants prioritize purchasing efficiency, suppliers prioritize price and production stability, marketing efficiency (e.g., low-priced goods), and optimal planning capabilities. Therefore, informants should consider choosing suppliers and be aware of the potential consequences of relying too much on one party.

Based on the four informants above, norms are known to be social values that are used as provisions for behaviour with suppliers. Standards are also mutually agreed rules to minimize conflict. It is known that informants use family values and cultural values to play a role. A “mutual " attitude in the context of kindness is included in cooperation to maintain social

relations. Also, empathizing with others will support the performance of informants and business associates.

**Norms with tax consultants**

A tax consultant or advisor plays a vital role in the taxation system. The proficiency of tax advisors influences taxation systems and programs in providing recommendations and their professional expertise (Misra et al., 2020). Tax systems and programs are influenced by the value of professionals and the best advice given by tax advisors. Tax consultants play a strategic role in combining the interests of both parties as well as preparing appropriate tax recommendations. So, social norms with tax consultants lead more to ethics.

*We must respect and maintain the confidentiality of information (informant TK1).*

*It can provide guarantees that work related to tax agencies can be completed (informant TK2).*

*Consultants must adhere to certain rules and codes of Conduct, which sometimes makes communication feel formal and less flexible, and some things are a bit troublesome, especially about responsiveness and speed (Informant TK3).*

*Usually, strict rules about ethics are good because they make consultants more professional, maintain integrity, and have an important role in my business. Although sometimes a bit stiff, their experience and knowledge helped smooth my business, especially in terms of taxation (HM informant).*

The tax consultant acts as an advisor in the taxation task, for the client must understand the social norms of the client (Misra et al., 2020). Consultants who pay attention to the values of professionalism will carry out the standard models they uphold in conducting information searches, which become the basis for the recommendations they provide to clients. Therefore, the suggestions given to the client are not based on the client's interests but on applicable standards and norms and the public interest. The relationship of informants with tax consultants is more directed to ethical norms that have a strong link with the quality of the relationship and commitment (Ndubisi et al., 2014).

**Norms with consumers or customers**

In a diverse local society, the relationship between entrepreneurs or business people and customers is not only based on the exchange of goods and services but is also reflected in how local norms shape and influence business dynamics. Through in-depth interviews with several entrepreneurs, research informants can permeate unique views and deep insights into local bars in shaping business-customer interactions. Assael explains that there are situations in which a person has a positive view of an object, such as a product or brand, but buying does not follow that attitude. Certain conditions, the environment, and social-cultural factors can cause consumer attitudes and behaviour differences. If marketers can anticipate consumer behaviour by understanding consumer attitudes, both cognitively and affectively, this will be an advantage

for marketers. Thus, marketers can design the most appropriate strategy to meet consumer desires. When confidence in the product has been ingrained in the minds of consumers, along with a commitment to make a re-purchase, it most likely occurs at the stage of re-purchase (repeat buying).

The success of local businesses is based not only on financial gain but also on the ability to embrace and respect local norms, answer customer needs, and support the community's well-being. With a wise balance between tradition and innovation, local businesses can continue to thrive in changing market dynamics. Norms of involvement in the community become an integral element in local business dynamics and underscore the role of business people/entrepreneurs in empowering the local economy. With the informant, the researcher conducted an interview about how to support local activities as the primary strategy.

*When my business benefits people, they also support me. We need each other. I always seek ways to empower local producers and give customers sustainable choices. It's not just business, but social responsibility - he said.*

*My biggest challenge is probably to keep the service consistent, especially if it's crowded with customers or there are other changes.*

*I give you a grade of 8 to assess the quality of my business services. Although you try to give your best, some things need improvement to get a 10.*

*I believe consumers are happy because we are quick to respond and love the right solution for each of their problems. We always respond quickly and try to find solutions that satisfy customers. Sometimes, I also give compensation to less satisfied consumers.*

Personal interests can influence norms, and individual interests are influenced by psychological factors (conformity Psychology) (Elster, 2020). It is clearly seen that the relationship between models and customers plays an integral role in the sustainability of local businesses. Honesty, community involvement, and an understanding of local values are the foundations that combine tradition with business development. To achieve sustainability, entrepreneurs need to understand local norms and find ways to align them with innovation. Success is about profitability, empowering local communities, and caring for cultural heritage. In the face of ever-evolving business dynamics, building mutually beneficial relationships between norms and consumers is key to achieving sustainability in local businesses.

### 4.2 Utilizing Social Resources (Trust)

#### Trust with relatives

Sustainable business opportunities are underpinned by the benefits of trust based on social relationships (Josserand et al., 2017). This trust results from the quality of previous work relationships and frequent individual interactions. In public relations, mutual trust becomes the principal capital for the network group to achieve its goals. It is essential to have a sense of confidence in using social resources belonging to other individuals, which is helpful so that the

relationship is long-term and can be utilised for as long as possible. About the family, trust builds automatically.

*Yes, there must be a sense of trust; it's still my relatives. For example, they borrow transportation services, I believe at least for transportation, or the vehicle must be kept safe and in its condition (Informant TK1).*

*I just trust my brother, right from childhood living together. You know how his character is (Informant TK2).*

*Oh yes, there is; we trust each other in everyday life and in the business sphere. If in our business we often exchange fuel transportation services, yes, just believe that in their hands it must be safe, as long as it is safe even if there is damage, yes, it is responsible for replacing (Informant TK3).*

*It should be noted that they must be responsible, keep their promises, and not harm each other (HM informant).*

Relatives and family constitute the smallest social sphere that the informant has; the established relationships are intimate and close. This is due to interaction and involvement in everyday life. Relatives and family are said to be the best support system, so to create trust is very easy. Informants are still a traditional society; the faith of relatives or families in it can be imperfect, and economic inequality between generations also has limits (Moscona et al., 2017). Similarly, research by Uzzi (1996) showed that building relationships can add financial value by fostering trust between people.

Previous research can support the statements of informants TK1, TK3 and HM, who maintain confidence in utilizing resources in cooperation with a responsible attitude. For example, when the Tk1 informant borrowed a bag of cement from TK3, TK1 immediately changed the product after receiving or returning the adhesive. By helping each other, they are seen as trustworthy people and become one team that develops a business. Meanwhile, TK2 informants believed more in internal, interpersonal relationships born at a young age and believed that mutual trust was born automatically from the beginning of their relationship. In addition, they also often communicate openly and use words that are easy to understand so that the speaker can understand the point well.

Trust in family relationships is very high, and the values of togetherness are visible and robust to maintain integrity (Morris, Sexton, 1996). The belief in family relationships also needs to be formed by going through the process so that it does not suddenly appear. The trust built by the four informants above is continuous interaction to know each character, nature, and behaviour. Moreover, they are members of one culture, where they live in the same environment and are educated similarly. Then, automatically, a sense of trust arises.

**Trust with suppliers**

As an entrepreneur, trust becomes valuable capital to maintain excellent, long-term relationships. Faith can not suddenly appear; it takes some elements to create it. It is known that forming and maintaining trust takes time and strategy. Trust in each other will result in a relationship that can benefit all parties. The benefit of faith in a business relationship is a mutual understanding of needs and desires in various aspects, which can make the business continue to grow (Josserand et al., 2017).

*It may be a little more difficult to build trust with suppliers because they differ in their social environment. It's not impossible, of course, it takes a strategy to bring it up. Like, often communicate to equate understanding (Informant TK1).*

*It is essential, yes, to create mutual trust with suppliers. It is difficult to maintain it, so as much as possible, yes, as I said, the need for mutual attitude earlier (Informant TK2).*

*Oh yeah, we have to trust each other. With suppliers, yes, is open and honest regarding quality, product prices, delivery times and more (Informant TK3).*

*Of course, it is important to trust the principals; it is one of the strengths in maintaining a long-lasting relationship. The approach can be emotional by empathizing with fellow human beings. The performance of each can also prove it (HM informant).*

Based on the statements of the four informants above, building mutual trust is needed to facilitate operational activities by becoming a business partner. Informants TK1 and TK2 recognize that creating and maintaining trust with business partners requires strategy. This is because the existing bond is relatively weak, so the relationship becomes stressful. In addition, there are differences based on identity, social class, race, religion, expertise and others. Tk3 informants then revealed that mutual trust can be built through open communication and mutual honesty in explaining each other's work. This is in contrast to HM informants, who have their own methods of interpersonal relationships and the effectiveness of both parties. Research has also shown that, regardless of the level of analysis, trusting parties must have a certain degree of vulnerability for trust to function (Moorman, Zaltman, Deshpande, 1992).

This means that this study is consistent with previous research obtained from the findings of informational interviews. HM informant stressed the importance of trust between actors as a strength in maintaining relationships to last long. The approach can be emotionally empathetic towards others and can be demonstrated through each person's performance. In addition, HM informants revealed that trust in the cooperation of colleagues is crucial. For example, transparency and honesty regarding quality, product prices, delivery times, and other aspects are essential in relationships with suppliers. In line with that, a Tk3 spokesperson, in collaboration with tax advisors, stated the obligation to speak honestly about business tax providers and the right to receive corporate tax information and information explained in understandable language. The Tk2 informant added that creating mutual trust with business

partners is very important, although maintaining it can be challenging. Therefore, maintaining a business relationship requires mutual trust and ongoing commitment.

**Trust with tax consultants**

Trust becomes one of the capitals for informants, as entrepreneurs should have credibility so that individuals and groups who want to establish relationships do not hesitate. Maintaining trust can be done by communicating everything openly and committing to things agreed upon in the network group. Informant business partners with tax consultants, which will help informants streamline business operations. The relationship that is carried out with external parties must have reciprocity, as stated by the following informant:

*... Likewise with tax consultants, I must speak for real about this business tax management, in addition to having the right to get my company's tax knowledge and information explained in easy-to-understand language (informant TK3).*

*... indeed, the relationship is rarely done because it is separated by distance only nowadays it is sophisticated so communication can be done at any time (informant TK1).*

*Of course, it is important to have trust, even though business partners are far away, so they are vulnerable to misunderstandings and other problems (informant TK2).*

*Yes, trust each other; it is also one of the capital so that cooperation can be durable (HM informant)*

Trust is a critical factor in determining the strength of this unique relationship (Greenwood, Van Buren III, 2010). Trust is often cited as a determining factor in business and a way of maintaining relationships with external parties (Eddleston, Morgan, 2014). A relationship with a tax consultant can increase stability, provide social capital and gain legitimacy. The idea of Embeddedness Granovetter (1985) can reinforce the informant's previous claim that relationships with networks, for example, suppliers who are parties outside the informant, must be based on mutual trust. It is known that the way informants create a network of relationships through occasional openness and intensive communication can foster a sense of trust. Informants require a dimension of trust in building business relationships, which helps reduce uncertainty and facilitate communication and interaction (Doh, Zolnik, 2011). Trust can be lost if the other party does not fulfil its obligations. In addition, trust can minimize unavoidable friction, such as the exploitation of information (Putnam, 2000).

**Trust with consumers or customers**

The success of a business is its ability to maintain customer trust and loyalty. However, building customer trust and belief in the long run is difficult. Customer trust is a condition based on the customer's confidence and knowledge of the quality of a product or service. Building trust becomes crucial because trust is the main foundation for brand survival in the long term—the role of personal interaction and effective communication in building trust.

*When we communicate with customers personally, they feel valued and connected to our business. This creates a relationship that is more than just a transaction (informant TK1).*

*When consumers see that our business is committed to sustainability, they tend to believe more. Also, there are times when I, as an entrepreneur, communicate with customers personally so they feel valued and connected to our business. This creates a relationship that is more than just a transaction (informant TK2).*

*Also, when consumers who transact with me long enough, with characteristics that I already recognize, such as paying for products that are purchased on time, often transact together, at some point, my consumers need some goods that must be resold at the market Center in the village, because there is a market day because it is long enough and I know each other I ask him to take only the goods that want to be resold and pay later considering the ga market day every day (informant TK3)*

*One of them is by always communicating well with them, being consistent and also always providing good products or services. The point is to make them feel special (HM informant).*

Consumer confidence in the informant business can increase intentions and loyalty (Guenzi et al., 2009). According to Morgan and Hunt (1994), trust is a critical variable that plays a vital role in establishing an ongoing desire to maintain a long-term relationship. This trust will shape consumers ' perceptions of the brand's integrity, competence and other aspects, ultimately influencing their attitudes and behaviour. Barney and Hansen (1994) argue that trust is the shared belief of both parties that no one will exploit the other party's weakness. Trust is the most critical factor in creating and maintaining long-term customer relationships. The informant's statement clarifies that trust is achieved through consistent communication. Informants choose direct contact with consumers; this is done to develop familiarity with consumers so that informants and consumers understand each other. In the context of Industrial Marketing, Trust is seen as an essential characteristic of relationship quality (Dwyer, Schurr, Oh, 1987) and as a determinant of relationship quality (Anderson, Narus, 1990).

## 5. Conclusion

The results showed that business is an economic activity and a social action. Implementing social capital will make it easier for entrepreneurs to see the social resources around them and utilize them to achieve their business goals. To accomplish this goal, it is necessary to establish networks or social ties based on a system of norms and mutual trust. In addition, it found that bonding relationships are more robust and impact supporting business continuity than bridging connections. This is because bridging relationships with external parties increases the risk of triggering conflict. The bonding relationship that is reflected by interaction with the family provides more support in the form of cooperation and product completeness and can bridge

with external parties. Furthermore, the scope of research in remote areas where the need for an item or product is complex is challenging for informants. Still, it can also be a risk, so social capital can be used to reduce risk to achieve business continuity.

The suggestion in this study is to expand the research area and conduct direct and in-depth interviews with informants so that the data taken can be maximized and the answers vary, researchers are more familiar with the story of the informant's experience and increase the number of informants in the study to be more diverse.

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# MANAGEMENT OF INVESTMENT ACTIVITIES OF CITIES WITH POWIAT STATUS OF THE SILESIAN VOIVODESHIP DURING THE COVID-19 PANDEMIC

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**Introduction/background**: The investment activity of local governments depends on many determinants, including their financial resources and economic conditions. Although pursuing an active investment policy is conducive to the development of local governments, emergency and crisis events may disrupt these activities. The present paper discusses the investment activity of cities and towns with powiat status in the region of Silesia in Poland during the COVID-19 pandemic.
**Aim of the paper**: The main objective of the research is to assess the investment activity of cities with powiat status in the Silesian Voivodeship in 2019-2021 using the classical TOPSIS linear normalization approach.
**Materials and methods**: The research was conducted based on a multi-criteria analysis of budget indicators using the TOPSIS method in 2019-2021. This method allowed for the determination of a synthetic index in the period studied and, consequently, to determine the investment activity classes of 19 cities with powiat status in the Silesian Voivodeship.
**Results and conclusions**: The research confirmed that the COVID-19 pandemic led to a slowdown in investment activity of cities with powiat status, although the Katowice metropolitan area was the leader in local investment in 2019-2020, followed by Gliwice in 2021. In 2019-2021, a fairly large variation in the investment activity classes of cities with powiat status in the Silesian voivodeship was evident. The largest number of them were classified as class 3, with as many as 9 in 2021. In 2020, the units studied (12 towns) were characterized by class 2 and 3 investment activity, with only three in class 1, including the Katowice metropolitan area, which dominated the ranking alongside Gliwice and Jastrzębie Zdrój.
**Keywords:** management, COVID-19, investment activity, local government, cities whit powiat status.

## 1. Introduction

The management of the investment activities of local government units (LGUs) is a complex process and depends on its financial potential and ability to implement development projects. Local investment is often referred to as investments in LGUs, municipal investments, infrastructure investments, and public investments (Kozłowski, 2017). As Zygmunt and Mach (2011), argue, investments in LGUs are expenditures incurred to increase public goods and are deliberate spending operations aimed at providing benefits for the local government community. The purpose of municipal investments is to serve the welfare of the local community (Zawora, 2014). Furthermore, they increase the competitiveness of the unit and are designed to attract investors and residents, thus improving the quality of life of the community and increasing budget revenue (Leszczyńska, 2015). Local government investments are characterized by a high level of complexity, capital intensity, limited scope, and serving the public interest (Filipiak, Dylewski, 2015). The investment activities of local governments differ significantly from those performed by businesses in terms of financing, purpose, or perceived efficiency, among other things (Kokot-Stępień, 2017). It should be noted that local investments are often not economically viable (they do not generate profits, they are non-profit), so there should be strong, substantive arguments for choosing a particular idea (Galiński, 2014).

The amount of property expenditures incurred depends not only on available funds but also on existing investment needs (Dworakowska, 2015). The relatively high investment expenditures and their upward trend can be considered symptoms of the high quality of the unit's policies, which lead to permanent local development and increased welfare of the local community (Kopańska et al., 2018). It is further recognized that the greater the financial independence of a local government, the greater the ability to make investment expenditures, and therefore the number of investments (Surówka, Owsiak, 2018). It is also supposed that the intensity of making investments may be influenced by the bottom-up initiative expressed by local residents. Therefore, in a local government where residents are not interested in the activities of the LGU, investment projects may be implemented to a lesser extent (Tomal, Nalepka, 2018).

An efficient investment policy should promote the reduction of disparities between regions (Frejtag-Mika, Sieradzka, 2014). The development of LGUs through investments can manifest itself in an increase in the quality of services provided, an increase in municipal assets, and the creation of encouraging conditions for new residents and entrepreneurs (Sztando, 2017). The investment policy in LGUs should be characterized by concern for its resources manifested in pragmatic and efficient use of them (Burzyńska, 2011). It is the combination of financial capabilities and efficient management that can guarantee local and regional development. Therefore, it can be concluded that it is the financial situation of a unit that determines development in its area (Sobko et al., 2021). Unfortunately, the financial condition of LGUs has changed in recent years due to a crisis of global proportions as a result of the COVID-19 pandemic. This crisis has also translated into the financial management in LGUs, particularly

their investment activities. Among other researchers, Arhipova et al. (2022) analyzed how people's behavior in different phases of the COVID-19 pandemic affected economic activity in municipalities in Latvia. Therefore, the following research question should be asked: How has the COVID-19 pandemic affected the investment activity of major cities in the selected region in Poland? Consequently, the main objective of the study was to assess the management of investment activities in cities with powiat status in the Silesian Voivodeship in Poland in 2019-2021 under the COVID-19 pandemic conditions.

## 2. Investments in the development process of local governments – literature review

Management of the development of LGUs is an organized and comprehensive activity aimed at creating optimal conditions to take advantage of opportunities and reduce risks (Ziółkowski, 2015). Local development is a staged process of socio-economic changes and adaptations aimed at better land use and improving the quality of public services provided (Krukowski, Sasak, 2016), improving the quality of life of the population, or increasing the availability of goods and services (Musiałkowska, Wiśniewski, 2017). Badach et al. (2021) postulated that development can be defined as the transformation by which simple forms become more complex, more perfect, and improved. Local development is considered as qualitative and quantitative change, with its intensity determined by a number of factors of great variety and strength of endogenous or exogenous origin (Adamowicz, 2020). There are suggestions in the literature that the municipalities that are able to effectively assess and strengthen their endogenous potential, which is specific to such units, have a better chance of development (Rogowska, 2018).

The concept of local government investments is considered a prerequisite for long-term development (Kotowska, Chłoń-Domińczak, 2012). In recent years, despite a marked increase in the number of infrastructure investments, a gap remains between the needs of the regions and the public investments (Wojciechowski, 2017). To support the development of LGUs, it is crucial to select and apply appropriate tools, among which economic and financial tools are the most popular (Zawora, 2016).

An advantage of municipal investments is that they help reduce development delays that exist in some areas for historical reasons (Kisman, Tasar, 2014). Municipal investments should improve the welfare of the local community, thus striving for the long-term development of the unit through economic activation (Poniatowicz, 2014). However, in order for investments to make a real contribution to local development, it is necessary to recognize the specific needs that exist in a given local government (Kotala, 2011). The literature emphasizes that there is a two-way relationship between local development and municipal investment expenditures expressed as the effect of investment expenditures on the level of local development but also

as the level of development affecting the propensity to invest (Standar, 2017). Therefore, the present study outlines the following research problems and questions: 1) How did the financial and investment potential of cities with powiat status in the Silesian region develop during the COVID-19 pandemic years, 2) Did the large cities of the Silesian region in 2019-2021 use their investment potential to stimulate their development?

## 3. Methods

To evaluate the investment activities of 19 cities with powiat status in the Silesian province (n = 19, n = 100%) a multi-criteria analysis was used based on the TOPSIS classical approach during the years of crisis (2019-2021), caused by the COVID-19 pandemic. Entities from the Silesian voivodeships were selected for the study, because of the 66 cities with powiat status, as many as 19 (28,8% in total) located in Silesia. This method makes it possible to determine a synthetic index, based on which it is possible to classify the towns studied into four classes of investment activity, from the most (1) to the least active (4). The research was carried out based on 7 indicators characterizing the investment activity of local governments, monitored by the Ministry of Finance, showing, among others, the percentage of property expenditures in total expenditures, the level of self-financing of investment activity, financial potential, investment potential (in % and per capita), or the utilization of investment potential (in % and per capita). The different stages of the research conducted, along with their detailed description, are illustrated in Table 1.

**Table 1.**
*Stages of research in the assessment of investment activities of cities with powiat status*

| Specification | Description of individual stages of research | |
|---|---|---|
| | **Characteristic** | **Formulas and explanations** |
| Step 1.<br><br>Selection of simple features for research | 1. The analysis covered seven indicators ($x_{ij}$) characterizing the investment activity of LGUs:<br>$X_1$ - Share of capital expenditure in total expenditure in %<br>$X_2$ - Share of operating surplus and property income in capital expenditure (Self-financing ratio) in %<br>$X_3$ - Development potential for property expenditures and capital repayments in %<br>$X_4$ - Investment potential for property expenditures<br>$X_5$ - Utilization of investment potential<br>$X_6$ - Development potential per capita<br>$X_7$ - Investment potential per capita | $X = [x_{ij}]$<br>$X_1$ = Wm/Wo<br>$X_2$ = (No+Dm)/Wm<br>$X_3$ = (Pbzwr+(Do-Wb))/Wm+Rs<br>$X_4$ = (Pbzwr+(Do-Wb-Rs))/Wm<br>$X_5$ = Wm/(Pbzwr+(Do-Wb-Rs))<br>$X_6$ = (Pbzwr+(Do-Wb))/L<br>$X_7$ = (Pbzwr+(Do-Wb-Rs))/L<br>Where: i – object number (i = 1, 2, ..., n); j – diagnostic feature number (j = 1, 2, …, m); $x_{ij}$ – the value of the $j^{th}$ trait in the $i^{th}$ object; L – number of residents of LGUs; Do – total revenue; Dm – property revenue; Sm – income from the sale of property; Wo – total expenditure; Wm – capital expenditure; Wb – current expenditure; Rs – repayment of capital instalments on loans and credits taken out; No – operating surplus; Pbzwr – budget revenues excluding credits, loans, securities issues |

Cont. table 1.

| | | | |
|---|---|---|---|
| Steps 2 to 6.<br><br>Determining the synthetic indicator using the TOPSIS method | 2. Determination of the weight vector. Normalization of simple feature values | $w_{ij} = \frac{V_{ij}}{\sum_{j=1}^{m} V_{ij}}$ ; $\sum_{j=1}^{m} w_j = 1$<br>Where: $w_{ij}$ – the weight of the budget indicator; $V_{ij}$ – coefficient of variation | |
| | | $\overline{x}_{ij} = \frac{X_{ij} - minX_{ij}}{maxX_{ij} - minX_{ij}}$ for stimulant;<br>$\overline{x}_{ij} = \frac{maxX_{ij} - X_{ij}}{maxX_{ij} - minX_{ij}}$ for destimulant;<br>Where: $\overline{x}_{ij}$ – normalized values of the *j*-th trait in the *i*-th object | |
| | 3. Calculating the weighted normalized matrix. Using the classic standard score procedure | $v_j = \overline{x}_{ij} * w_j$<br>Where: $v_j$ – indicator value in the weighted normalized matrix; *w* – indicator weight | |
| | 4. Determining the coordinates of model objects for the positive $(A_j^+)$ and negative $(A_j^-)$ ideal of investment activity | $A_j^+ = (v_1^+, v_2^+, \ldots, v_n^+) = \{(max_i v_{ij} \mid j \in B), (min_i v_{ij} \mid j \in C)\}$<br>$A_j^- = (v_1^-, v_2^-, \ldots, v_n^-) = \{(min_i v_{ij} \mid j \in B), (max_i v_{ij} \mid j \in C)\}$<br>Where: $A_j^+$ - the positive ideal; $A_j^-$ - the negative ideal | |
| | 5. Calculating the distance of each object from the positive $S_i^+$ and negative $S_i^-$ ideal of development | $S_i^+ = \left[\sum_{j=1}^{m} (V_{ij} - V_j^+)^2\right]^{0.5}$;<br>$S_i^- = \left[\sum_{j=1}^{m} (V_{ij} - V_j^-)^2\right]^{0.5}$<br>Where: $S_i^+$ – euclidean distance from the ideal value; $S_i^-$ – euclidean distance from the anti-ideal value | |
| | 6. Calculating the value of the synthetic measure | $p_i = \frac{S_i^-}{S_i^+ + S_i^-}$<br>Where: $p_i$ – the value of the synthetic measure | |
| Step 7.<br><br>Typological classes of measures of the synthetic TOPSIS method | 7. Four typological classes can be selected to define the investment activity of LGUs, based on the mean $(\overline{p}_i)$ and standard deviation $(s_{pi})$ of the synthetic indicator (*pi*) | Class I (high) | $p_i \geq \overline{p}_i + s_{pi}$ |
| | | Class II (medium-high) | $\overline{p}_i - s_{pi} \leq p_i < \overline{p}_i$ |
| | | Class III (medium-low) | $\overline{p}_i - s_{pi} \leq p_i < \overline{p}_i$ |
| | | Class IV (low) | $p_i < \overline{p}_i - s_{pi}$ |

Source: own elaboration based on: Wysocki (2020), Kozera, Wysocki (2016), Głowicka-Wołoszyn et al. (2018), Bąk, Dawidowicz (2023).

The research included 8 stages, from the choice of indicators characterizing investment activity, through the determination of a synthetic index using the TOPSIS multi-criteria method, to the determination of classes of investment attractiveness of cities with powiat status in the Silesian Voivodeship.

## 4. Results

Investment activities of cities with powiat status in the Silesian Voivodeship slowed down in 2019-2021, as the share of property expenditures in total expenditures (X1) decreased from 15.6% to 14%, as shown in the data of Table 2. The year 2020 was characterized by a marked reduction in investment activities, with the highest value of the X1 index recorded by Gliwice (22.9%) and the lowest by Ruda Śląska (6.8%).

**Table 2.**
*Indicator of investment activity of cities with powiat status in Poland in 2019-2021*

| Specification | 2019 | | | | | | | 2020 | | | | | | | 2021 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **X1** | **X2** | **X3** | **X4** | **X5** | **X6** | **X7** | **X1** | **X2** | **X3** | **X4** | **X5** | **X6** | **X7** | **X1** | **X2** | **X3** | **X4** | **X5** | **X6** | **X7** |
| Bielsko-Biała | 22.34 | 76.51 | 74.79 | 72.08 | 138.74 | 1,410.75 | 1,227.59 | 20.81 | 78.96 | 79.8 | 74.21 | 134.76 | 1,807.96 | 1,316.68 | 20.19 | 88.37 | 104.94 | 105.73 | 94.58 | 2,240.31 | 1,946.66 |
| Bytom | 10.82 | 96.29 | 87.60 | 84.16 | 118.82 | 690.41 | 519.47 | 10.46 | 94.22 | 94.36 | 93.05 | 107.47 | 776.21 | 621.46 | 17.14 | 88.41 | 110.78 | 111.77 | 89.47 | 1,531.77 | 1,415.3 |
| Chorzów | 13.82 | 71.43 | 86.83 | 83.78 | 119.36 | 1,004.72 | 787.14 | 12 | 107.17 | 111.99 | 113.75 | 87.91 | 1,055.33 | 934.6 | 10.63 | 185.98 | 213.45 | 237.44 | 42.12 | 2,009.45 | 1,845.13 |
| Częstochowa | 11.70 | 87.06 | 84.97 | 81.96 | 122.00 | 758.43 | 609.75 | 10.19 | 77.11 | 91.67 | 89.67 | 111.51 | 801.12 | 632.03 | 8.21 | 160.99 | 163.96 | 188.91 | 52.94 | 1,344.67 | 1,114.58 |
| Dąbrowa Górnicza | 14.62 | 129.19 | 153.76 | 166.59 | 60.03 | 1,899.37 | 1,661.35 | 18.39 | 100.43 | 130.27 | 135.57 | 73.77 | 2,190.76 | 1,940.37 | 16.23 | 160.98 | 187.74 | 204.63 | 48.87 | 2,983.93 | 2,727.33 |
| Gliwice | 26.01 | 76.60 | 96.03 | 95.75 | 104.44 | 2,075.32 | 1,930.78 | 22.92 | 103.49 | 111.65 | 112.53 | 88.87 | 2,428.96 | 2276.1 | 27.08 | 94.58 | 133.6 | 136.05 | 73.5 | 3,676.58 | 3,489.39 |
| Jastrzębie-Zdrój | 12.90 | 96.81 | 274.65 | 274.74 | 36.40 | 2,056.94 | 2,056.58 | 16.7 | 101.13 | 206.92 | 213.53 | 46.83 | 2,436.87 | 2,368.35 | 12.08 | 145.63 | 279.68 | 295.01 | 33.9 | 2,445.2 | 2,376.49 |
| Jaworzno | 10.03 | 141.33 | 128.52 | 137.46 | 72.75 | 1,034.13 | 841.94 | 12.21 | 113.14 | 133.08 | 140.64 | 71.1 | 1,382.21 | 1,188.95 | 12.45 | 160.6 | 187.91 | 206.81 | 48.35 | 2,108.9 | 1,910.3 |
| Mysłowice | 11.94 | 102.81 | 121.72 | 123.36 | 81.06 | 897.80 | 845.83 | 11.04 | 135.91 | 153.52 | 155.42 | 64.34 | 1,107.93 | 1,083.09 | 10.83 | 109.98 | 191.27 | 198.57 | 50.36 | 1,690.36 | 1,624.95 |
| Piekary Śląskie | 18.49 | 81.86 | 103.97 | 104.43 | 95.76 | 1,297.81 | 1,167.50 | 11.25 | 98.16 | 133.65 | 140.06 | 71.4 | 1,097.88 | 966.37 | 11.04 | 148.47 | 168.24 | 182.13 | 54.9 | 1,412.22 | 1,270.19 |
| Ruda Śląska | 12.65 | 110.75 | 101.20 | 101.45 | 98.58 | 925.63 | 768.55 | 6.84 | 180.52 | 135.13 | 147.61 | 67.75 | 771.84 | 622.15 | 7.97 | 156.56 | 166.74 | 188.24 | 53.12 | 1,209.29 | 1,032.57 |
| Rybnik | 26.90 | 68.67 | 99.87 | 99.87 | 100.13 | 2,034.34 | 2,027.78 | 15.28 | 127.51 | 183.15 | 183.75 | 54.42 | 1,975.3 | 1,967.54 | 15.38 | 108.02 | 181.06 | 183.47 | 54.5 | 2,154.67 | 2,120.26 |
| Siemianowice Śląskie | 8.40 | 62.38 | 115.12 | 117.88 | 84.83 | 667.02 | 577.42 | 11.58 | 105.05 | 131.32 | 134.98 | 74.08 | 1,130.88 | 1,040.77 | 10.97 | 120.82 | 118.34 | 132.26 | 75.61 | 1,591.14 | 1,010.99 |
| Sosnowiec | 11.95 | 97.60 | 103.92 | 104.81 | 95.41 | 807.63 | 664.46 | 16.46 | 116.64 | 123.75 | 127.19 | 78.62 | 1,435.26 | 1,288.79 | 13.95 | 92.67 | 121.63 | 123.73 | 80.82 | 1,257.42 | 1,165.76 |
| Świętochłowice | 4.38 | 178.36 | 157.40 | 165.04 | 60.59 | 389.38 | 360.30 | 7.54 | 244.78 | 249.06 | 266.1 | 37.58 | 1,193.47 | 1,144.31 | 13.7 | 123.33 | 188.78 | 195.1 | 51.26 | 1,848.03 | 1,782.95 |
| Tychy | 24.78 | 88.96 | 116.24 | 118.33 | 84.51 | 2,381.17 | 2,147.66 | 20.91 | 104.76 | 115.97 | 119.12 | 83.95 | 2,224.14 | 1,908.65 | 17.52 | 111.22 | 150.86 | 155.28 | 64.4 | 2,265.31 | 2,145.42 |
| Zabrze | 15.59 | 75.88 | 61.61 | 50.71 | 197.18 | 736.81 | 472.35 | 12.91 | 84.82 | 64.02 | 52.32 | 191.13 | 703.2 | 433.74 | 11.87 | 121.67 | 116.59 | 122.7 | 81.5 | 1,256.05 | 966.02 |
| Żory | 19.77 | 66.82 | 56.98 | 44.84 | 223.00 | 937.72 | 575.61 | 18.29 | 84.81 | 64.87 | 53.58 | 186.65 | 1,079.84 | 674.83 | 13.47 | 135.09 | 117.16 | 122.42 | 81.69 | 1,442.09 | 1,153.34 |
| Katowice | 20.22 | 78.99 | 168.22 | 174.56 | 57.29 | 2,887.24 | 2,741.26 | 19.54 | 89.86 | 166.77 | 173.15 | 57.75 | 2,977.79 | 2,822.03 | 15.31 | 123.2 | 216.84 | 231.51 | 43.2 | 3,181.02 | 3,017.48 |
| medium | 15.6 | 94.1 | 115.4 | 115.9 | 102.7 | 1.310.1 | 1,157.0 | 14.5 | 113.1 | 130.6 | 133.0 | 88.9 | 1,504.1 | 1,327.9 | 14.0 | 128.2 | 164.2 | 174.8 | 61.8 | 1,981.5 | 1,795.5 |
| max | 26.9 | 178.4 | 274.7 | 274.7 | 223.0 | 2,887.2 | 2,741.3 | 22.9 | 244.8 | 249.1 | 266.1 | 191.1 | 2,977.8 | 2,822.0 | 27.1 | 186.0 | 279.7 | 295.0 | 94.6 | 3,676.6 | 3,489.4 |
| min | 4.4 | 62.4 | 57.0 | 44.8 | 36.4 | 389.4 | 360.3 | 6.8 | 77.1 | 64.0 | 52.3 | 37.6 | 703.2 | 433.7 | 8.0 | 88.4 | 104.9 | 105.7 | 33.9 | 1,209.3 | 966.0 |
| standard deviation | 6.1 | 28.3 | 47.7 | 51.2 | 44.6 | 681.2 | 693.1 | 4.6 | 38.6 | 45.7 | 51.3 | 40.9 | 663.4 | 669.9 | 4.4 | 27.9 | 44.2 | 48.9 | 17.3 | 682.5 | 705.0 |
| variability coefficient | 39.0 | 30.1 | 41.3 | 44.1 | 43.4 | 52.0 | 59.9 | 31.8 | 34.2 | 35.0 | 38.6 | 46.0 | 44.1 | 50.4 | 31.1 | 21.8 | 26.9 | 28.0 | 27.9 | 34.4 | 39.3 |

Source: own elaboration.

Over the period under review, progression was observed for self-financing (from 94.1% to 128.2%), financial potential (115.4% to 164.2%), and investment potential (from 115.9% to 174.8%). The indicators illustrated in Table 1 also demonstrate that the COVID-19 pandemic years were distinguished by the low rate of utilization of investment potential and its sharp regression (from 102.7% to 61.8%). The investment potential was used to the smallest extent in 2019 (36.4%) and 2021 (33.9%) by Jastrzębie Zdrój, and in 2020 (37.6%) by Świętochłowice.

Based on the indicators illustrated in Table 2, a synthetic measure of $p_i$ was calculated using the TOPSIS method, and the results are presented in Table 3. The synthetic index of investment attractiveness in cities with powiat status in the Silesian Voivodeship underwent regression in most of the units studied primarily in 2020, a period of greatest disturbance in the country but also in the world caused by the outbreak of a pandemic. Katowice recorded the highest $p_i$ in 2020 at 0.5798, and Bytom saw the lowest (0.2160). In 2021, the values of the measure were lower with respect to 2020 in as many as 11 cities out of 19, such as Jastrzębie Zdrój, Mysłowice, Ruda Śląska, Rybnik, Siemianowice Śląskie, Sosnowiec, Świętochłowice, Tychy, Zabrze, Żory and Katowice.

**Table 3.**
*The value of the TOPSIS synthetic indicator and the classes of investment activity of cities with powiat status in Poland in 2019-2021*

| Specification | 2019 | | | 2020 | | | 2021 | | |
|---|---|---|---|---|---|---|---|---|---|
| | $S_i^+$ | $S_i^-$ | Pi | $S_i^+$ | $S_i^-$ | Pi | $S_i^+$ | $S_i^-$ | Pi |
| Bielsko-Biała | 0.2600 | 0.1618 | 0.3836 | 0.2573 | 0.1764 | 0.4068 | 0.2653 | 0.1919 | 0.4198 |
| Bytom | 0.3167 | 0.0864 | 0.2142 | 0.3192 | 0.0879 | 0.2160 | 0.3054 | 0.1470 | 0.3250 |
| Chorzów | 0.2963 | 0.1027 | 0.2574 | 0.2904 | 0.0966 | 0.2497 | 0.2468 | 0.1836 | 0.4265 |
| Częstochowa | 0.3114 | 0.0899 | 0.2240 | 0.3231 | 0.0895 | 0.2169 | 0.3142 | 0.1153 | 0.2684 |
| Dąbrowa Górnicza | 0.2085 | 0.1933 | 0.4812 | 0.2207 | 0.1919 | 0.4651 | 0.1786 | 0.2256 | 0.5581 |
| Gliwice | 0.2163 | 0.2191 | 0.5032 | 0.2099 | 0.2289 | 0.5216 | 0.1892 | 0.3045 | 0.6168 |
| Jastrzębie-Zdrój | 0.1914 | 0.2696 | 0.5848 | 0.2030 | 0.2471 | 0.5490 | 0.2163 | 0.2385 | 0.5244 |
| Jaworzno | 0.2777 | 0.1214 | 0.3042 | 0.2672 | 0.1195 | 0.3090 | 0.2389 | 0.1596 | 0.4005 |
| Mysłowice | 0.2854 | 0.1035 | 0.2661 | 0.2737 | 0.1216 | 0.3075 | 0.2784 | 0.1187 | 0.2989 |
| Piekary Śląskie | 0.2601 | 0.1367 | 0.3444 | 0.2894 | 0.1014 | 0.2594 | 0.2962 | 0.1121 | 0.2746 |
| Ruda Śląska | 0.2900 | 0.1016 | 0.2594 | 0.3084 | 0.1140 | 0.2700 | 0.3229 | 0.1120 | 0.2576 |
| Rybnik | 0.2163 | 0.2248 | 0.5096 | 0.2129 | 0.2000 | 0.4844 | 0.2346 | 0.1526 | 0.3941 |
| Siemianowice Śląskie | 0.3209 | 0.0762 | 0.1918 | 0.2833 | 0.1045 | 0.2695 | 0.3205 | 0.1061 | 0.2487 |
| Sosnowiec | 0.3012 | 0.0907 | 0.2315 | 0.2553 | 0.1343 | 0.3447 | 0.3243 | 0.1156 | 0.2628 |
| Świętochłowice | 0.3256 | 0.1382 | 0.2980 | 0.2646 | 0.2313 | 0.4664 | 0.2544 | 0.1346 | 0.3460 |
| Tychy | 0.1971 | 0.2390 | 0.5481 | 0.2196 | 0.1982 | 0.4744 | 0.2319 | 0.1600 | 0.4082 |
| Zabrze | 0.3207 | 0.1389 | 0.3022 | 0.3322 | 0.1698 | 0.3382 | 0.3314 | 0.1156 | 0.2586 |
| Żory | 0.3106 | 0.1695 | 0.3531 | 0.3039 | 0.1816 | 0.3741 | 0.3104 | 0.1265 | 0.2895 |
| Katowice | 0.1787 | 0.2914 | 0.6199 | 0.2007 | 0.2770 | 0.5798 | 0.1791 | 0.2454 | 0.5781 |
| Min | 0.1787 | 0.0762 | 0.1918 | 0.2007 | 0.0879 | 0.2160 | 0.1786 | 0.1061 | 0.2487 |
| Max | 0.3256 | 0.2914 | 0.6199 | 0.3322 | 0.277 | 0.5798 | 0.3314 | 0.3045 | 0.6168 |
| Medium | 0.2676 | 0.1555 | 0.3619 | 0.2650 | 0.1617 | 0.3738 | 0.2652 | 0.1613 | 0.3767 |

Source: own elaboration.

The clear leader in the ranking, with class 1 investment activity, was the Katowice metropolitan area in 2019-2020, although it should be noted that the COVID-19 pandemic affected the reduction in the value of the TOPSIS synthetic measure from 0.6199 to 0.5781 in 2019-2021, as shown in the data in Table 4. Cities such as Jastrzębie Zdrój, Tychy, Rybnik, and Gliwice also stood out with high values of the synthetic measure: Jastrzębie Zdrój, Tychy, Rybnik, and Gliwice in 2019, Jastrzębie Zdrój and Gliwice in 2020, and Gliwice (the leader, with 1st place in the ranking), Jastrzębie Zdrój, and Dąbrowa Górnicza in 2021.

**Table 3.**
*The value of the TOPSIS synthetic indicator and the classes of investment activity of cities with powiat status in Poland in 2019-2021*

| Specification | Pi | Ranking 2019 | Class | Pi | Ranking 2020 | Class | Pi | Ranking 2021 | Class |
|---|---|---|---|---|---|---|---|---|---|
| Bielsko-Biała | 0.3836 | 7 | 2 | 0.4068 | 8 | 2 | 0.4198 | 6 | 2 |
| Bytom | 0.2142 | 18 | 4 | 0.2160 | 19 | 4 | 0.3250 | 11 | 3 |
| Chorzów | 0.2574 | 15 | 3 | 0.2497 | 17 | 4 | 0.4265 | 5 | 2 |
| Częstochowa | 0.2240 | 17 | 4 | 0.2169 | 18 | 4 | 0.2684 | 15 | 3 |
| Dąbrowa Górnicza | 0.4812 | 6 | 2 | 0.4651 | 7 | 2 | 0.5581 | 3 | 1 |
| Gliwice | 0.5032 | 5 | 1 | 0.5216 | 3 | 1 | 0.6168 | 1 | 1 |
| Jastrzębie-Zdrój | 0.5848 | 2 | 1 | 0.5490 | 2 | 1 | 0.5244 | 4 | 1 |
| Jaworzno | 0.3042 | 10 | 3 | 0.3090 | 12 | 3 | 0.4005 | 8 | 2 |
| Mysłowice | 0.2661 | 13 | 3 | 0.3075 | 13 | 3 | 0.2989 | 12 | 3 |
| Piekary Śląskie | 0.3444 | 9 | 3 | 0.2594 | 16 | 4 | 0.2746 | 14 | 3 |
| Ruda Śląska | 0.2594 | 14 | 3 | 0.2700 | 14 | 3 | 0.2576 | 18 | 4 |
| Rybnik | 0.5096 | 4 | 1 | 0.4844 | 4 | 2 | 0.3941 | 9 | 2 |
| Siemianowice Śląskie | 0.1918 | 19 | 4 | 0.2695 | 15 | 3 | 0.2487 | 19 | 4 |
| Sosnowiec | 0.2315 | 16 | 3 | 0.3447 | 10 | 3 | 0.2628 | 16 | 3 |
| Świętochłowice | 0.2980 | 12 | 3 | 0.4664 | 6 | 2 | 0.3460 | 10 | 3 |
| Tychy | 0.5481 | 3 | 1 | 0.4744 | 5 | 2 | 0.4082 | 7 | 2 |
| Zabrze | 0.3022 | 11 | 3 | 0.3382 | 11 | 3 | 0.2586 | 17 | 4 |
| Żory | 0.3531 | 8 | 3 | 0.3741 | 9 | 2 | 0.2895 | 13 | 3 |
| Katowice | 0.6199 | 1 | 1 | 0.5798 | 1 | 1 | 0.5781 | 2 | 1 |

Source: own elaboration.

Figure 1 illustrates the layout of investment activity classes and the number of corresponding towns, in 2019-2021.

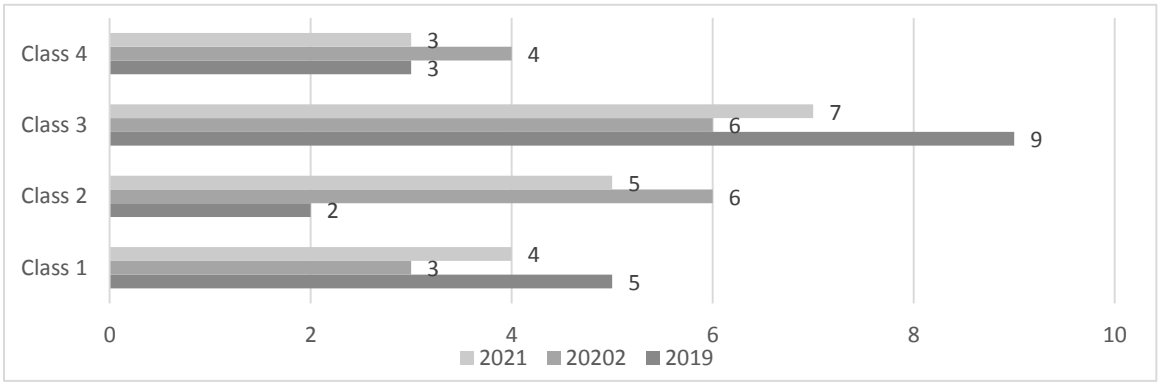


**Figure 1.** Investment activity classes and number of cities with powiat status in the Silesian Voivodeship in 2019-2021.

Source: own elaboration.

In 2019-2021, a fairly large variation in the investment activity classes of cities with powiat status in the Silesian voivodeship was evident. The largest number of them were classified as class 3, with as many as 9 in 2021. In 2020, the units studied were mainly characterized by class 2 (6 cities) and class 3 (6 cities), with only 3 units ranked in class 1, including the Katowice metropolitan area, which, along with Gliwice and Jastrzębie Zdrój, dominated over the entire period in terms of investment activity.

## 5. Discussion

The investment activities of local governments are the subject of many studies, and they differ in their scope and research methods. Research on investment attractiveness was conducted by Snieška and Zykiene (2015), while Windhyastiti, et al. (2019) attempted to assess how to improve the investment attractiveness of cities. Kobiałka and Kubik (2018) conducted research on evaluating the effectiveness of investment activities in municipalities in Poland. The authors used the non-parametric data envelopment analysis (DEA) method. The expenditures and effects of investment activities in rural and urban-rural municipalities in 2007-2013 were compared. Using a similar method, Skica et al. (2019) compiled a ranking of municipalities, taking into account their level of efficiency and development. The survey covered 2044 Polish municipalities in 2016 using the DEA model. The authors noted that the DEA method allowed for setting goals for inefficient municipalities, which should monitor and regularly evaluate progress toward their goals. Inefficient municipalities can improve their efficiency by following the technological example of selected benchmarks. Wojtowicz and Hodzic (2021), on the other hand, evaluated the relationship between fiscal stability and efficiency using the example of large cities in Poland over the period 2008-2019. To obtain empirical results, the authors attempted data envelopment analysis and panel data analysis and constructed a fiscal sustainability index using a multivariate approach. Conclusions based on a sample of 66 towns with powiat status proved that there was a negative relationship between budget stability and the efficiency of the units studied.

Another tool that is frequently used to evaluate municipal investment activities is TOPSIS multi-criteria analysis. Among others, Bąk and Dawidowicz (2023) used this method to assess the financial condition of LGUs (voivodships, powiats and communes in 2018-2020) by examining 15 indicators. Przybyła et al. (2020) identified and evaluated the investment activity of Poland's largest cities between 2004 and 2015. Based on such indicators as cities' investment expenditures per capita, cities' investment expenditures as a percentage of their total expenditures, and cities' investment expenditures as a percentage of their revenues, these researchers constructed synthetic measures. They concluded that while a city's status and income potential are to some extent determined by its investment activities, there are clear

examples showing that appropriate local policies can modify these determinants. Furthermore, Zawora (2018) made a comparison of the financial conditions of municipalities in the Podkarpackie Voivodeship with other Polish voivodeship, also based on a multivariate comparative analysis. Kozera (2021) conducted research from 2007 to 2018 on assessing the level and diversity of investment activity of large cities (regional centers) in Poland. For this purpose, she used the TOPSIS linear normalization method and found that the highest level of investment activity was recorded in Białystok, Gdańsk, Rzeszów, Warsaw, and Olsztyn.

The research undertaken in this study is concerned with evaluating the investment activities of cities with powiat status in Silesia, one of the most urbanized regions of Poland. The research question posed in the paper, which asked whether the COVID-19 pandemic affected the investment activity of the units studied, was confirmed. First of all, in the years of the COVID-19 pandemic (2019-2021), cities with powiat status in the Silesian Voivodeship were characterized by a slowdown in investment activity, and an increase in such measures as the level of self-financing, financial potential, and investment potential. One of the effects of pandemic decisions was the underutilization of the investment potential of the units and the classification of part of them into lower classes of investment activity based on the TOPSIS synthetic measure. Further stages of the research should focus on the analysis of the post-pandemic period, taking into account in the evaluation, among other things, the impact of inflation on the results obtained by LGUs, or the challenges posed by delays in accessing funds under the National Recovery Plan from EU funds.

## 6. Conclusion

Investment activity is inextricably linked to the propensity to invest and to the capacity held by LGU bodies in this regard (Filipiak, 2017). Czempas (2012) defines LGU's propensity to invest as a phenomenon in which current expenditures are reduced so that physical resources can be multiplied in the future. Włodarek (2014) points out that the investment capacity of an LGU occurs when the local government has its own funds and legal ability to raise external funds and there is an opportunity that the handling of long-term investments will not negatively affect the implementation of current tasks. The size of the investments made in financial terms is presented in the budget, being the category of capital expenditures (Sekuła, Śmiechowicz, 2018). High investment expenditures are considered a development stimulant (Zygmunt, 2013).

Sotoła (2015) argues that local government investments are seen as the most widely used and the most effective instrument for ensuring development. However, during the pandemic years, local governments did not fully utilize their investment capacity, as confirmed by the research presented in this study. The main goal of the study was achieved and allowed for

answering the research questions posed. In 2019-2021, the investment policy pursued by the cities with powiat status in the Silesian Voivodeship was aimed at accumulating both financial and investment potential and reaching a high level of self-financing. The underutilized investment potential in the units studied and its regression in the years under review were definitely not conducive to stimulating their local development. The COVID-19 pandemic led to changes in the classification of cities into investment activity classes, with the largest number of cities in 2021 (9) found in class 3. The leaders in terms of active investment policies were Katowice and Gliwice.

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