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

# CONTENTS

# ASSERTING CLAIMS FOR INFRINGEMENT OF EXCLUSIVE RIGHTS TO THE PROJECT MANAGEMENT PLAN

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**Introduction/background:** The importance to an organisation of a management plan for the projects it carries out raises the question of how it can be protected from use by other organisations, particularly competing businesses.
**Aim of the paper:** The aim of this paper is to answer the question of whether a project management plan can be protected by the organisation using it against its use by another entity and, if so, on what legal basis and in what proceedings.
**Materials and methods:** The considerations in this article are based on the literature on the subject and on the case law of common and administrative courts. These materials have been subjected to critical analysis.
**Results and conclusions:** The analysis carried out leads to the conclusion that the project management plan qualifies as a work within the meaning of copyright law and, moreover, can be protected as a business secret under the provisions on combating unfair competition.
**Keywords:** project, organisational management, intellectual property, intcllectual property courts

## 1. Introduction

The use of management methods in an organisation in relation to a speciflc project is not irrelevant to the realisation of the goals set for that organisation and its competitiveness in relation to other entities, and therefore raises the question of the possibility of protecting both the management of such a project and the plan of that management from their use by another organisation, in particular a competing entrepreneur. This type of unlawful use of someone else's output not only saves the infringer the costs associated with creating its own model of conduct to implement a specific type of project, but also to offer similar solutions, which does not remain without impact on the competitiveness of the infringer with respect to the injured party.

It is for this reason that the question of the possibility of protecting certain management methods for the projects in question, or the management plan for such a project itself, from unlawful use by another entrepreneur remains so important and topical from the point of view of the entitled entrepreneur. The purpose of this article is to answer the question of whether, and if so on the basis of which regulations and in what proceedings, an organisation may seek legal protection against such actions?

## 2. Qualification of project management as an intangible asset

Project management can be defined, following the PMI (Project Management Institute), as a process in which the project manager carries out the deliberate planning and control of the tasks that make up the project and makes the appropriate allocation of the resources assigned to the project, using appropriate techniques and methods, in order to achieve the set goal within a specified time, at a specified cost and of appropriate quality (Pietras, Szmit, 2003).

The term project, on the other hand, is ambiguous depending on the context in which it is used. The term "draft" in the legal context means a preliminary document, presenting a proposal for changes, new legal regulations, modification of existing provisions, etc. In this case, the emphasis is on a change to existing solutions and a proposal to introduce new ones, which may be accepted or rejected by the authority competent to consider and adopt the submitted solution. In the technical sciences, a project may mean: a sketch, technical drawing, architectural drawing, architectural and urban planning drawing, urban planning drawing, construction drawing, showing a general plan of the premises, a diagram of the planned installation, technological solutions, etc. On the other hand, in the field of management sciences, a project is a concept understood in the organisational and process aspect, as a skilful combination of deliberately planned, integrated and coordinated activities, undertaken with the intention of achieving a precisely defined goal and obtaining specific results (Walczak, 2010).

There are many attempts in the management science literature to define the concept of a project (Wyrozębski, 2012). It can be assumed, following PMI, that a project is a temporary endeavour to create a unique product or service, where temporariness means that the endeavour has a well-defmed beginning and end, and uniqueness means that the product or service is clearly different from all similar products or services (Pietras, Szmit, 2003).

The process itself, which is project management, should be excluded as a potential subject of protection due to its nature. The process is only a concept, and therefore possible protection should be sought in the regulations governing the protection of intangible property. Although these regulations do not explicitly exclude the process from the circle of potential protected goods, it does not seem, however, that it can be qualified as a work or an object of related rights, or an object of industrial property being a technical solution, i.e. an invention, a utility model or a topography of an integrated circuit, not to mention an industrial design.

It should be emphasised at this point that Article 1($2^1$) of the Act of 4 February 1994 on Copyright and Related Rights (consolidated text of Journal of Laws of 2022, item 2509, hereinafter referred to as CRRA) excludes from copyright protection, inter alia, procedures, methods and principles of operation. It is emphasised that, on the one hand, they are a part of reality, inherent in it, although they have not been noticed so far for various reasons, and thus cannot be regarded as the result of creative activity, and, on the other hand, that granting property rights to such intangible goods would mean their monopolisation and the impossibility of free access to them by others (Ferenc-Szydełko, 2021). It seems that the process of carrying out a specific type of project using management methods will have to be assessed in a similar way. This is because carrying out a certain type of project using certain management methods was previously possible, although this possibility was not recognised, and the monopolisation of the process made it impossible to use the management methods in question for projects of a certain type.

In turn, Article 28(1)(3) of the Act of 30 June 2000 Industrial Property Law (consolidated text of Journal of Laws of 2021, item 324, as amended; hereinafter referred to as IPL), which, based on Article 100(1) of IPL, is appropriately applicable to utility models, excludes the possibility of qualifying as an invention, as well as a utility model, schemes, rules and methods of conducting thought processes, playing games or conducting business activities. The lack of technical character of such solutions is cited as justification for this exclusion (Demendecki et al., 2015; Kostański, 2010). The sphere of technology does not go beyond the domain of the natural sciences, while its subject is the use of inanimate or animate matter. The sphere of technology therefore does not include solutions whose object is ideas of an abstract-thinking nature, including organisational ideas, as they solve intellectual or organisational problems (Konrat, 2021), which is what project management is. The enumeration contained in Article 28(1)(3) of IPL, in contrast to the enumeration contained in Article 1($2^1$) of CRRA, is of an exemplary nature only, and thus project management methods (organisation processes) may also be added to the list contained in this regulation, due to their non-technical, but organisational nature. It should be noted that although Article 7 of IPL provides for legał protection of rationalization projeets, in this case the project is not identified by the legislator with the organizational process, but with solving a specific social problem (Article 7(2) of IPL).

The question of whether it is possible to protect the specific plan according to which project management takes place therefore needs to be conidered.

## 3. Project management plan as an intangible asset

The implementation of the process, which is project management, is based on a project management plan, which is dcfined as "a description of a possible future selection and arrangement of activities united by a common goal or a possible future selection and arrangement of components of the product of activities so united" (Kotarbiński, 1982, p. 74). Commonly, a plan is identified with a document, which is used as a guide for managing the project and controlling the process. In other words, it is seen as a document describing how to achieve a goal. Such a document should contain a definition of the projects objective and the individual tasks to be implemented, an assessment of the existing situation, an indication of the resources required to implement the project, a programme of activities to be performed within the project and which of these are of a priority nature, a list of people who will perform the project and their allocation to specific activities, a schedule of the planned work, the definition of mechanisms for controlling the implementation of the plan, information about possible variants in the event of changes in the circumstances in which the project is implemented, and the assumptions underlying the preparation of the plan.

Such an approach is, however, an oversimplification. The project management plan, just like the previously mentioned process, has by its nature, as a product of the human mind, an intangible form, and the document containing the description of this plan is only its material carrier, *corpus mechanicum,* a materialisation of this product of the intellect. Conseąuently, in the search for a legal regime to protect it, it is reasonable to turn to the regulation of rights in intangible property.

## 4. Qualification of the project management plan as an object of exclusive rights

Before analysing the possible qualification of the project management plan as one of the intangible assets, attention should be drawn to the principle of the *numerus clausus* of rights in intangible assets. This principle assumes that it is not possible to create new subjective rights of an absolute nature otherwise than by way of legislation, in particular by way of a legal act or a court decision (Żelechowski, 2019; Kurosz, 2021; Dybowski, 2003). Therefore, in order to protect the project management plan, it is necessary to qualify it as one of the subjects of exclusive rights specified by the legislator.

First, it is necessary to consider the possibility of qualifying the project management plan as a work within the meaning of Article 1(1) of CRRA. For this to happen, the management plan has to meet four conditions - it has to be a result of human activity, have a creative

character, i.e. be a result of creative activity aimed at creation of a new product, have an individual character, i.e. bear the stigma of the creator, be original, and be established, i.e. be externalised in a manner allowing it to be perceived by third parties. While the fulfilment of the first and fourth prerequisites will in principle always be met in the case of a project management plan fixed in the form of a document, the assessment of the fulfilment of the second and third prerequisites will depend on the features of the specific plan. It should be emphasised that in order for an organisation not only to use the project management plan, but also to claim the infringement of author's economic rights to it (Article 79(1) *in principio* of CRRA), it must acquire these rights, or at least have the status of an exclusive licensee (Article 67(4) of CRRA). Acquisition of authors economic rights may take place either by concluding a contract for their transfer (Article 41(1)(1) *in fine* of CRRA) or under an employment contract from an employee who is in an employment relationship with the organisation (Article 12(1) of CRRA).

Secondly, while it should be excluded - due to the lack of possibility to recognise the plan as a technical solution - to qualify it as an invention, utility model or topography of an integrated circuit, as well as industrial design, it seems possible to qualify it as a rationalisation project. Indeed, according to Article 7(2) of the IPL, any exploitable solution that is not a patentable invention, utility model, industrial design or a topography of an integrated circuit. This means that a project management plan could be qualified as a non-technical, organisational solution consisting of a planned process of solving a specific problem, which is the realisation of an assumed project. However, the condition for qualifying such a plan as a rationalization project is the recognition of such a solution as a rationalization project by the entrepreneur in the rationalization regulations adopted by the entrepreneur (Article 7(2) *in principio in* connected with Article 7(3) of IPL). As it follows from the above, the possibility to qualify the project management plan applies only to such organisations that have the attribute of an entrepreneur and, moreover, have adopted the regulations of rationalisation (Article 7(1) of IPL).

Thirdly, the protection of the project management plan as specific *know-how* comes into play. The basis for this protection should be seen in the regulation of Article 11(2) of the Act of 16 April 1993 on Combating Unfair Competition (consolidated text of Journal of Laws of 2022, item. 1233, hereinafter referred to as the CUCA), which indicates that a business secret is understood not only technical or technological information, but also organisational information of the company or other information having economic value, which as a whole or in a specific juxtaposition and collection of its elements is not generally known to persons usually dealing with this type of information or is not easily accessible to such persons, provided that the person authorised to use or dispose of the information has taken, with due diligence, measures to keep it confidential. Thus, the condition for the information in question to be covered by the notion of business secret is that it is confidential and that it is covered by the entrepreneurs actions aimed at maintaining that confidentiality (Szwaja, 2019).

The disclosure, use or acquisition of someone else's information constituting a business secret constitutes an act of unfair competition (Article 11(1) of CUCA). Acquisition of such information is subject to qualification as an act of unfair competition, in particular when it takes place without the consent of the authorised person to use or dispose of the information and results from unauthorised access, appropriation, copying of documents, objects, materials, substances, electronic files comprising the information or making it possible to infer its content (Article 11(3) of CUCA). The use or disclosure of such information constitutes an act of unfair competition, in particular when it takes place without the consent of the person authorised to use or dispose of the information and violates the obligation to restrict its use or disclosure arising from a statute, legal act or other act, or when it has been carried out by the person who obtained the information, carrying out an act of unfair competition (Article 11(4) of CUCA) The disclosure, use or acquisition of such information also constitutes an act of unfair competition if, at the time of its disclosure, use or acquisition, the person knew or, exercising due diligence, could have known that the information had been obtained directly or indirectly from the one who used or disclosed it in the circumstances specified in Article 11(4) of CUCA (Article 11(5) of CUCA). The use of such information consisting in manufacturing, offering, marketing, as well as importing, exporting and storing goods for these purposes constitutes an act of unfair competition if the person performing the indicated act knew or, exercising due diligence, could have known that the properties of the goods, including their acsthctic or functional properties, the process of their manufacture or sale, were substantially shaped as a result of the disclosure, use or acquisition of someone else's information constituting an enterprise secret, performed under the circumstances specified in Article 11(4) of CUCA (Article 11(6) of CUCA).

Acquisition of information constituting a business secret does not constitute an act of unfair competition if it was made as a result of independent discovery or manufacture or observation, examination, dissection, testing of an object available to the public or possessed in accordance with the law by a person who acquired the information and whose right to acquire the information was not restricted at the time of its acquisition (Article 11(7) of CUCA). The disclosure, use or acquisition of information constituting an enterprise secret shall also not constitute an act of unfair competition where it has occurred in order to protect a legitimate interest protected by law, in the exercise of freedom of expression or in order to disclose irregularities, misconduct, acting in breach of the law for the protection of the public interest, or where the disclosure of information constituting an enterprise secret to employee representatives in connection with the performance of their functions under the provisions of the law was necessary for the proper performance of those functions (Article 11(8) of CUCA).

## 5. Claims for infringement of an exclusive right to a project management plan

As can be seen from the above, a project management plan - if the statutory requirements are met - can be qualified as a work or a rationalization project, or can be protected as a business secret. In practice, however, an organisation which is entitled to property rights to the plan will only be entitled to claims based on CRRA or CUCA. This is a consequence of the model of protection of rationalization projects adopted by the legislator, which differs from other industrial property rights which have been shaped as subjective rights of absolute character. Consequently, an entrepreneur whose employee has created a rationalization project in the form of a project management plan is not entitled to the protection belonging to civil subjective rights of an absolute nature (judgment of the Voivodship Administrative Court in Wrocław of 12 January 2010,1 SA/Wr 1602/09, LEX no. 559606; Skubisz, 2012; Żelechowski, 2021a).

The catalogue of claims to which the entitled organisation is entitled, irrespective of the basis for the asserted claims, includes the claim for cessation of infringement (Article 79(1)(1) of CRRA) or prohibited actions (Article 18(1)(1) 1 of CUCA) and removal of the effects of the infringement (Article 79(1)(2) of CRRA) or prohibited actions (Article 18(1)(2) of CUCA). However, where the infringement of author's economic rights is of a culpable nature, the court may order the person who has infringed the author's economic rights, at his/her request and with the consent of the right holder, to pay an appropriate sum of money to the right holder if the abandonment of the infringement or the removal of the effects of the infringement would be disproportionately severe for the infringer. (Article 79(3) of CRRA).

Moreover, the holder of author's economic rights and an entrepreneur affected by an act of unfair competition may demand surrender of wrongfully obtained benefits (Article 79(1)(4) of CRRA; Article 18(1)(5) of CUCA), however, in the case of an act of unfair competition. surrender of wrongfully obtained benefits should be made on general terms. They may also demand compensation for the damage caused to the entitled organisation under generał rules (Article 79(1)(3)(a) of CRRA; Article 18(1)(4) of CUCA), i.e. the rules specified in the Act of 23 April 1964 - Civil Code (consolidated text of Journal of Laws of 2022, item. 1360; hereinafter referred to as CC) Due to difficulties in determining the causal link between the act of the infringer or perpetrator of an act of unfair competition and the damage, as well as the amount of the damage itself, the holder of the author's economic rights or an entrepreneur affected by the act of unfair competition in the form of infringement of its business secret may seek, as an alternative to damages on generał terms, lump sum damages. An entitled entity based on the author's economic rights, pursuant to Article 79(1)(3)(b) of CRRA may pursue a lump-sum damages in the form of a pecuniary amount corresponding to twice the amount of the relevant remuneration which, at the moment of its pursuit, would be due for granting by the entitled entity the consent to use the plan. On the other hand, in the case of an act of unfair

competition consisting in the infringement of an enterprise secret, the authorised entity may demand, instead of damages, reparation of the damage by payment of a sum of money in the amount corresponding to the remuneration which, at the moment of its enforcement, would be due as a result of granting by the authorised entity the consent to use information constituting an enterprise secret (Article 18(5) of CUCA). Moreover, an entrepreneur affected by an act of unfair competition in a situation where committing an act of unfair competition was of a culpable nature may demand that an appropriate sum of money be awarded for a specific social purpose related to supporting Polish culture or protecting national heritage (Article 18(1)(6) of the CUCA). This claim has no equivalent in CRRA.

Irrespective of the abovementioned claims, the holder of copyrights or an entrepreneur affected by an act of unfair competition may demand one or several announcements of a statement of appropriate content and form (Article 79(2) of CRRA; Article 18(1)(3) of CUCA). However, while in the case of copyright, only the dissemination of the statement in the press may be demanded, in the case of an act of unfair competition, the statement may be demanded in any manner not excluding the press and the Internet. Moreover, both the holder of the author's economic rights and the entrepreneur affected by the act of unfair competition may request that a part or the entirety of the court decision issued in the case under consideration be made public in the manner and scope specified by the court (Article 79(2) of CRRA; Article 18(5) of CUCA). However, such a request may be granted in the case of committing an act of unfair competition if it is justified by the circumstances of the act of unfair competition, in particular the manner in which the act was committed, the value of the information to which the act pertained, the effect of the act and the likelihood of committing the act of unfair competition in the future, and in the case where the respondent is a natural person - if it is not additionally opposed by the respondent’s legitimate interest, in particular the protection of the respondent's personal rights. However, the manner and scope of public disclosure of information on the judgment or its content may not lead to disclosure of business secrets (Article 18(3) of CUCA).

Pursuant to Article 79(4) of CRRA, the court, when deciding on the infringement of the right, may rule, at the request of the entitled person, on the unlawfully produced objects and the means and materials used to produce them, in particular may rule on their withdrawal from the market, awarding the entitled person due compensation or destruction. When ruling, the court shall take into account the gravity of the infringement and the interests of third parties. The said means and materials are presumed to be the property of the person who has infringed the author's economic rights (Article 79(5) of CRRA). In turn, pursuant to Article 18(2) of CUCA, the court, at the request of the entitled party, may also rule on products, their packaging, advertising materials and other objects directly related to the commission of the act of unfair competition. In particular, the court may order their destruction or credit for damages.

A specific regulation with regard to an act of unfair competition consisting in the infringement of business secrecy with regard to claims is contained in CUCA. In the case of such an act, the court, upon the motion of the entitled party, may oblige the defendant to publicise information about the judgement or the content of the judgement in a specific manner and within a specific scope, if it is justified due to the circumstances of the act of unfair competition, in particular the manner in which the act was committed, the value of information to which the act referred, the effect of the act and the likelihood of committing an act of unfair competition in the future, and in the case where the defendant is a natural person - if it is not additionally opposed by the justified interest of the defendant, in particular the protection of his/her personal rights. However, the manner and extent to which information on the judgment or the content of the judgment is made public shall not lead to disclosure of business secrets. (Article 18(3) of CUCA) Moreover, in the case of an act of unfair competition consisting in the infringement of an enterprise secret, the court, instead of granting the request to discontinue or remove the effects of the prohibited actions, or the ruling on products, their packaging, advertising materials and other objects directly related to the commission of the act of unfair competition, may, at the defendant's request, oblige the defendant to pay the claimant appropriate remuneration, in an amount not higher than the remuneration which, at the time of the claim, would have been due as a result of the right holders consent to use the information, for a period of time not exceeding the cessation of the state of secrecy, if three conditions are met, i.e. the defendant, at the time of using or disclosing the information constituting the business secret, did not know or, with due diligence, could not have known that the information had been obtained from the person who used or disclosed it in the circumstances referred to in Article 11(4) of CUCA, the granting of the dernand for abandonment would cause disproportionate damage to the defendant, and the obligation to pay remuneration does not infringe the plaintiffs legitimate interest (Article 18(4) of CUCA).

## 6. Judicial redress for infringement of an exclusive right to a project management plan

As of 1 July 2020, by virtue of the regulation of the Minister of Justice of 29 June 2020 on transferring to certain district courts the examination of intellectual property cases from the jurisdiction of other district courts (consolidated text of Journal of Laws of 2022, item 1398), intellectual property divisions were separated in the structure of district courts in Gdańsk, Katowice, Lublin, Poznań and Warsaw. Thanks to this procedure and to the fact that the jurisdiction of appeals against the decisions of these district courts was entrusted to the Courts of Appeal in Poznań and Warsaw, a structure of specialised courts (hereinafter referred to as intellectual property courts) dealing with the jurisdiction of intellectual property cases was

created (Kurosz, 2021). The notion of intellectual property case was defined in the introduction to the Act of 17 November 1964 - Code of Civil Procedure (consolidated text Journal of Laws of 2021, item 1805 as amended; hereinafter referred to as CPC) by virtue of the Act of 13 February 2020 amending the Act - Code of Civil Procedure and certain other acts (Journal of Laws of 2020, item 288) Article $479^{89}$ of CPC.

In the light of Article $479^{89}$ § 1 of the CPC, intellectual property cases are also cases concerning protection of copyrights, thus in the case of qualifying a management plan as a work within the meaning of Article 1(1) of CRRA, the enforcement of claims in the case of infringement of economic or personal copyrights will take place before the intellectual property court. In the case where the project management plan bears the features of a trade secret, regardless of whether it constitutes a work within the meaning of Article 1(1) of CRRA, also the enforcement of claims in the case of infringement of such a secret, i.e. committing an act of unfair competition specified in Article 11(1) of CUCA, shall take place before the intellectual property court, because in the light of Article $479^{89}$ § 2(1) of CPC, intellectual property cases are also cases of combating unfair competition.

Classification of the above-mentioned cases as intellectual property cases entails not only subjecting them to the jurisdiction of intellectual property courts, but more importantly, their examination within the framework of separate proceedings in intellectual property cases covered by the regulation of Article $479^{89}$-$479^{129}$ of CPC. As a result, an entitled person will be able to take advantage of specific legal institutions which facilitate the pursuit of his/her claims, in particular seeking damages and the surrender of wrongfully gained benefits. These institutions, which are specific only to intellectual property proceedings, include the possibility to demand securing an evidence measure (Article $479^{96}$-$479^{105}$ of CPC), disclosure or release of an evidence measure (Article $479^{106}$-$479^{111}$ of CPC), as well as a request for information (Article $479^{112}$-$479^{121}$ of CPC). While the first and the third of these requests may be included both in the statement of claim and in a separate application preceding the bringing of the action, in the case of an application for disclosure or for the issuance of evidence, it is possible to include such an application, as indicated by the content of Article $479^{106}$ *principio* of CPC, only in the statement of claim (Żelechowski, 2021; Manowska, 2022). Moreover, while in the case of an application for securing an evidence measure it will be possible to make such a request both in the case of an infringement of copyright in a project management plan and in the case of committing an act of unfair competition, in the case of an application for disclosure or issuance of an evidence measure and a request for information, the application of these institutions is limited - as it follows respectively from Article $479^{106}$ *in principio* of CPC and Article $479^{113}$ § 1 of CPC - only to cases of infringement of exclusive rights referred to in Article $479^{89}$ § 1 of CPC, and therefore - in the case under consideration - only in the case of infringement of copyright (so the Court of Appeal in Warsaw in its decision of 15 December 2021, ref. no. VII AGz 498/21, not published; differently the Court of Appeal in Poznań in its decision of 5 April 2022, , ref. no. I AGz 5/22, not published).

## 7. Concluding remarks

The above considerations lead to the conclusion that while there is no possibility of legal protection of the process of project management, the plan of such a process may be protected as a work or a business secret, provided that the plan meets the requirements for a work or allows to qualify it as a business secret. In such a situation, the entitled person will be entitled to claims provided for in CRRA and CUCA, the catalogue of which is to a large extent convergent, ensuring a similar standard of protection to entitled persons. Pursuing claims will take place within the framework of separate proceedings in intellectual property cases before specialized intellectual property courts, which according to the legislator's intention is supposed to improve the quality of decisions issued in intellectual property cases.

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# DEVELOPMENT OF PROFESSIONAL COMPETENCE OF MINING EXECUTIVES ACCORDING TO THE CONCEPT OF THE LEARNING ORGANISATION

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**Introduction/background**: The paper analyses the practical application of the learning organisation concept in the Polish mining industry - on the example of Polska Grupa Gornicza S.A.
**Aim of the paper**: The aim of the paper is to identify measures towards the development of the professional competence of mining executives, in line with the concept of the learning organisation.
**Materials and methods**: Case study on the example of Polska Grupa Gornicza S.A., desk research.
**Results and conclusions**: The paper contains a model developed by the author for the development of the competencies of mining executives according to the concept of a learning organisation, which includes a series of four-stage activities that take into account a comprehensive approach to the development of the personnel potential of managers in the mining industry.

**Keywords:** learning organisation, executives, competences.

## 1. Introduction

The 21st century is characterised by fast-moving technological, cultural, social changes. Companies have to cope with many problems: the conditions in which they operate are changing rapidly, competition is growing, and customer tastes are changing. All this forces constant change within organisations, which, in order to survive, must constantly adapt to the changing reality, and often even anticipate these changes. Therefore, the success of an organisation depends to a large extent on the ability to create a dynamic organisation, capable of adapting to constantly changing market conditions. Such an organisation should be flexible, creative, able to acquire, collect and put into practice knowledge. The achievement of such proficiency is primarily determined by competence, which is the result of innovation, learning and the accumulation and sharing of knowledge by all employees of the company. This means

that managers will also have to devote more and more time to improving their competences. This is because they are responsible for shaping role models, organisational change and learning new ways of doing things. They are also responsible for initiating and promoting knowledge management solutions within the company.

The paper analyses the practical application of the assumptions of the learning organisation concept in the Polish mining industry - on the example of Polska Grupa Gornicza S.A. The paper also contains a model developed by the author for the development of the competencies of mining executives according to the concept of a learning organisation, which includes a series of four-stage activities taking into account a comprehensive approach to the development of the HR potential of managers in the mining industry.

## 2. The essence of the learning organisation concept

The concept of organisation and management called the 'learning organisation' took shape in the 1990s. The process of transformation of enterprises towards a learning organisation takes place when they undertake actions that adapt to new environmental conditions, which are characterised by an increase in the level of competence and requirements of employees, changes in technology or the need to achieve an optimal organisational and management model (Mikula, 2001, p. 28). The learning organisation is characterised by a new image of internal organisation and new processes to achieve the desired goals.

In such an organisation, the following assumptions are made (Lassey, 1998, p. 2):

- future of the organisation depends on all its participants,
- individuals can learn in different ways,
- employees are encouraged to learn, innovate and contribute to the future of the organisation,
- conditions are created for the development of employees.

A learning organisation is an organisation that continuously expands its possibilities to create its own future. In a learning organisation, learning adaptation techniques must be linked to learning to find new solutions, learning to expand our creative capabilities (Senge, 1998, p. 26).

A learning organisation can be defined as one whose every member is engaged in identifying and solving problems, ensuring that it grows, learns and achieves its goals based on continuous experimentation, change and improvement. Such an organisation is oriented not towards achieving high performance in the traditional sense (as improving economic parameters) but towards solving problems (Rokita, 2003, p. 113).

According to P. Senge (Senge, 2012), a learning organisation is one that is able to continuously strengthen its capacity to shape its own future. According to this concept, a learning organisation is a place where people continually develop their capacity to achieve the goals they are genuinely striving towards. Involving all employees in the process of improving the organisation ensures that the organisation develops authentically. In this situation, change is natural, there is no resistance to it and often the employees themselves are the originators of change.

In a learning organisation, the effectiveness of the management subsystems that comprise knowledge management, competence and talent management, change management, quality management and information and communication management, which combine the above elements into a coherent whole, are at the forefront of the analysis. An important role in a learning organisation is played by managers, whose task is to create conditions for acquiring and sharing knowledge within the enterprise and to integrate the above management subsystems into a coherent whole. These subsystems have common areas of influence in which processes, mainly of an informational nature, operate. In view of the above, managers should treat the management system of a learning organisation as a whole, and consider information and communication management as a management subsystem integrating all its elements.

In summary, it can be said that the learning enterprise attributes a major role to the management and culture of the organisation (Dworzecki, 2000, p. 312), and its characteristic feature is the acceptance of change as a permanent phenomenon, conditioning the development of the enterprise.

## 3. The concept of a learning organisation in Polska Grupa Górnicza

Polska Grupa Górnicza (PGG) is the largest mining company in Europe and the largest hard coal producer in the European Union (Wikipedia, 2023), currently employing over 36,000 people (Kacprzak, 2022).

In Polska Grupa Górnicza, the 2018 the 'Learning Organisation' programme was launched - the first formalised undertaking of its kind in the mining industry in Poland (My Zawodowcy, 2023). As part of this initiative, the company is involved in a number of projects to develop new technical as well as organisational solutions and to continuously improve its workforce. PGG wants to be an organisation that constantly adapts to the changing conditions (economic, market, natural) on which the company's operations depend (NetTG, 2022).

A team of 33 engineers is responsible for the 'Learning Organisation' programme at PGG, which is supported by other company employees and by the Department of Information Technology and Telecommunications. Partners in this initiative are Towarzystwo Ubezpieczeń Wzajemnych Polski Zakład Ubezpieczeń Wzajemnych and PZU LAB (GIPH, 2023).

"Learning organisation" is the name of the concept for the development of Polska Grupa Gornicza S.A., starting with technological development, including innovation while taking into account the development of employees' professional competence. Given the rapid changes in the Company's operating conditions, it is necessary to constantly strive for excellence and adapt to these changes through (Akademia PGG, 2023):

- ensuring continuous improvement of participants, i.e. that they acquire new skills and action patterns,
- looking for new opportunities to achieve the desired results,
- creation, acquisition and transfer of knowledge,
- modifying behaviour in response to new situations.

In order to realise the aforementioned objectives, it is necessary to continuously improve the competencies of the employees of Polska Grupa Gornicza S.A. through the use of various forms to use the experience of all employees of the organisation to create new knowledge and educate (PGG Academy, 2023):

- experiential learning,
- self-education,
- learning from external entities,
- teaching future staff,
- learning by studying,
- learning with and from others,
- learning from the environment.

As a modern company, Polska Grupa Gornicza wants to be an organisation that constantly adapts to changing economic, market and natural conditions. Its basic premise is to develop and improve the company's operations and to have suitably qualified employees.

## 4. Competence development of mining managers according to the concept of the learning organisation

The directions of change at Polska Grupa Gornicza S.A. that have been set require continuous improvement of executives have been developed and a decision has been taken to build a competency model, in the first instance for key managerial positions.

In modern companies, the competence model is one of the basic tools in the human capital management process. The competency model developed and implemented is a set of competences for the company, allowing it to achieve its goals and tasks. In addition, it constitutes a basic instrument for managing personnel processes for managers, from internal recruitment to the shaping of career paths and training.

The decision to build a competency model by in-house specialists provides the opportunity to prepare tools to determine the level of competences of employees adapted to the specifics of the mining industry. Necessary for this activity was the creation of an internal base of assessors, prepared to conduct competence diagnosis sessions. Ultimately, competency testing in the form of workshops and tasks, using a variety of tools, questionnaire surveys and competency interviews, will guide the entire process to identify reserve personnel for key management positions (Akademia PGG, 2023).

Taking into account the comprehensive approach to the development of the human resource potential of mining managers and long-term development plans, the author proposes the measures included in the model for the development of the competencies of mining managers according to the concept of the learning organisation, shown in Figure 1.

In order to identify development needs, it is necessary to analyse the existing state of competences and to define the target state, i.e. to examine what competences managers should have after completing the training. It is important to establish a hierarchy of competences and to draw up a financial plan. Training objectives should be clear for both trainers and trainees, achievable and easy to measure.

A strategic diagnosis of the company makes it possible to identify a competence gap in the area of human resources and to select actions concerning the elimination of this gap through specific options for the development of managers' competences.

A training needs analysis should be carried out on an ongoing basis. It is a necessary activity that leads to the identification of the difference between the existing situation and the situation that should exist in the company in terms of the knowledge and skills of the employees.

Competence development plans for a company's employees are created on the basis of a comparison between model competences and existing competences in that company, which are then translated into training programmes. Decisions taken in this area depend, among other things, on what kind of competences the employees lack, i.e. whether these are competences that can be easily replaced (by carrying out a selection process) and/or whether they can be easily developed. It is therefore necessary to assess the potential of the employees on a regular basis, together with communicating the results of the assessment to the employees.

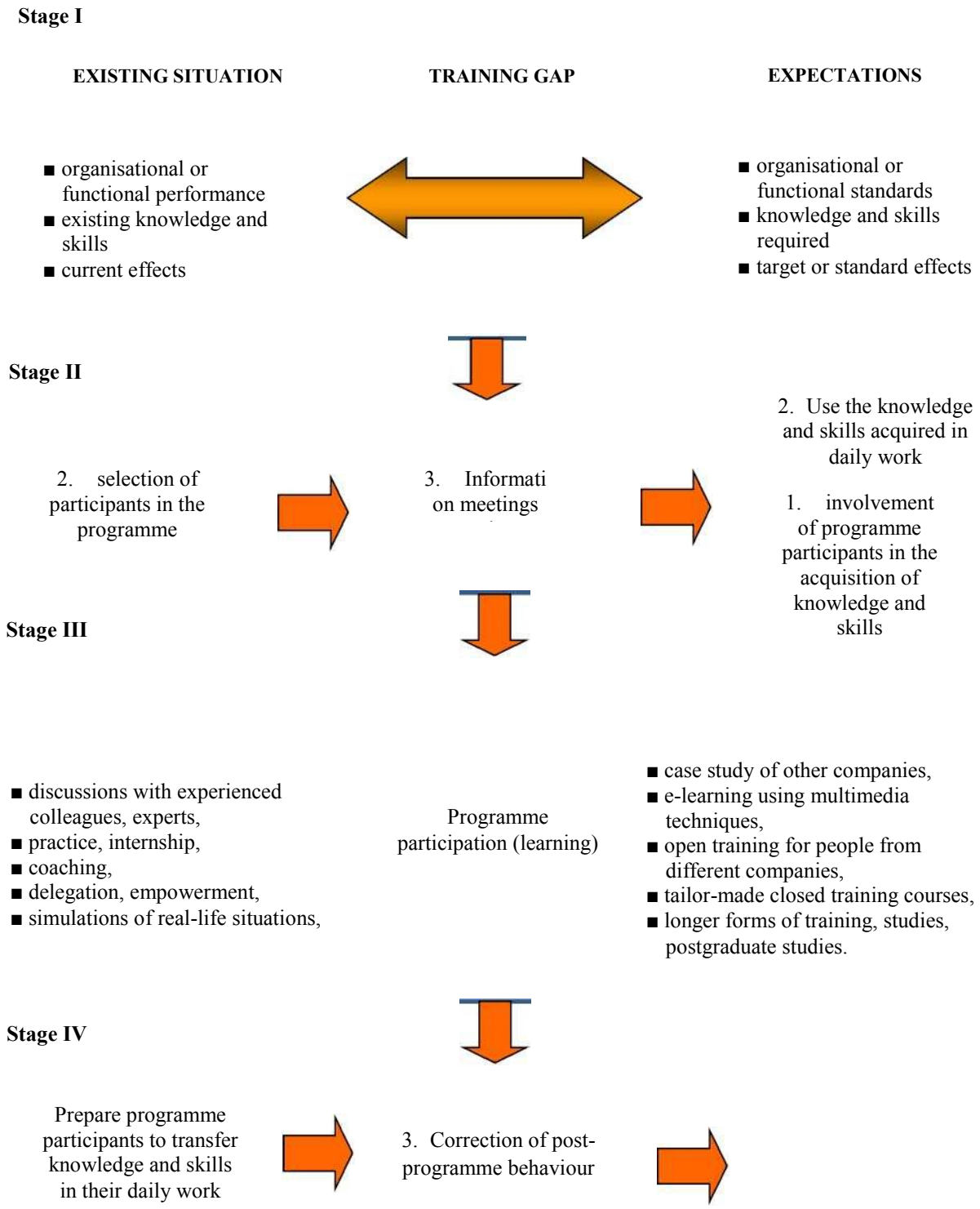


**Figure 1.** Competence development model for mining executives according to the learning organisation concept.

Source: Own study.

The objectives of projects directed at the development of human capital competencies are defined by (Rae, 2001):

- what learners should know, what they should be able to do or what attitude they should have at the end of the programme, i.e. what change should occur and what the difference between the initial and final state (outcomes) should be,
- how participants can demonstrate their acquired knowledge (conditions),
- standards that employees must meet in order to validate their new competences,
- time required to achieve these objectives (conditions).

In the essential part of the model for the development of competencies of mining executives according to the concept of a learning organisation (stage III), the author proposes the use of methods for the development of managers' competencies that are important in the process of transforming an enterprise into an intelligent organisation (Dźwigoł-Barosz, 2007, p. 94). The use of the above methods is justified by the fact that an intelligent organisation, like a learning organisation, is based on knowledge management.

An extremely important role in the whole training project is played by the supervisors of the trainees. Supervisors should understand the impact of their behaviour on the effects of the development projects implemented in the company, what benefits their involvement can bring to the organisation at each stage of the development of these projects, and what losses their lack of involvement brings to the company. At the same time, it is worth making them systematically aware of the size of the training investment, reminding them that the total cost of training is the sum of the costs: salaries of trainers, travel of participants to the training, accommodation, food, salaries paid to participants for the duration of the training, and the cost of lost benefits related to the non-performance of work by those participating in the training (Sosińska, 2007, p. 94).

## 5. Conclusions

The business environment in which Polish enterprises operate, including those in the mining industry, necessitates the implementation of management concepts that increase the competitiveness of enterprises. This possibility is provided by a learning organisation, which adapts to changes in its environment faster than other enterprises.

Through the introduction of new solutions and projects such as the learning organisation, it is possible to provide companies with managers with the right competence potential. In order to achieve key organisational goals, companies need to manage competences, especially of managers, in a modern way. This raises expectations and increasingly high requirements for managers.

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# SUCCESS FACTORS IN PROJECT MANAGEMENT ON THE EXAMPLE OF A SELECTED CONSTRUCTION INDUSTRY ENTERPRISE

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**Introduction/background:** The success of project management depends on a number of factors, and identifying and addressing them in the project management process increases the chance of success. New industrial, residential, or road construction projects are driving the growth of the construction industry. Construction projects are associated not only with the creation of new facilities and expansion of infrastructure, but also with the modernization of existing facilities, and their implementation takes place in a changing and turbulent environment. The above makes it important, especially in times of crisis and uncertainty, to identify factors associated with achieving success when managing these projects.
**Aim of the paper:** Identification and analysis of key success factors in project management in a selected construction company.
**Materials and methods:** To identify and analyse key success factors in construction industry project management, a diagnostic survey was conducted using a survey questionnaire. The survey was conducted among project team members working on construction industry projects in the selected entity.
**Results and conclusions:** Success factors do not represent a universal set that will contribute to the success of every implemented project. On the basis of the empirical research carried out, a list of key success factors in construction industry project management was created, i.e. those factors that contribute most to success in this type of project. Furthermore, on the basis of the empirical research carried out, recommendations were developed for the management of projects in the selected entity, with particular attention paid to identified factors.

**Keywords:** success factors, project management, construction industry.

**Category of the paper:** Research paper.

## 1. Introduction

Construction projects are undertakings commissioned by an external or internal investor. The environment of construction project implementation is turbulent and changeable (high level of risk, interaction of influential stakeholders, uncertainty of operating conditions) (Głodziński, 2017). The goal of the implementation of a construction project is the fulfilment of human interests, and the project product itself, i.e. the facility/building, is only a tool that helps to achieve the goal (Winiarski, 2019).

The growth of the construction industry is resulting in a number of new developments. Various types of road, industrial or residential developments are being realised and continue to be in great demand. Not only are new facilities being built and infrastructure being expanded, but existing facilities are also being modernised. Construction industry projects have a number of specific features, which include (Głodziński, 2017): (1) specific legal requirements (e.g. construction permit), (2) large variety and complexity of works, which results in the need for an appropriate schedule, proper coordination and clear documentation of already performed activities, (3) execution of works in a specific place, and thus the organisation of construction facilities and resources and the identification of the site looking at logistical or social aspects, (4) a large share of subcontractors in the total works, which is caused by the specificity of construction works and an attempt to streamline the execution of performed tasks, (5) financial settlements (investor - contractor) dependent on the level of progress of the construction works, (6) possibility of the emergence of risks, uncertainties as well as opportunities due to the long deadline for implementation and the high value of the project, (7) implementation of activities dependent on the prevailing weather conditions, (8) the need to have civil liability insurance for engineers with construction qualifications and the use of contract insurance.

Generally, projects are implemented to meet requirements, where, in relation to construction projects, these requirements relate to technical, economic, organisational and social aspects. Technical requirements are determined by the documentation and the needs of the client, economic ones relate to the costs of production and operation, organisational ones are related to the schedule, while social ones have to do with the reception of the investment among the community (Głodziński, 2017).

The above makes it important, especially in times of crisis and uncertainty, to identify the factors contributing to success when managing these projects, so the aim of this paper is to identify and analyse the key success factors in project management in a construction company. The research was conducted among project team members involved in the implementation of selected projects.

## 2. Theoretical background

Following Levy (2006), the management of construction projects can be divided into four parts: (1) construction engineering - the appropriate technique for the incorporation of materials, systems, etc., and the selection of appropriate technology for this purpose; (2) construction process management - establishing an efficient way of carrying out the construction process, including the appropriate preparation of the schedule and controlling the progress of the work, the flow of materials and equipment needed; (3) human resource management - exercising control over human resources so that the work can be carried out efficiently; (4) financial management - controlling the costs, cash flow and financing of the project. There are also principles that the project manager should implement. These include: completing the project on time, not exceeding the budget, achieving the planned quality, maintaining the contractor's professional relationship with designers and subcontractors, completing the project without unresolved problems, the contractor-client relationship not damaged. The aforementioned principles contribute to the successful completion of the project, i.e. its successful execution.

Success is an ambiguous and difficult concept to define. According to the simplest definition provided by the PWN Polish Language Dictionary, success is "the successful outcome of an undertaking, the achievement of an intended goal". When considering success in the context of project implementation, in turn, the literature often refers to the project budget and implementation time, but it is a construct that is very hard to define (Ika, 2009). Following Ika (2009), the definition of success is ambiguous, heterogeneous and multidimensional and context-dependent. Many authors refer to the following as synonyms for success: effectiveness - doing the right things (maximising efficiency with increased inputs) and efficiency - doing things the right way (achieving project goals), which according to Ika (2009) certainly corresponds to project success.

The literature, treating project success, most often cites the project triangle (iron triangle), which is composed of three parameters: cost, time, scope, supplemented interchangeably by quality or efficiency (Urbanelis, 2014). Most authors believe that the listed parameters cannot be exceeded for a project to be considered a success, and the indicated iron triangle according to Ika (2009) between 1960 and 1980 was valid as a criterion for achieving success in a project. In the following years, i.e. 1980-2000, benefits for the organisation, customer satisfaction, benefits for the stakeholders and the project team and end-user satisfaction were added to the iron triangle. Whereas in the 21st century, the above were supplemented by the organisation's strategic goals and business success and a symbolic success/failure assessment (Ika, 2009). According to the PMBOK Guide (2013), project success is defined by the quality of the product and project, completion on time, within budget and customer satisfaction.

In the literature, a distinction can be found between project success and project management success. According to Radujkovic and Sjekavic (2017), project management success is associated with the traditional approach to project success - time, cost, quality (short-term goal orientation), while project success is associated with the achievement of overall project goals (long-term goal orientation). This approach indicates that it is possible to achieve project success with inadequate project management and it is possible to achieve project management success without achieving project success (Radujkovic, Sjekavica, 2017). However, it is important to emphasise that due to the strong mutual relationship, it is difficult to completely differentiate the notion of project success and project management success. Correct project management can significantly increase the chance of project success. Project management success is one element of project success, and without it there is little chance of project success (Radujkovic, Sjekavica, 2017). Similarly, Kapusta (2013) argues, writing that project management aims to increase the probability of project success. Following Sudhakar (2016), project success occurs when there is project management success and project product success (Figure 1).

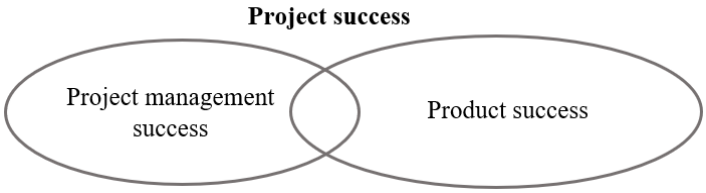


**Figure 1.** Project success.

Source: Sudhakar G.P. (2016). Understanding the Meaning of "Project Success". Binus Business Review, 7(2), p. 164.

The literature also contains items where the authors attempt to discern the project success factors of the construction industry. Research on these factors has been carried out in India, among others, and the aim of the study was to identify those factors that are most important for project management success in the construction industry. Aneesha and Haridharan (2017) distinguished the following factors: management support, skilled project team, problem-solving skills, realistic estimation of cost and duration of tasks, information and communication, competence of the project manager, technical skills of the project manager, commitment, sound leadership, experience in practising project management tools, use of appropriate technology.

Following Chan et al. (2004), the success of a construction project is made up of factors falling into five categories: project management activities, project procedures, external environment, project factors and human factors. Thus, project management factors include: development of an appropriate organisational structure, communication system, control, feedback, scheduling, control of subcontractor work, introduction of an effective safety programme, introduction of a quality assurance programme and general management activities (Chan et al., 2004). Factors belonging to the project procedures include the bidding rules and the tendering procedure. Factors belonging to the external environment include: economic

environment, social environment, political environment, physical environment, advanced technology. Design factors consist of the type, size, complexity and nature of the project (Chan et al., 2004). Human factors, which include: client's emphasis on low construction cost, on high quality, on rapid delivery; size of the organisation, source of client funds (private, public); client's ability to make decisions, set rules; client's participation in the design of the facility; project manager's possession of planning, organising, coordinating, motivating skills; project manager's experience; team's technical skills; project manager's early involvement; project manager's ability to deal with changes in the project plan, relationships with team members, project manager's drive to meet the design triangle; project unit's support and entrustment of resources (Chan et al., 2004).

Głodziński E. (2017), on the other hand, lists the factors that influence the efficiency of a construction project, adding that they are not different from the critical success factors of project management defined in the literature. These factors include, but are not limited to: the quality of risk management, i.e. the detection of opportunities and threats, and stimulus and preventive actions; favourable contractual provisions towards the contractor, which define the contractor's responsibilities, how changes in scope are to be communicated, or the resolution of disputes; the effectiveness of the project team, construction manager and contract in activities, i.e. adequate planning, coordination of implementation, etc.; meeting the deadlines in the schedule agreed with the client; the quality of the budget adopted from the bidding phase, i.e. no errors, sound assumptions, provision for risks; the quality of the supply and procurement process, i.e. contracts with such subcontractors and material suppliers who can meet them. In addition, complementing the key factors for the success of a construction project are: the contractual provisions between the client and the contractor; the quality of the budget set during the bidding and contract signing phase; and the quality of the procurement ordering process (Głodziński, 2017). Gunduz and Yahya (2018), based on a review of the literature as well as their research, attempted to define the most relevant success factors in construction project management, identifying five factors that should be given special attention to increase the chance of project success. These include: technical capabilities of the company - whether the technical skills belong to the client or the contractor, they lead to the success of the project; definition of the scope and type of work - unambiguous, clearly defined tasks to be performed by the different parties to the project, which will avoid disputes and inaccuracies, which could lead to delays in implementation or increased costs; control system - a better controlled project will lead to success; it is important to identify what is not going according to plan and assess what can be done to remedy this; effective site management - having the right people on site will be key to timely completion; they are essential to the project; the skills and dedication of the project manager – he/she controls all aspects of the project and through his/her experience and dedication this may lead to the success of the project.

Herath and Chong (2021) allocated success factors in construction industry project management to five categories: human resource management, construction project, project management effectiveness, project stakeholder management and project budget. Factors relating to human resource management include: commitment, motivation, communication and support from senior management, availability of technology, staff competence and existing experience and skills and familiarity with the project environment, staff skills development and training, clear definition of objectives (Herath, Chong, 2021). The second group of factors relates to the construction project. This is a very important group because if the construction design is unreliably done it takes a lot of changes in the execution phase to be able to do the building properly, which means a lot of delays and additional costs. Success factors include: effective communication and coordination, a skilled project preparation team paying attention to the environment and stakeholder requirements, and sufficient time to prepare a complete project (Herath, Chong, 2021). Effective project management involves control and coordination by the project team, especially the project manager, who should have appropriate skills and experience, including technical skills. It is said that it is the project manager who determines success. Among the tasks of the project manager are: participation in the preparation phase of the construction project, communication and stakeholder management, management and control of all project activities (Herath, Chong, 2021). The next group of factors relates to stakeholder management. Success factors associated with this group include: stakeholder attitude, needs, involvement, influence, interest and satisfaction, trust in the project manager and sound communication (Herath, Chong, 2021). In contrast, factors related to the project budget include: adequate cost estimation, consideration of contingencies (taking into account project parameters, environment, historical data), and managing, controlling and maintaining the budget as originally intended (Herath, Chong, 2021).

## 3. Methodology of research

The subject chosen for the empirical research is a company that has been operating in the construction industry, nationwide, for more than 10 years. The company's activities are focused on the execution of industrial flooring and exterior paving, and the spectrum of its activities is wide. The investments located all over Poland, which consequently leads to constant change in the place of work of employed workers and supervision. The company carries out projects for leaders in the construction market, as well as working with smaller general contractors. In addition to working with general contractors, the company also carries out tasks directly for investors and private individuals.

In order to identify and analyse the key success factors in project management in a construction company, it was decided to carry out a diagnostic survey using a survey questionnaire. The respondents of the surveys carried out were twenty members of project teams who were involved in the implementation of already completed projects. The completed projects are:

Project 1, which concerned the implementation of industrial flooring in production and storage halls. This was a large-scale investment (with an area of more than 15,000 $m^2$) located in the south of Poland, and the analysed company carried out work on this facility on behalf of a general contractor.

Project 2, which involved the realisation of floors in a shopping mall located in northern Poland. The project was commissioned by the project's general contractor. Floors in tertiary and retail facilities do not have specific requirements in terms of slab bearing capacity, and the focus is on the requirements of the individual tenants of the facility.

Project 3, which concerned the construction of an industrial floor in the warehouse and production halls and concrete paving with a total area of over 20,000 $m^2$.

Project 4, which concerned the construction of an outdoor pavement in an area of special interest. The execution of projects of this type differs from the others, as these projects are characterised by particular thoroughness in the planning of the work, as well as the execution itself and the quality of the work carried out.

A group of twenty project team members were asked to provide answers regarding achieving success in the implementation of selected projects. It was assumed that project success in the construction industry is primarily about executing a project in such a way that basic parameters such as cost, time and scope are not exceeded and the intended project goals are achieved. The questionnaire, which was the tool in the empirical research conducted, consisted of nine questions. The survey was conducted anonymously in a face-to-face format. Twenty questionnaires were distributed to respondents, of which twenty completely and correctly completed questionnaires were returned. The respondents have extensive experience of projects in the company under analysis, as well as in other companies in the construction industry with which they have worked to date.

The purpose of the survey was to select from among the project influencing factors those that are key to success in construction industry project management. The success factors listed in the survey were prepared on the basis of the literature analysis. In order to organise them, they were divided into four groups, which were named: general, project manager, project team and technical. The general group included: factor 1 - well-defined project objective; factor 2 - clearly defined type of work and scope of tasks; factor 3 - knowledge and consideration of client requirements; factor 4 - detailed development and adherence to the schedule; factor 5 - realistic planning of the duration of the work; factor 6 - ensuring that deadlines are met; factor 7 - reliable cost estimation and budget execution; factor 8 - consideration of unforeseen expenses in the budget; factor 9 - financial security of the contract (e.g. by making use of insurance); factor 10

- ensuring that the project team is able to meet the deadlines. factor 10 - sound budget management; factor 11 - choosing the right collaborators (suppliers, subcontractors, etc.); factor 12 - appropriate terms and conditions; factor 12 - appropriate contractual conditions with the client; factor 13 - appropriate contractual conditions with subcontractors and suppliers, etc.; factor 14 - duly estimated resource requirements (materials, people, equipment); factor 15 - adequate allocation and availability of resources; factor 16 - coordination during project implementation; factor 17 - control during each phase of the project; factor 18 - stakeholder management (identification, communication, nurturing relationships); factor 19 - project risk management; factor 20 - use of IT tools to support project implementation; factor 21 - establishment of an adequate organisational structure; factor 22 - support of the project by top management. In the second group, the manager included the following factors: factor 1 - experience in project management; factor 2 - authority of the project manager; factor 3 - sound leadership; factor 4 - professionalism; factor 5 - ability to make decisions; factor 6 - ability to coordinate tasks; factor 7 - ability to manage change; factor 8 - ability to communicate; factor 9 - flexibility; factor 10 - ability to work as a team; factor 11 - ability to negotiate; factor 12 - technical expertise; factor 13 - exercising sound control; factor 14 - involvement of the manager at an early stage of the project; factor 15 - one manager for the duration of the whole project; factor 16 - good relations with the project team. The third group of questions related to the project team. This group included factors such as: factor 1 - experience possessed; factor 2 - technical knowledge possessed; factor 3 - adequate qualifications of the team; factor 4 - due selection of team members for particular tasks; factor 5 - ability to deal with changes in the project; factor 6 - division of responsibilities and tasks; factor 7 - productivity; factor 8 - constancy in the composition of the project team; factor 9 - working atmosphere; factor 10 - ability to work as a team, adequate cooperation; factor 11 - taking care of the project team (extending knowledge and skills, development); factor 12 - due motivation; factor 13 - communication within the team. The last group, relating to technical aspects, included the following factors: factor 1 - appropriate selection of the entity preparing the construction project; factor 2 - adequate time for the preparation of the construction project; factor 3 – effective communication and coordination in the preparation phase of the construction project; factor 4 - consideration of the requirements set in the construction project; factor 5 - participation of the client in the design phase; factor 6 - quality of the design documentation; factor 7 - knowledge of the technology; factor 8 - ability to select the appropriate technology for the specific project task; factor 9 - technical capabilities of the company; factor 10 - experience of the construction staff; factor 11 - adequate supervision on site; factor 12 - quality of the construction work; factor 13 - appropriate equipment.

The questions asked people to indicate to what extent a factor influences the success of a project. A 5-point Likert scale was used, where: 1 - very low impact, 2 - low impact, 3 - medium impact, 4 - high impact and 5 - key factor. Only those factors marked by respondents as having a high impact on the success of the project (rating 4) and, as key success factors (rating 5) were included in the survey results.

The survey included questions on gender, education, experience in the construction industry and length of service in the company under study in the metrics section. Thus, 60% of the respondents in the survey were men, while 40% were women. Although more and more women are involved in the construction industry, men are still the more numerous group employed in the company under study. Furthermore, among the respondents, 85% were over 30 years of age, of which 60% are between 30 and 40 years of age and 25% are over 45 years of age. Only 15% of the respondents were in the 18-29 age group. Among the respondents, 75% are tertiary educated. Respondents with secondary and intermediate technical education comprise a group of 25%, of which 20% have secondary technical education. Respondents were asked about their experience in the construction industry. The empirical results show that only 15% of the respondents have experience of less than 5 years. The largest group of respondents, comprising 55% of all respondents, are those working in the construction industry for between 6 and 10 years. Among the respondents there are also people (30%) who have experience in the construction industry of more than 10 years. Additionally, respondents were asked about their seniority in the entity under analysis. Less than 5 years of experience was reported by 15% of the respondents. The highest percentage of respondents (60%) have been working in the analysed company for 6-10 years. Members of the project team who have been working in the analysed entity for more than 10 years also took part in the survey.

## 4. Results

Success factors in construction industry projects were divided into four groups: general, project manager, project team and technical. Factors that were identified as those with very low impact, low impact and medium impact were omitted from the analysis of the results, as the aim of the research is to find the factors with the greatest impact on project management success.

The first group is the factors belonging to the 'General' group. The empirical results for this group are presented in figure 2.

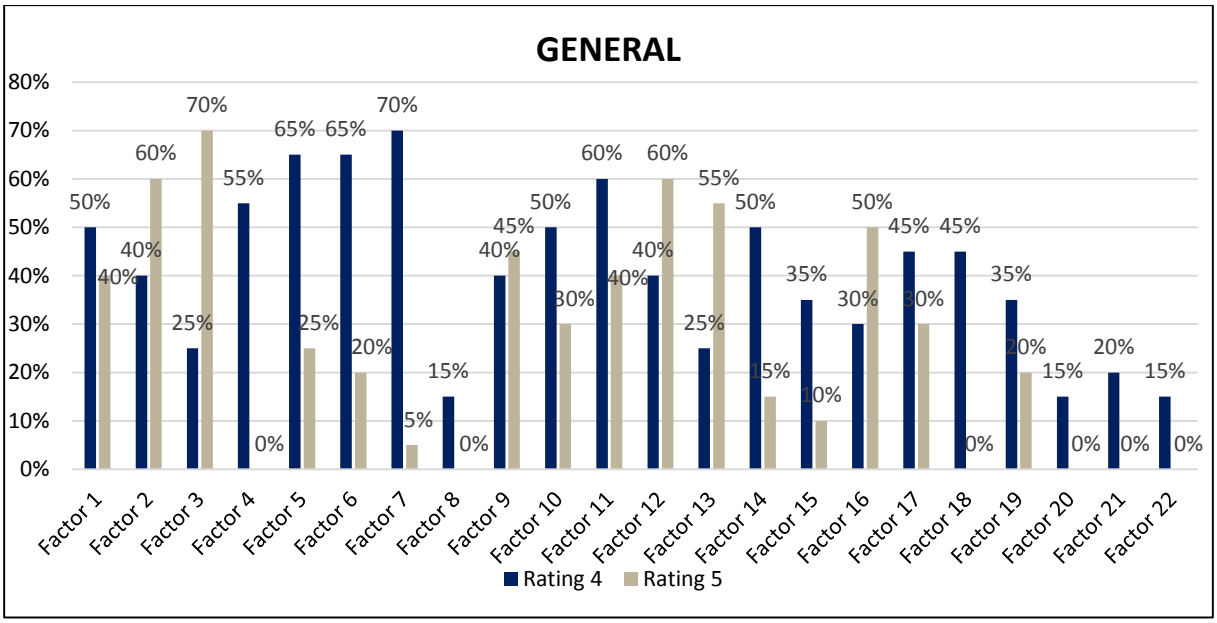


**Figure 2.** Success factors in the "general" group.

Source: own work.

When analysing the results, it can be concluded that the respondents consider the following factors to be key: factor 2 - clearly defined type of work and scope of tasks (60%), factor 3 - knowledge and consideration of the client's requirements (70%), factor 9 - financial security of the contract (45%), factor 12 - appropriate contractual conditions with the client (60%), factor 13 - appropriate contractual conditions with subcontractors and suppliers, etc. (55%), and factor 14 - coordination during project implementation (50%). (55%), factor 16 - coordination during project implementation (50%).

The second group of questions concerned the project manager. The empirical results for this group are presented in figure 3.

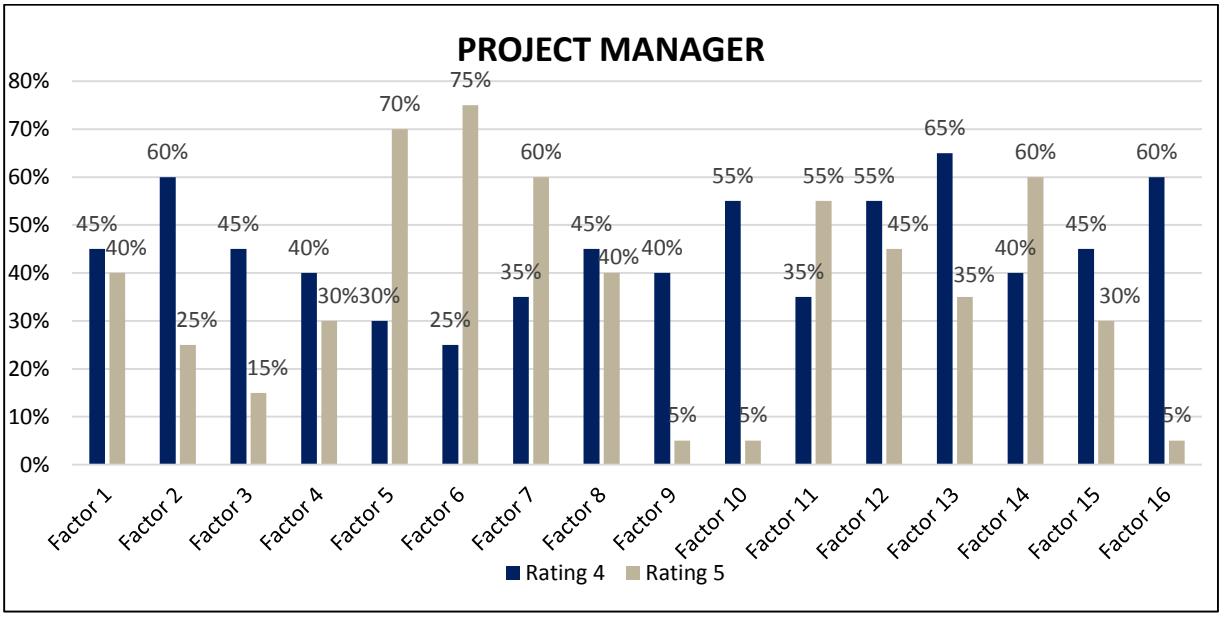


**Figure 3.** Success factors in the "project manager" group

Source: own work.

The results of the survey allow us to conclude that, according to the respondents, the key success factors for project management in this group are: factor 5 - ability to make decisions (70%), factor 6 - ability to coordinate tasks (75%), factor 7 - ability to manage change (60%), factor 11 - ability to negotiate (55%), factor 14 - involvement of the manager at an early stage of the project (60%).

The next question related to project team factors. The empirical results for this group are presented in figure 4.

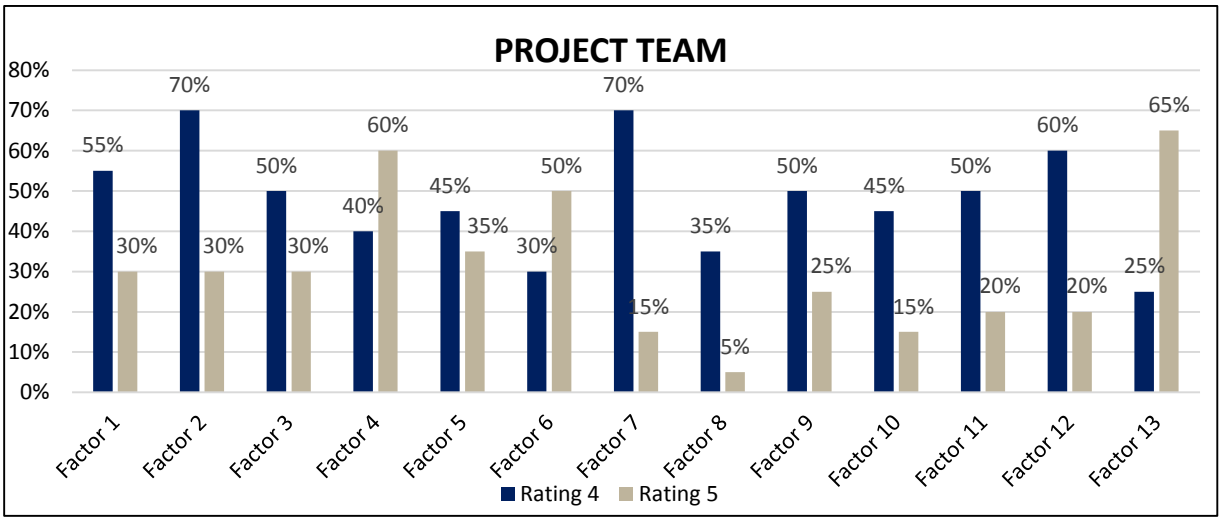


**Figure 4.** Success factors in the "project team" group.

Source: own work.

The respondents considered the following as key in this group: factor 4 - due selection of team members for particular tasks (60%), factor 6 - division of responsibilities and tasks (50%), factor 13 - communication in the team (65%).

The last group of factors analysed were technical factors. The empirical results for this group are presented in figure 5.

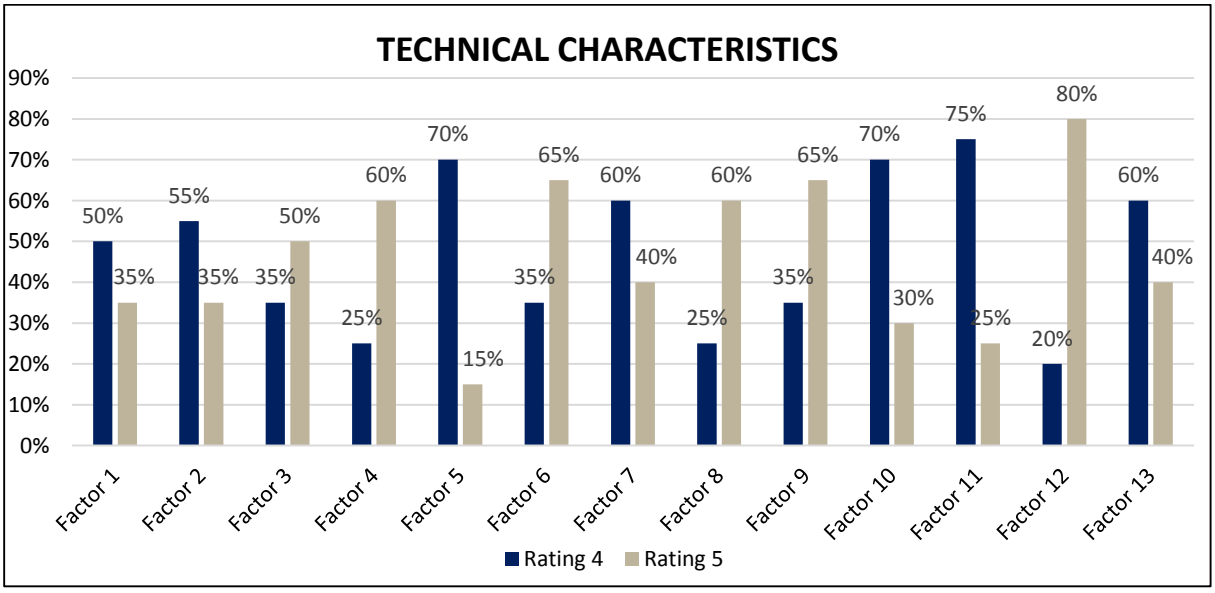


**Figure 5.** Success factors in the "technical" group.

Source: own work.

Analysing the respondents' answers to the question on technical factors (presented in Figure 5), it can be concluded that the key factors in this group include: factor 3 - effective communication and coordination in the preparation phase of the construction project (50%), factor 4 - consideration of the requirements set in the construction project (60%), factor 6 - quality of the design documentation (65%), factor 8 - ability to select the right technology for the specific design task (60%), factor 9 - technical capabilities of the company (65%), factor 12 - quality of the construction work (80%).

To summarise the empirical findings, the key success factors for project management in the construction industry include:

1. general factors: factor 2 - clearly defined type of work and scope of tasks (60%), factor 3 - knowledge of and consideration for the client's requirements (70%), factor 9 - financial security for the contract (45%), factor 12 - appropriate contractual conditions with the client (60%), factor 13 - appropriate contractual conditions with subcontractors and suppliers, etc. (55%), factor 14 - coordination during project implementation (50%), and factor 15 - coordination during project implementation (50%). (55%), factor 16 - coordination during project implementation (50%);
2. project manager factors: factor 5 - ability to make decisions (70%), factor 6 - ability to coordinate tasks (75%), factor 7 - ability to manage change (60%), factor 11 - ability to negotiate (55%), factor 14 - involvement of the manager at an early stage of the project (60%);
3. project team factors: factor 4 - due selection of team members for specific tasks (60%), factor 6 - division of responsibilities and tasks within the project team (50%), factor 13 - communication within the team (65%);
4. technical factors: factor 3 - effective communication and coordination in the preparation phase of the construction project (50%), factor 4 - incorporation of the requirements in the construction project (60%), factor 6 - quality of the design documentation (65%), factor 8 - ability to select the right technology for the specific design task (60%), factor 9 - technical capabilities of the company (65%), factor 12 - quality of the construction work (80%).

Analysing the results of the research, out of all the items selected for the developed questionnaire survey, out of all four groups of factors ("general", "project manager", "project team", "technical"), the factors having a very low impact, a low impact and a medium impact on the success of project management (marked by the respondents in the questionnaire on a 5-point scale with the digits 1, 2, 3, respectively) constitute only 14% of all the factors. The factors identified in the empirical research as having a high impact on project success (marked by the survey participants in the questionnaire on a 5-point scale with the number 4) account for as much as 55% of all factors. The remainder of the factors, i.e. the factors identified by respondents as key factors for project success, are a group of 31% of all factors.

Factors that were assessed by the respondents in the empirical research carried out as having a negligible relationship with achieving success in project management of the construction industry and were thus omitted from the presented research results were:

1. general factors: factor 8 - inclusion of contingencies in the budget, factor 15 - appropriate allocation and availability of resources, factor 18 - stakeholder management, factor 19 - project risk management, factor 20 - use of IT tools to support project implementation, factor 21 - setting up an appropriate organisational structure, factor 22 - support of the project by top management;
2. project manager factors: factor 9 - flexibility;
3. project team factors: factor 8 - constancy in the composition of the project team;
4. technical factors: none.

## 5. Discussion and conclusion

The aim of this paper was to identify and analyse the key success factors for project management in a construction company. On the basis of the empirical research carried out, the following conclusions can be drawn:

1. Project success is a difficult concept to define, but many authors begin their consideration of success with an iron triangle comprising basic parameters such as cost, time, scope (interchangeably quality, efficiency).
2. The success of a project consists of many different factors, examples of which, described by many authors, have been mentioned in this paper and served as the basis for the development of the questionnaire, the tool used for the empirical research in the company analysed.
3. Due to the diversity of ongoing projects (e.g. by different players in different industries), there are different success factors. Success factors do not represent a universal set that will contribute to the success of every implemented project.
4. On the basis of the empirical research carried out, a list of key success factors in construction industry project management, i.e. those with the greatest impact on the success of this type of project, was created. These include:
   - clearly defined type of work and scope of tasks,
   - knowledge and consideration of customer requirements,
   - financial security of the contract,
   - relevant contractual terms and conditions with the employer,
   - appropriate contractual conditions with subcontractors and suppliers, etc.,
   - coordination during project implementation,
   - having decision-making skills by the project manager,

- having the ability to coordinate tasks by the project manager,
- having the project manager's change management skills,
- having the project manager's negotiating skills,
- involvement of the manager at an early stage of the project,
- due selection of team members for individual tasks,
- division of responsibilities and tasks within the project team,
- team communication,
- effective communication and coordination during the construction project preparation phase,
- inclusion of the requirements in the construction project,
- quality of the project documentation,
- ability to select the appropriate technology for a specific project task,
- technical capacity of the company,
- quality of construction work.

5. Key success factors in construction industry project management were identified and analysed with the aim of highlighting them during project activities and thus increasing the chances of success during construction projects.

Furthermore, on the basis of the empirical research carried out, when managing a construction industry project, it is proposed to:

1. Pay particular attention to defining in a clear and lucid manner the type and scope of work to be carried out.
2. Ensure appropriate contract provisions and terms, e.g. with the employer, suppliers, subcontractors, and provide adequate financial security for the contract.
3. Select a qualified, experienced project manager involved in the project at an early stage.
4. Know and take into account the client's requirements at every stage of the project (including during the creation of the construction, detailed design).
5. Properly coordinate work during project implementation.
6. Appropriately select project team members for individual tasks, together with the division of responsibility for each task and attention to communication within the team.
7. Ensure that the company has the right technical capacity and the ability to select the right technology for the specific project task.
8. Take care of the quality of the construction work performed and the quality of the project documentation (including effective communication and coordination during the preparation phase of the construction, detailed design).

In summary, the identification of key success factors in the management of construction industry projects is aimed at listing and highlighting certain issues, features or events that are very relevant and significant to the implementation of this type of project. The inclusion of these factors in the project management process is intended to increase the chance of success. As mentioned earlier, there is no universal list or set of success factors to fit every project

implementation. The developed and presented set of key success factors is dedicated to entities operating in the construction industry. On the basis of the analyses carried out, it is proposed to use the developed list of key success factors for a project or, on the basis of the experience and observations, to modify it to fit a given project set in specific conditions and specific realities.

## Acknowledgements

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# INCENTIVE SYSTEM IN PROJECT MANAGEMENT ON THE EXAMPLE OF AN INTERNATIONAL MANUFACTURING COMPANY

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**Introduction/background**: The issue of employee motivation in project teams is one of the key challenges that arise in the project management process, as the success of a project largely depends on the level of employee engagement. Creating an effective incentive system that increases the level of employee commitment to projects every day is key to the success of the company. However, this is not an easy process, as the recipe for the right motivation methods that employees would be fully satisfied with does not exist.

**Aim of the paper**: The aim of the paper was to identify and evaluate the incentive system in project management carried out on the example of a selected multinational manufacturing company producing industrial automation.

**Materials and methods**: The research tool was a survey questionnaire consisting of six metric questions to clarify the socio-demographic characteristics of the respondents and fifteen closed questions relating to the incentive system of the company under study. The subject of the study was one of the world's largest automation and industrial IT companies.

**Results and conclusions**: The results of the study made it possible to assess the effectiveness of the incentive system in the studied enterprise, to indicate the range of tools that managers can use to motivate members of project teams and to formulate recommendations or recommendations for the studied enterprise.

**Keywords:** incentive system, project management, motivation, wage and non-wage incentive factors, project teams.

## 1. Introduction

Motivation is a key factor in the success of a company, and the quality of human potential is a basic condition for creating a competitive market advantage. An efficient incentive system is a good investment, as the attitude and performance of a properly motivated employee results in increased work efficiency and enables the achievement of set goals,

which in turn translates into an adequate financial result for the company. Preparation and competence alone are not enough to guarantee the success of a company. An unconditional factor influencing the effective use of employees' skills is motivation.

In contemporary literature, no single theory fully explains the nature of motivation, yet each of them brings its readers closer to knowing what makes employees productive and engaged at work. Current concepts of motivation are based on a myriad of methods, techniques and their complexity. The first step in building a well-functioning incentive system is to properly identify and analyze employee needs. Motives themselves are an intrinsic factor of the organism; they are self-appearing stimuli that are difficult to generalize, as each person is different and each can be motivated by something completely different. Expectations can take different forms, depending on the region in which the company is located, age, education as well as the character or temperament of the employee himself.

Recognition is essential, as it is a prerequisite for taking informed and reliable action, which later transforms into cohesion of interests between employee and employer, enabling the strategic objectives of the company to be realized. Internal factors change frequently, which is why it is important to continuously and uninterruptedly monitor the needs of employees by measuring them with appropriate indicators.

The knowledge and skills of employees determine whether and to what extent the organization’s a goal will be achieved, meanwhile, it is the awareness of the manager and the importance he/she attaches to the process of employee motivation that determines the direction in which a particular team, as well as the organization as a whole, will develop. Effective motivation is part and parcel of a manager's responsibilities, as he or she is responsible for maintaining an adequate level of employee motivation and subsequently monitoring it. A properly functioning incentive system should be in place from the very beginning, from the moment of employment, when the employee first comes into contact with the new organization, because establishing good contact and making a positive impression can pay off in the long term. At a later stage, it is important to build a clear career path, bearing in mind the employee's desires and expectations. A component that should not be missing from the structure of a well-functioning incentive system is also the evaluation of employees' performance by their superiors, carried out using methods that allow for fair judgment and stimulate employees' ambitions towards professional development.

The increasingly demanding and competitive labour market makes almost every company strive to build a reasonably effective incentive system. In order to retain an employee for longer, more and more employers are choosing to introduce modern solutions and facilities which, thanks to their attractiveness, will attract new employees and bring the desired personal satisfaction to those currently employed. In progressive companies, where intellectual capital is seen as one of the most important values, self-reliance and development are favoured. The incentive system is designed to meet the expectations of employees to the greatest extent possible, formulating relationships that give employees the opportunity to

achieve individual goals in conjunction with organizational objectives, while also bearing in mind the financial possibilities of the company.

The aim of this paper was to identify and evaluate the incentive system in project management carried out on the example of a selected international manufacturing company, producing industrial automation. The leading problem considered was to confirm whether the employees who are members of the project teams of the company under study are adequately motivated to work throughout the project life cycle, and whether there is an incentive system in the company that is effective and correctly applied by supervisors.

The paper is structured as follows. Section two addresses the theoretical aspects of employee motivation in project management. It basically addresses issues concerning the definition of the concepts of motivating and motivation, the role of employee motivation and incentive systems in project management, and the classification of incentive factors. Next, method and data is described. The fourth section presents the results of a survey relating to the evaluation of the effectiveness of the incentive system in a selected international manufacturing company. The paper end with conclusions.

## 2. Theoretical aspects of employee motivation in project management

In management theory, motivation is the factor that determines the scale, direction and continuity of effort at work. It is an inner voice rooted in the human subconscious that encourages action and prompts us to do something. M.W. Kopertyńska (2009) calls the desire to do something a motive. It occurs when we become aware of some unmet need and express a desire to take various actions to satisfy it (Wróblewski, 2005). J. Penc (2011, p. 243) explains motivation as "a set of factors of psychological or physiological nature triggering and organizing human behaviour directed towards the achievement of a specific goal, a psychological mechanism regulating any behaviour preceded by choice". F. Michoń (1981) explains that the concept of motivation applies to every human being, regardless of age, education or background. It accompanies us in every area of life, including in the sphere of work and plays a key role there.

Motivation, on the other hand, is a management activity, a kind of dialogue process aimed at influencing others, developing and intensifying in employees the latent desire and readiness in them to take a specific action, to achieve a specific goal and project tasks (Adamus, 2005). In a broad sense, motivation is the influence on the entire organization, on the people involved in projects, so that they perform their duties as efficiently and effectively as possible (Kisielnicki, 2011). L.H. Haber (1995, p. 144) aptly pointed out that "motivation consists in the manager's individualized approach to the employee, penetrating the employee's system of needs and expectations, creating appropriate working conditions and choosing the best way to

direct, so that the work performed by the employee can become the basis for the realization of the company's goals". Motivation is, therefore, a deliberate and thoughtful process aimed at influencing people's behavioural motives using appropriate means, creating opportunities to realize their value systems and desires in order to achieve the motivational goal. In other words, motivation is based on the fusion of employees' goals with the goals of the motivating person, who is most often the supervisor (Borkowska, 1985).

Motivation is a complex process that can be stimulated using a variety of methods. In the literature, the most common types of motivation are described: intrinsic and extrinsic, and negative and positive. In the case of the first distinction, the criterion for division is the type of values a person holds (Borkowska, 1985). If we are talking of activities that already have a value in themselves, bring joy and satisfaction while stimulating the employee's interest, we are talking about intrinsic motivation. Its stimuli arise spontaneously, there are no promises of rewards or benefits behind them, they directly lead to the achievement of ultimate values. These include such stimuli as responsibility, recognition, a sense of influence, freedom of action in the broad sense, the chance to develop, the conviction that work is important, curiosity, which fills the work with passion and makes everyday duties interesting. If, on the other hand, values are only a method to achieve final, i.e. real goals, this motivation is defined as extrinsic. Actions are only taken because they will ultimately lead to material benefits or avoid unwanted consequences. They do not themselves bring satisfaction, but only mask a state of dissatisfaction. External factors are most often salary, monetary rewards of all kinds and privileges.

In the case of the second division, we are talking about positive motivation, when the employer provides the employee with more and more opportunities for professional development, while at the same time expecting him or her to fulfill previously assigned tasks. By fulfilling the employer's expectations, the employee is given the chance to increase his/her earnings, there is often the prospect of promotion or independence and responsibility increases in the tasks performed on a daily basis (Penc, 1998). The effectiveness of this type of motivation depends primarily on the subsequent materialization of the promises made. If an employee perceives real change, he or she will be more willing to engage in the tasks entrusted to him or her and, as a consequence, the work efficiency will increase. Negative motivation comes down to evoking a consciousness in the employee that increases the intensity of his work, but it is mainly anxiety-based and increases the fear of losing the job or some of the financial resources. The employer uses this type of motivation because it does not involve any additional monetary outlay, while at the same time improving the employee's performance. However, this is not the best way to motivate an employee, as constant work under pressure, stress and feelings of anxiety lead to a lowering of the employee’s self-esteem, a decrease in aspirations, a lowering of the feeling of well-being and take away the joy of life.

Employee motivation in project teams is a fundamental issue and the subject of much discussion among project managers, as it is the main impetus affecting the performance of the entire project team. Achieving the goals set by organizations, entails the need to have a project team that works well together and is able to carry out the tasks assigned to them in a fast and efficient manner. This definition of a team refers to a group of people who, despite having the right competences, are still adequately motivated to work and who identify themselves with the organization's goals. The main sources of motivation used in project teams refer to needs such as (Trocki et al., 2003) the desire for security, the need to succeed, compatible values, the need for competence, curiosity, personal disposition and predisposition. Understanding motivation in the project management process, and exactly what triggers, directs and sustains people's behaviour, has always been a puzzle. There is no recipe for effective motivation, but there is a group of principles that guide managers, including project managers, on how to increase the effectiveness of the motivational activities used (Wachowiak, 2002). The literature emphasizes that the motivation process should start with the manager himself, who, being aware of the goals he plans to achieve, has the ability to set them for his employees, and delegates tasks and thus shares power with his employees. When delegating tasks, he is obliged to ensure that they are transparent. He should believe in his employees, praise them and have strong trust in them, recognize their needs and at the same time try to help meet them. Motivate employees in a way that allows them to see opportunities to develop their skills and, if they stumble, turn failures into later successes. Continue to encourage healthy competition, increase their autonomy while giving them a sense of influence over decisions, and ensure that employees belong to the organization.

Motivating the team plays a key role in any project. The right knowledge and experience in this subject allows managers to consciously steer the project, leading to the expected success. The effectiveness of a manager, including a project manager, in addition to the knowledge and skills he possesses, is also judged by his ability to positively motivate staff and the impact he has on employee behaviour. The motivational system created by the company and proposed to the employees is a tool that helps project managers to carry out the motivational function in their daily work.

There are a number of definitions of an incentive system in the literature. J. Penc (1998) calls an incentive system a purposefully created and binding system in an organization, constituting a set of various motivation tools, within which employees are influenced. In turn, J. Woźniak (2012, p. 21) argues that an incentive system is nothing more than "the ways of motivational influence on employees practiced in an organization, which are reflected in organizational procedures, and thus, as a rule, are open and universal, i.e. addressed to individuals, fulfilling certain formal conditions, rather than discretionary activities, carried out by specific individuals and addressed to individual units".

The universal task of the incentive system is to stimulate people to support the company's strategy and culture, to fulfill the mission and achieve the company's goals while taking into account the human resources capabilities and the needs and expectations of employees (Karaś, 2003). It is desirable for employees to undertake beneficial behaviour while avoiding behaviour that is unfavourable from the company's point of view. The tools that make up the incentive system are supposed to mobilize employees and increase their commitment to work, give personal satisfaction to employees and induce them to take entrepreneurial and creative actions (Sekuła, 2008). The proper selection of the tools that make up an incentive system requires great care, so the process of building such a system should be supported by management and people who know the expectations of employees well. In order for it to be as effective as possible, certain criteria should be applied in the process of implementing the incentive system (Grzybowski, 1993) such as individualization, comprehensiveness with regard to the various stimuli affecting the psychological and material spheres of the members of the organization, concreteness, scientificality with the key role of innovation and continuous improvement of methods of motivating employees, and systematicity with regard to the ongoing monitoring of employee performance.

Descriptions of incentive systems presented in the literature aim to identify the motivation factors that play a key role in the motivation process. G. Gruszczyńska-Malec (1999) distinguishes between tangible rewards, including monetary and non-monetary rewards, and intangible rewards. A. Stabryła (1997) points out that the motivational system supports decision-making, planning and control processes. The factors that A. Szałkowski (2000) distinguishes are the subsystem of economic (material) and non-economic incentives, social incentives, the management subsystem and the work valuation subsystem. A good and efficiently operating incentive system should include both material incentives, which satisfy material, subsistence and consumption needs, and non-material incentives related to self-realization, recognition (Kopertyńska, 2009). Consist of all groups of motivators and take into account all functions of pay: cost, income, incentive and social. Address employment, professional competence, remuneration and working time (Oleksyn, 2001). More recent ways of motivation should also be mentioned here, such as the cafeteria system, which means a menu pioneered in the US (Armstron, 2009), and the package system, which allows employees to choose from several sets of specific benefits (Beck-Krala, 2013). Activity-based working, or hot-desking, is the ideology of sharing workspaces between several people using them at different times. The system is adapted for organizations that focus on creativity and team efficiency. Another work-life balance system envisages the employee developing the best possible balance between work and private life (Armstron, 2014). Organizations that promote a work-life balance approach focus on strengthening the sense of stability among employees, thus becoming more competitive in the labour market and able to retain good employees for longer. Another such approach is provided by Hygge, a Scandinavian concept that stands for comfort, kindness, and unhurriedness, giving a sense of security, combining the slogans zero worries, zero stress, and zero problems (Viking, 2016).

Modern systems, concepts of motivation are extremely attractive in modern business management, since remuneration is no longer the only tool to help attract valuable employees to a company. This is linked to the fact that employees increasingly see their jobs not only as a source of germs, but also as a place where they want to develop and gain valuable contacts with people.

## 3. Data and method

The object of the study was one of the world's largest automation and industrial IT companies with a history of more than 120 years. It is currently ranked 472nd on the Fortune 500 list and has reported global sales of $7 billion in 2022. It has 28 office locations in the US, with its headquarters in Milwaukee, Wisconsin. Industrial facilities are located in Mequon, Richland Center, Ladysmith and Middleton. In Poland, it has three branches: in Warsaw, Gdansk and Katowice. The company is a leading international supplier of industrial power, control and information systems, dominating in drive technology and software solutions for industry. The company's range of services includes sales, technical consultancy, 24/7 technical support, project implementation and maintenance services, complex systems, basic and advanced training. The company has around 24,500 employees serving customers in more than 100 countries. The company uses a structure of international project teams whose main task is to develop and implement projects that enable the efficient and effective implementation of the company's goals and strategies. Due to the nature and scope of the projects, the composition of the teams can take the form of a variety of configurations and include positions of different functions. The most common form of project teams is the distributed team. It involves highly qualified specialists from different areas of the organization who work together on a project but are located in different offices, cities or countries. Teams are therefore characterized by great diversity, and cultural differences and time zone differences are also apparent.

The data was collected through a survey questionnaire comprising six metric questions to clarify the socio-demographic characteristics of the respondents and fifteen closed questions relating to the motivational system. The questions were constructed on the basis of the literature analysis carried out and referred to an assessment of the motivational system in place at the company under study, its impact on employee development, its effectiveness, as well as work motivation, the remuneration system, opportunities for promotion and qualification enhancement, the atmosphere in the organization, and motivational factors and demotivators. Among them, some contained a set of possible answers to choose from (from definitely yes to definitely no), questions with a precise yes or no answer, multiple-choice questions and those that required the respondent to rank the importance of incentive factors on a scale of 1 to 5.

The survey was conducted in May/June 2022. The questionnaire was conducted in two languages, Polish and English. Poles accounted for the largest percentage of respondents at 59.8%, followed by Americans at 34.6%, Chinese at 4.6% and Indians at 1%. The vast majority of respondents were male (76.6%). The predominant age range in terms of the entire group of respondents was 31-40 years, meaning 42.1%. The other ranges were 20-30 years - 33.6%, 41-50 years - 7.5% and over 50 years 16.8%. In Poland, the same age range of 31-40 years prevailed with 52.4%, while abroad; it was slightly higher as most respondents were over 50 years old (38.6%). The vast majority of respondents had tertiary education 67.3%, incomplete tertiary education (27.1%) and secondary education (5.6%). With regard to length of service, the largest group was between 5 and 10 years of employment - 25.2%.

In addition, the largest groups of respondents were employees in engineering positions (64.5%). These included project team members covering positions such as development engineer, industrialization, project quality engineer for new product implementation, project engineer, senior project engineer, mechanical engineer, test engineer, planner, operations coordinator, product certification engineer, product environmental compliance engineer, supplier quality engineer. Other employees included engineering manager positions with 15.9%, project manager with 6.5%, senior management with 2.8% and support positions with 10.3%.

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

The aim of the study was to identify and evaluate the incentive system in project management in the opinion of employees carried out in a selected international industrial automation manufacturing company. In addition, the study identified wage and non-wage methods of motivating project team members and assessed the motivation tools used in the company in terms of compliance with employee expectations. The impact of the incentive system on the development of employees was also analyzed and the importance of cultural differences in motivation methods was assessed. The results of the research are presented with a breakdown of the following topics: perceptions of the motivational system as perceived by employees, incentive factors and demotivators, employee development and the impact of cultural diversity on motivation.

**Employees' perceptions of the incentive system**

As indicated by the respondents, the effectiveness of the incentive system was rated as very high, high and adequate for 47.7% of the respondents. This means that a larger proportion of employees (52.3%) rated the system as poorly and moderately effective. More than half of the employees confirmed that the functioning incentive system was clearly

defined and well known to them (61.7%). To the general question: do you feel motivated to work? 79.4% of employees answered in the affirmative. Knowing how important a role the manager plays in the motivation process, the survey asked the employees to indicate whether their direct supervisor motivates their subordinates to work. The majority of employees (67.3%) answered in the affirmative, 14% of employees denied by saying that they do not feel such motivation from their manager and 18.7% of respondents could not specify. Employees who feel valued at work on a daily basis are positive about their work and their well-being translates into a good atmosphere throughout the organization. This influences their commitment, increases work efficiency and gives them a sense of satisfaction with their duties. 70.1% of respondents confirmed that they feel valued at work, 16.8% denied it and 13.1% of respondents could not deny or confirm it. An in-depth analysis of the data showed that, regardless of age, employees have similar feelings. Next, respondents were asked whether they were satisfied with the remuneration they receive and whether, in their opinion, the remuneration they receive is adequate for the work they do. 47.7% of the respondents confirmed that they are satisfied with their salary and in 42.1% it is adequate to their job. As many as 36.4% of employees are dissatisfied and 35.5% of them believe that the salary paid is not adequate for the work they do. On a general question about the atmosphere in the company, 42.1% of the employees rated it very good and 41.1% rated it good. Positive evaluations thus amounted to as much as 83.2%.

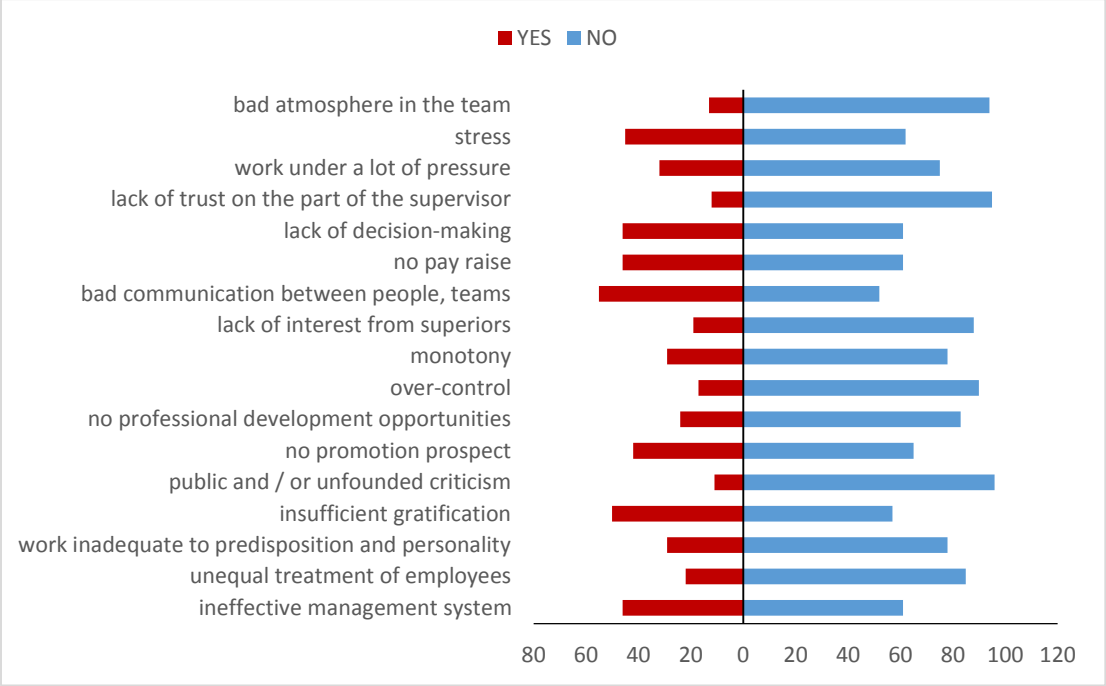
**Incentive factors and demotivators**

The analyses of the survey results also made it possible to develop a ranking of wage and non-wage methods of motivating project team members, which, in the opinion of employees, motivate them to work to the greatest extent. Among the wage motivation factors, the main ones were: increase in basic salary - 89.7%, regular bonus - 87.9%, discretionary bonus - 83.2%, recognition by award - 72.9% and paid overtime - 69.2% of the respondents. Non-¬wage motivation factors included: work-life balance - 89.7%, good atmosphere - 88.8%, flexible working hours - 87.9%, good work organization - 86.9%, or opportunity to learn and use one's skills at work - 86%.

The survey also asked about demotivators, factors that employees believe may demotivate their enthusiasm for work. Among those mentioned, the following were the main ones: lack of a pay rise - 90.7%, bad team atmosphere - 80.4%, ineffective management system - 77.6%, public and/or unfounded criticism - 72.9%, lack of promotion prospects and lack of decision-making - 71%. When asked: Which demotivating factors are present in your company? the most frequent responses referred to poor communication between individuals or departments - 51.4%, insufficient gratification - 46.7%, ineffective management system, lack of a pay raise and lack of decisiveness, which accounted equally for 43% of respondents' answers. However, it should be noted that only one of the items concerning poor

communication reached more than half of the votes. It can therefore be concluded that the majority of employees did not observe that the listed demotivating factors were present in their company (Table 1).

**Table 1.**
*Employees' opinion of demotivating factors in the company*




Source: own study.

**Employee development**

In terms of the development opportunities for employees in the surveyed company, when asked: What does it depend on to get a promotion in the company? most respondents answered that it depends on the degree of commitment - 22.7%. The second place went to the quality of the work performed - 19.9%, and the third place that it is the result of gaining the required qualifications - 15.2%.

Respondents were also asked whether the incentive system in place has a real impact on their professional development. Only 28% of respondents answered in the affirmative. The opposite view was held by as many as 43% of respondents, who answered that the functioning incentive system has no impact on their development, while 29% hesitated to indicate a clear answer. The majority of employees are also convinced that they have an average chance of being promoted within the next two years - 35.5%. Only 9.3% of respondents answered that their chances of being promoted within two years are high. As many as 36.4% of employees were in favour of a low as no chance of being promoted.

When employees were asked in which areas they would like to improve their qualifications, the largest group of employees tipped vocational training - 23.7%. Managerial training was second, followed by language courses in third place. The least interest was received by psychological courses - 5.8%, higher education - 7.2% and postgraduate studies - 7.7%.

**The impact of cultural diversity on motivation**

Multinational companies with employees around the world face the difficulty of tailoring motivational tools to the needs of their culturally diverse workforce, while keeping in mind their financial capabilities. Their effectiveness or ineffectiveness usually depends on the culture preferred in a particular country or community. The norm, therefore, is to have a wide range of motivational tools, most of which will not be fully needed or used equally effectively in every country.

Employees from Poland, the United States, China and India were surveyed. The results were divided into two main groups: Polish employees and foreign employees. Despite the cultural differences, the analysis of the results showed a slight divergence in the approach to the topic of motivation. Poles rated the effectiveness of the incentive system in place at an average of 39.7%, while 55.6% of respondents confirmed that the incentive system was rather familiar to them. Abroad, employees rated its effectiveness as adequate - 43.2%, but when asked whether the functioning incentive system was familiar to them, the majority of respondents answered that it was rather not - 36.4%. This is the first of the differences that will be observable in the further analysis of the answers given.

Both groups of respondents showed that they felt motivated to work, the Poles 76.2%, the foreign workers 84.1%. They equally agreed on the motivation initiated by the manager and the feeling of appreciation at work. 68.3% of Poles confirmed that their supervisor motivates them in their daily work and 73% of respondents said that they feel appreciated at work. The corresponding figure abroad was 65.9% for both the first and second issues.

The percentage of satisfied employees with the remuneration they received in Poland was 44.4%, and only 39.7% felt that the salary they had was adequate for their job. Abroad, the level of satisfaction was slightly higher, at 52.3%, and 45.5% of employees confirmed that their salary was in line with the prevailing labour market. These results confirm that a significant proportion of employees in the company surveyed, regardless of the site in which they are located, are dissatisfied with the salary they receive. This is an alarming result that should be analysed in more depth by the company's management.

When asked generally about the atmosphere in the organization, Polish employees answered that it was very good - 54% or good - 44.4%. This is a very high result, indicating a positive relationship between employees and management. Abroad, the most common responses were for the atmosphere to be good - 36.4% and average - 31.8%.

In the questions on development, both groups agreed that promotion is most often the result of high quality of work, degree of commitment and having the right qualifications. Further factors mentioned by Polish employees were long seniority - 14.1% and luck - 11.1%. Abroad, it was also luck - 12.1% and coincidence - 11.3%.

In line with the overall result of all respondents, both Poles, 41.3%, and foreign employees, 45.5%, confirm that the incentive system in place does not affect their development. In Poland, 36.5% of employees rated their chance of promotion in the next two years as moderately likely. Abroad, it was even less optimistic, with 34.4% of employees believing they had a low chance of being promoted.

As for the areas in which respondents would like to improve their qualifications, in Poland, vocational training came first with 28.9%, followed by language courses with 20% and management training and quality certificates, which equally covered 13.3% of the responses. Abroad, managerial training topped the list with 25%, followed by quality certificates with 16.7%, vocational training with 13.9% and higher education with 12.5%.

Surprisingly similar responses to questions on wage and non-wage motivation methods were obtained in both groups surveyed.

Salary motivation factors that were most significant for both Polish and foreign employees included a base salary increase, regular bonuses and discretionary bonuses. Non-wage factors included the opportunity to learn, the chance for promotion, flexible working hours, good organization and atmosphere at work, work-life balance, working with competent people and the feeling of creating something of value. Additional factors that, in the opinion of Polish employees, were of great importance to them in the motivation process were: self-fulfillment - 92.1%, the opportunity to work remotely - 87.3%, and a good reward system for additional achievements - 81%. Foreign employees, on the other hand, valued: a good relationship with their immediate supervisor and the opportunity to use their skills at work - both amounted to 93.2%, as well as decent conditions and a high standard of work, including the office and its facilities - 84.1%. Both groups unanimously decided that the least important slogans for them were: "we are one", "rush fast", "innovate", "behave like an owner", team competition, periodic appraisals, prestige, business trips, relaxation areas in the office and well-being events organized for them by their employer. Polish employees also did not care about social recognition that is related to their profession - 44.4%, coaching and mentoring programmes - 42.9% and funding for higher education - 33.3%. Foreign employees mentioned foreign language learning - 65.9%, privileges such as a company car or mobile phone - 45.5% and benefits of a social nature - 38.6%.

When identifying the sources of motivation for the selected functions of project team members, the differences that could be observed were less interest in a pay rise among engineers working abroad. In Poland, this was one of the main factors influencing their motivation with 91.3%, regular bonus was 87.5% and discretionary bonus 86.3%. For engineers and support staff who do not work in Poland, interest in increasing basic pay

was 83.9%, receiving a regular bonus was 77.4% and a discretionary bonus 74.2%. In Poland, flexible working hours were also important for engineers - 93.9%, self-fulfillment - 91.8% and the possibility to work remotely - 89.8%. In contrast, abroad, the opportunity to use one's skills at work, a good atmosphere and comfort at work, where employees have access to modern technology, all topped the list with 93.5% of the votes cast. Engineering managers both in Poland and abroad are motivated by the same factors, i.e. good relations with their immediate superior, a good atmosphere and the opportunity for development. In Poland, privileges such as a company car or a mobile phone were additionally important - 100%. Project managers working in Poland, apart from the similarities they showed to foreign employees, additionally appreciated recognition and respect, the feeling of creating something valuable and the attractiveness of the work content - 100% of respondents. Abroad it was the location of the company - 100%, public recognition for a job well done and job security - 80%.

Factors having a demotivating effect on project team members were also unanimous, with both groups indicating lack of pay rise, ineffective management system, poor team atmosphere and public and/or unfounded criticism. Poles also highlighted insufficient gratification with 76.2% and lack of professional development opportunities with 71.4%. Foreign employees voted for a lack of promotion prospects and a lack of decision-making, with 75% each. Least important for local employees were stress - 19%, lack of interest from superiors and working under high pressure - both scored 27%. Abroad, it was also lack of interest from the supervisor and a job inadequate for the employee's aptitude and personality - both amounted to 18.2% of the votes cast.

When asked about the demotivators present in their company, Poles indicated insufficient gratification - 57.1%, lack of a pay rise - 55.6% and poor communication in teams - 50.8%. Foreign employees confirmed the occurrence of demotivators in the form of stress - 61.4%, working under high pressure and lack of decision-making - both amounted to 50%.

## 5. Discussion and conclusions

The survey confirmed that the company surveyed is highly professional, provides decent working conditions for its employees and has an extensive incentive system offering a wide range of wage and non-wage incentive factors. Analysis of the data made it possible to assess the effectiveness of the incentive system in place and to identify the range of tools that managers of this company can use to motivate project team members in their daily work. The results showed that employees are aware of the principles of the incentive system in place, but rate it as poorly or moderately effective. The main factor that contributed to this judgement is the basic salary. A significant proportion of project team members, regardless of

their location, are dissatisfied with the level of remuneration they receive and feel that the salary paid is inadequate for the work they do. Although satisfaction levels have been found to be higher among foreign employees, the difference is insignificant, hence top management should pay special attention to this aspect. An increase in basic salary, a regular bonus, a discretionary bonus and recognition through an award were in most cases the most desirable elements of a functioning incentive system for employees. The principles on which the above-mentioned salary motivation factors are currently granted to employees should therefore be thoroughly analyzed so that the company can then take the appropriate steps to match employees' expectations with real opportunities. An attempt by managers to address the needs of the individual on a case-by-case basis and an increase in basic pay seems to be the only appropriate solution to the identified problem, which has such a large impact on the sense of dissatisfaction among employees. Although paying higher salaries represents an additional cost for the employer, it is certainly worth considering the possibilities of undertaking such changes, otherwise the incentive system in place will never fulfill the expected role.

Another factor contributing to the low assessment of the effectiveness of the incentive system in place is the general perception among employees that it has no impact on their career development. Only a small percentage of employees see opportunities for promotion within the next two years. This is a surprising response, given that the company has the right tools to plan the career path of its employees. The global employee referral system, annual appraisals and the PADR (Performance & Development Review) process, in which managers together with employees outline business objectives and employee development goals, enable both to provide their vision of the future for the next year or several years. The questions that should therefore be asked are as follows: are the promises made by managers kept, are employees insufficiently prepared for the PADR process, is their performance and annual result not satisfactory to top management, or perhaps the range of opportunities presented to employees is too limited and still does not meet their true expectations? In order to find answers to these nagging questions, it will once again be necessary to take an individualized approach towards the employees and the desire to understand their true needs by their direct superiors, who are the most likely to know what their employees expect. In addition, a department supporting the PADR process could introduce an auxiliary indicator to record the percentage of satisfaction of annual interviews and the development plan outlined by managers.

In the overall ranking, wage incentive factors ranked similarly to non-wage incentive factors, the presence of which has an equally strong impact on the commitment of employees in the surveyed company. Non-wage incentive elements such as work-life balance, a good working atmosphere, flexible working hours, the prospect of remote working, good work organization, the opportunity to learn, to use one's skills at work, good relations with one's immediate superior and the feeling of creating something of value were of particular importance to the respondents. The organizational culture and the numerous non-salary forms

of motivation offered by the company to its employees led to a positive opinion among the members of the project teams, for example in terms of their assessment of the atmosphere in the organization. The vast majority of employees rated the atmosphere in the company as very good. This demonstrates good relations between employees and between employees and their managers. In the survey, employees also confirmed that they feel motivated to work and feel a sense of appreciation. A large percentage of employees also acknowledged that their immediate manager plays an important role in their motivation process. This means that managers use the motivational tools the company offers them to increase their employees' commitment.

Despite the increasing awareness of demotivating factors, some irregularities can also be observed, which reduce the level of employee motivation and consequently affect work efficiency. In addition to the level of remuneration being inadequate from the employees' point of view, there was also the issue of poor communication between individuals or departments, the existence of an ineffective management system, lack of pay rise and lack of decision-making. As seniority increased, it was also possible to observe an increase in employees' sense of general dissatisfaction. These demotivators did not cover a significant number of the respondents' votes, which means that not all employees unanimously agree with these perceptions. Nonetheless, they represent a source of potential dissatisfaction and should therefore be analyzed to give rise to corrective measures that the company could implement in its organization.

In summary, in the company surveyed, both wage and non-wage components of the incentive system appeared to influence employee motivation. The research confirmed that the company has an extensive range of non-wage incentive factors, their list is considerable, nevertheless it should not overshadow the most important one. Employee dissatisfaction with the level of remuneration received cannot be fully addressed by other motivators. Employees should feel satisfaction both financially and non-financially, otherwise it will be impossible to maintain a satisfactory level of employee motivation. The organization’s goals and projects can only be achieved if the company's activities are based on a well-functioning incentive system. The system, in turn, should constantly evolve, and managers, based on their knowledge of the needs of a given project team, as well as of the individual members of that team, should adjust the selection of motivation solutions to meet the individual needs of the employees. The aim of all these measures is to make the employee feel motivated to work, so that he or she is more willing to perform the tasks entrusted to him or her, his or her work becomes more effective and the employee opens up to new challenges.

Modern companies often use motivational tools that are outdated or mismatched to the needs of employees. The result is an increase in employee dissatisfaction, which has a detrimental effect on relationships and team atmosphere. To avoid this, it is important to have a thorough understanding of employees' value systems and the current situation in the country that affects the labour market. All this will allow the employer to make the right

choice of motivation tools, while at the same time matching the specific work of the organization to the individual, ambitions and needs of the employees. The key, then, is not to build an incentive system with an endless list of motivational tools, as a large proportion of the items on this list, as the survey showed, may not be of any relevance to employees. It makes sense to focus on real needs such as a salary that matches the position and the employee's expectations and to focus a further range of motivational instruments around these. In addition to salary motivation factors, which usually play the biggest role in the employee motivation process in project management, it is also worth emphasizing the importance of non-wage incentive factors. A friendly working environment, friendly colleagues, a sense of recognition and mutual respect, good contact with superiors and a work-life balance play a very important role in maintaining a constant level of employee commitment.

Factors such as being able to use and develop one's own skills, gaining new experiences and self-fulfillment are also crucial in achieving job satisfaction. Without these, everyday work would just be an unpleasant necessity. They help to build a bond between the employee and the company, develop a sense of belonging to the organization and increase the satisfaction and enjoyment of those employed. The focus should therefore not be solely on financial or non-financial aspects. Both are an important part of a motivational system and should therefore complement each other, be strongly interconnected and alternated by the employer. An incentive system structured in this way will bring the most benefits to both parties.

It is also worth mentioning that, once properly designed, an incentive system will not remain effective forever. Given the constant changes in the needs of employees, which may be the result of various factors, such as changes in marital status, family enlargement, ageing, the creators of incentive systems must ensure that it is flexible and open to change. The aim should be to ensure that the process of motivating employees runs smoothly and contributes to the proper achievement of the organisation's tasks and objectives. Only such an approach will ensure that effective employee engagement is sustained over the long term.

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# HUMANITARIAN SUPPLY CHAIN – A BIBLIOMETRIC ANALYSIS AND SCIENTIFIC LANDSCAPE

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**Introduction/background**: This paper identifies the level of interest in the issues of humanitarian supply chains, as well as in which disciplines and journals the research results on this subject are published. The study results show the development of research issues on humanitarian supply chains and research areas by authors and keywords.
**Aim of the paper**: This paper aims to identify current and emerging research on humanitarian supply chains.
**Materials and methods**: This goal was achieved by conducting a bibliometric analysis.
**Results and conclusions**: As a result, it was established that the research issues of humanitarian supply chains developed on the basis of humanitarian logistics and nowadays are of high interest among researchers and practitioners. Scientific landscape analysis points to the key research areas on the humanitarian supply chain and the need to intensify research on resilience, sustainability, digital technologies, and the performance of humanitarian supply chains.

**Keywords:** humanitarian supply chain, disasters, emergency management, relationships.

## 1. Introduction

Humanitarian needs have been accelerating over the past two decades (Pusterla, Pusterla, 2021). In 2022, 274 million people needed humanitarian assistance and protection. This number represents a significant increase from 235 million people a year ago, which was already the highest figure in decades (Global Humanitarian Overview, 2022). The United Nations and partner organizations are aiming to help 183 million of the neediest in 63 countries, which will take USD 41 billion (Global Humanitarian Overview, 2022). Given the growing population, even more people will need humanitarian assistance. The latest United Nations projections suggest that the global population could grow to about 8,5 billion in 2030, 9,7 billion in 2050, and 10,4 billion in 2100 (United Nations Department of Economic and Social Affairs, 2022).

Many non-governmental organizations involved in humanitarian operations, practitioners and researchers point out that logistics and humanitarian supply chain management are at the core of all humanitarian operations (Lupicka, 2011; Van Wassenhove, 2006). The humanitarian supply chain includes assessment, procurement, warehousing and transportation, the rapid movement of people and materials, and its main purpose is to save human life and health (Ghorbani, Ramezanian, 2020).

International research concerning organizing humanitarian supply chains is primarily concerned with their characteristics (Paciarotti et al., 2021; Behl, Dutta, 2018; Jahre, 2017; Abidi et al., 2014; Kamau, 2013; John et al., 2012; ), largely in the context of their improvement and optimization of operations in them (Polater, 2020; Ghorbani, Ramezanian, 2020; Agostinho, 2013; Stamm, Villarreal, 2009; Thomas, Kopczak, 2005; Gizicki, 2020; Szromek, Polok, 2022), as well as the problems and challenges they generate (Negi, 2022; Ozdemir et al., 2021; Bag et al., 2020; Dubey et al., 2018; Fiorini et al., 2021; Chen, 2021; Nodoust et al., 2021; Agarwal et al., 2020, Cankaya et al., 2019; Petrudi et al., 2020; Kabra, Ramesh, 2015).

Up till now, there have been no attempts to develop effective mechanisms for integrating logistics operations in humanitarian supply chains (Dubey, 2022; Marcinkowski, 2018). Although research on humanitarian supply chains focuses on the development of basic models or frameworks that, despite defining the main structures, are usually not refined and do not yet take into account practical implications (Shafiq, Soratana, 2019). According to Dubey (2022), the model for managing a humanitarian supply chain is still insufficiently understood. This shows that the study of humanitarian supply chains is still a relatively new and developing field of study (Shafiq, Soratana, 2019). Therefore, this article attempts to answer the following research questions:

RQ1: How has the development of scientific research at HSC been going so far?

RQ2: What key research areas can be identified in the field of HSC?

RQ3: Where is future HSC research going?

The answers to the above research questions are developed based on a bibliometric analysis of scientific publications on HSC.

The theoretical part of this article presents the foundations of HSC and the rationale for conducting the research. The methodological part explains why research approaches based on bibliographic analysis were adopted and how the research was carried out. The research results were divided into three parts: general analysis of scientific research on HSC, identification of research areas, and analysis of the research development on HSC. The paper ends with a discussion and conclusions.

## 2. Literature review

In the case of humanitarian supply chains, often referred to as "supply chains for life", researchers primarily emphasize the specific and difficult conditions under which these chains are organized (Lupicka, 2011). Therefore, as Van Wassenhove (2006) states, an effective humanitarian supply chain must be able to respond as quickly as possible to multiple interventions, even though it always faces a high level of uncertainty.

As defined by Thomas and Kopczak (2005), a humanitarian supply chain is the process of planning, implementing and controlling the flow of goods and services in an efficient and cost-effective manner, warehousing as well as the efficient flow of information from point of origin to point of consumption according to the needs of affected people. Providing consistent and effective humanitarian assistance is aided by the systematic application of instruments, i.e.: strategic planning, data collection and information management, mobilizing resources and ensuring accountability, and also coordinating the functional division of labor in the field, political negotiation and providing leadership (John, Ramesh, Sridharan, 2012; Sienkiewicz-Małyjurek, 2011).

The humanitarian supply chain meets the immediate needs of the affected population, such as medical assistance, transportation services, evacuation services, water, food and medicine supplies. It also reduces damage thanks to an effective response leading to emergency control. The World Economic Forum estimates that in the coming decades, epidemics alone will cause an average annual economic loss of 0,7% of global GDP, equal to the global economic loss caused by climate change (WEF, 2019 [in]: Kovacs, Sigala, 2022).

The growing number and cost of humanitarian crises draw attention to the need to develop well-functioning humanitarian supply chains by, among other things, applying state-of-the-art business methods (Polater, 2021). From the perspective of dynamic capabilities, it can be said that the mere possession of resources is insufficient, it is also necessary to skillfully develop these resources, create new combinations of them, as well as properly use capabilities and competencies (Matwiejczuk, 2019).

The primary difference between a humanitarian and commercial supply chain is the purpose of its configuration. A commercial supply chain is formulated for business reasons, while a humanitarian supply chain is established because it is designed to provide assistance to those affected by emergencies. There are also differences in the entities that implement the activities. Commercial supply chains are shaped by the relationships taking place in the structure of suppliers, manufacturers, distribution centers, wholesalers, retailers, customers. Humanitarian supply chains are coordinated by the public sector, mainly at the local government level in cooperation with intervention and rescue units, national and international NGOs and in extreme cases supported by the military. In addition, humanitarian supply chains are configured without

much of the necessary information. The communication and distribution process is also hindered and demand is unpredictable in most cases.

Humanitarian supply chains are built by multiple, independent entities operating in a dynamic and complex environment. Complex connections, dependencies and flows take shape between the actors, which are difficult to capture into a structure because their variability and uniqueness make this impossible. The authors attempt to illustrate the construction of humanitarian supply chains by adopting different criteria. Figure 1 shows a general model of HSC in process terms developed by Thomas (2003).

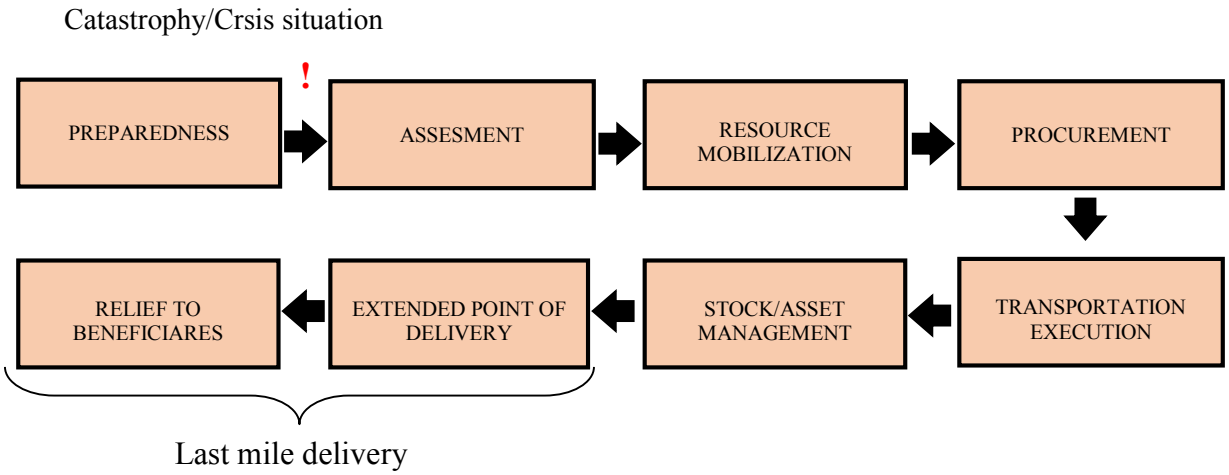



**Figure 1.** Model of humanitarian supply chain by Thomas (2003) - process approach. Adapted from: J.H. Bookbinder. Copyright 2013 by Springer, p. 451.

Starting with the procurement phase, goods and services are delivered through international or local suppliers. Next in the process is the local distribution of goods to those affected, i.e., last-mile delivery. According to Marcinkowski (2018), none of the attempts to define humanitarian supply chains and create models, or systematize activities, presents a holistic view. Research on HSC is dispersed, conducted by different authors in different approaches, and less frequent than research on humanitarian logistics (HL), which deals with operational aspects, although HSC is broader than HL. The scarcity of research on HSC in relation to research on HL (the number of publications on HL in Scopus is 1130 and on HSC only 444) and the dispersion of scientific achievements in this field make it necessary to carry out analyzes that combine the existing scientific achievements in the field of HSC.

## 3. Metodology

A bibliometric analysis of scientific publications on the humanitarian supply chain was used in this article to answer established research questions. This analysis was based on Scopus, as it is one of the most reliable scientific databases (Mongeon, Paul-Hus, 2016; Baas et al., 2020). Scopus is a curated, high-quality bibliometric data source for academic research in quantitative science studies. The research process used in this article is presented in Table 1.

**Table 1.**
*Research process*

| RESEARCH STAGE | AIM |
|---|---|
| 1. Critical literature review | Identifying research questions |
| 2. Searching for scientific publications on humanitarian supply chains based on the Scopus database | Collecting the data |
| 3. A bibliometric analysis of the data | Answering the research questions |

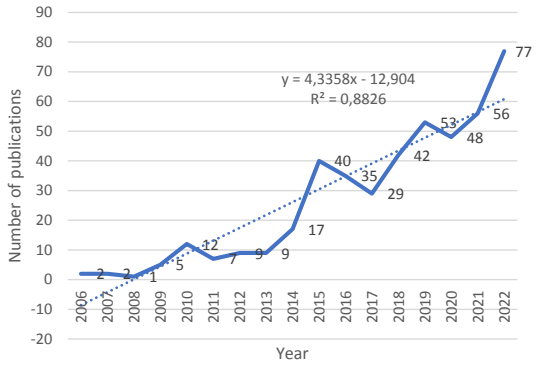
Source: own elaboration.

The research questions in this article are based on a critical literature review. In the second stage, a search for "humanitarian supply chain" in the Scopus database was performed without any limitations in the first half of January 2023. Titles, abstracts, and keywords were searched. In total, 444 records were identified. The analysis of the results was carried out using VOSviewer and Bibliometrix.

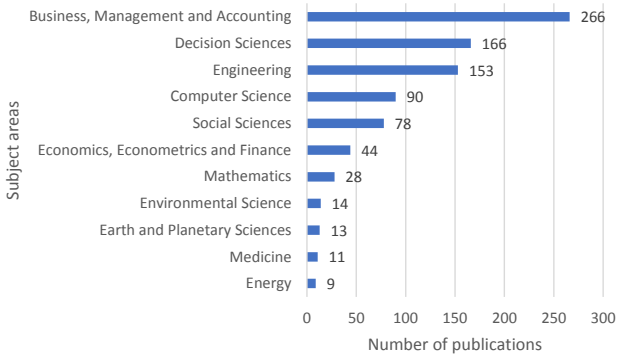
## 4. Results

### 4.1. Bibliometric analysis of scientific research on humanitarian supply chains

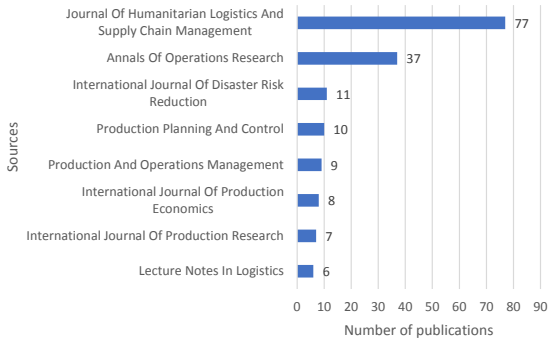
The analysis of the obtained results began with a bibliometric analysis aimed at determining the level of interest in the issues of humanitarian supply chains, as well as in which disciplines and journals the research results on this subject are published. The obtained results are illustrated in Figure 2.



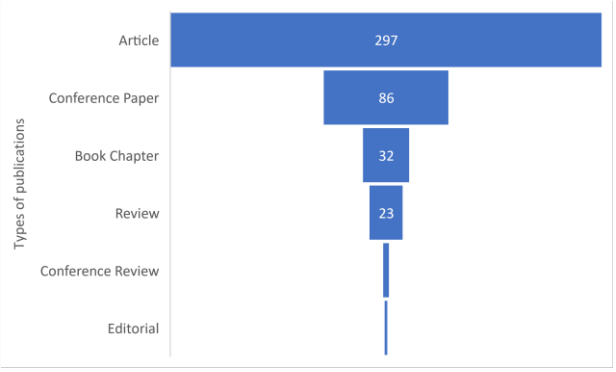

a) Number of publications per year




b) Publications' subject areas




c) Journals publishing on HSC




d) Types of papers

**Figure 2.** Bibliometric analysis of HSC research.

The results of the bibliometric analysis indicate that the issue of humanitarian supply chains is of increasing interest - the value of "a" on the trend line is 4.33 (Fig. 2a). The R-square factor also indicates a good fit of the trend line to the data. It is also worth noting that research on humanitarian supply chains has been undertaken only since 2006. These chains are most often studied in such subject areas as: business, management and accounting; decision sciences; engineering; computer science; and social sciences (Fig. 2b). In turn, the journals that most often publish research results on this subject are: "Journal of Humanitarian Logistics and Supply Chain Management" and "Annals of Operations Research" (Fig. 2c). These publications usually take the form of articles or conference papers (Fig. 2d).

The development of research on the issues of humanitarian supply chains is also illustrated in Figure 3.

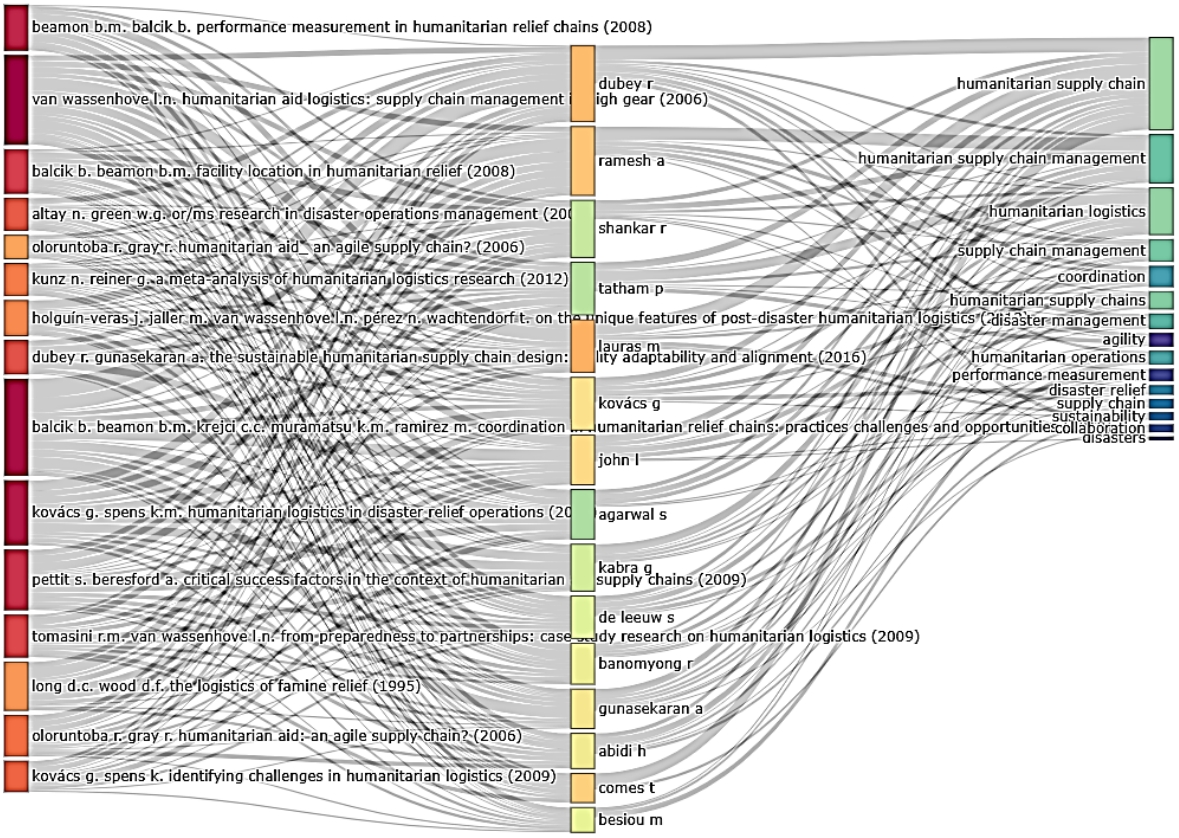



**Figure 3.** Relationships between key references, authors, and keywords.

According to the data presented in Figure 3 (left side), the development of research issues on humanitarian supply chains was influenced to the greatest extent by such publications as „Humanitarian aid logistics: supply chain management in high gear" of L.N. Van Wassenhove from 2006, „Coordination in humanitarian relief chains: Practices, challenges and opportunities" of Burcu Balcik from 2010, "Humanitarian logistics in disaster relief operations" of Gyöngyi Kovács and Karen M. Spens from 2007, "Critical success factors in the context of humanitarian aid supply chains" of Stephen Pettit and Anthony Beresford from 2009, and "Humanitarian aid: an agile supply chain?" by Richard Oloruntoba, Richard Gray from 2006. The authors in these publications focused mainly on emergency relief operations, humanitarian logistics, the functioning of aid agencies, coordination, and cooperation. Research on this subject has been continued and developed into the issue of humanitarian supply chains mainly by authors such as Rameshwar Dubey, A Ramesh, Ravi Shankar, Peter Tatham, Matthieu Lauras, and Gyöngyi Kovács (middle of Figure 3). On the other hand, the right side of Figure 3 indicates that nowadays, the scope of research on humanitarian supply chains contain also managing these chains, coordination, agility, sustainability, performance measurement, etc.

### 4.2. Identification of research areas on HSC

Identification of research areas on humanitarian supply chains was based on network visualization of the relationships between authors (Figure 4) and keywords (Figure 5).

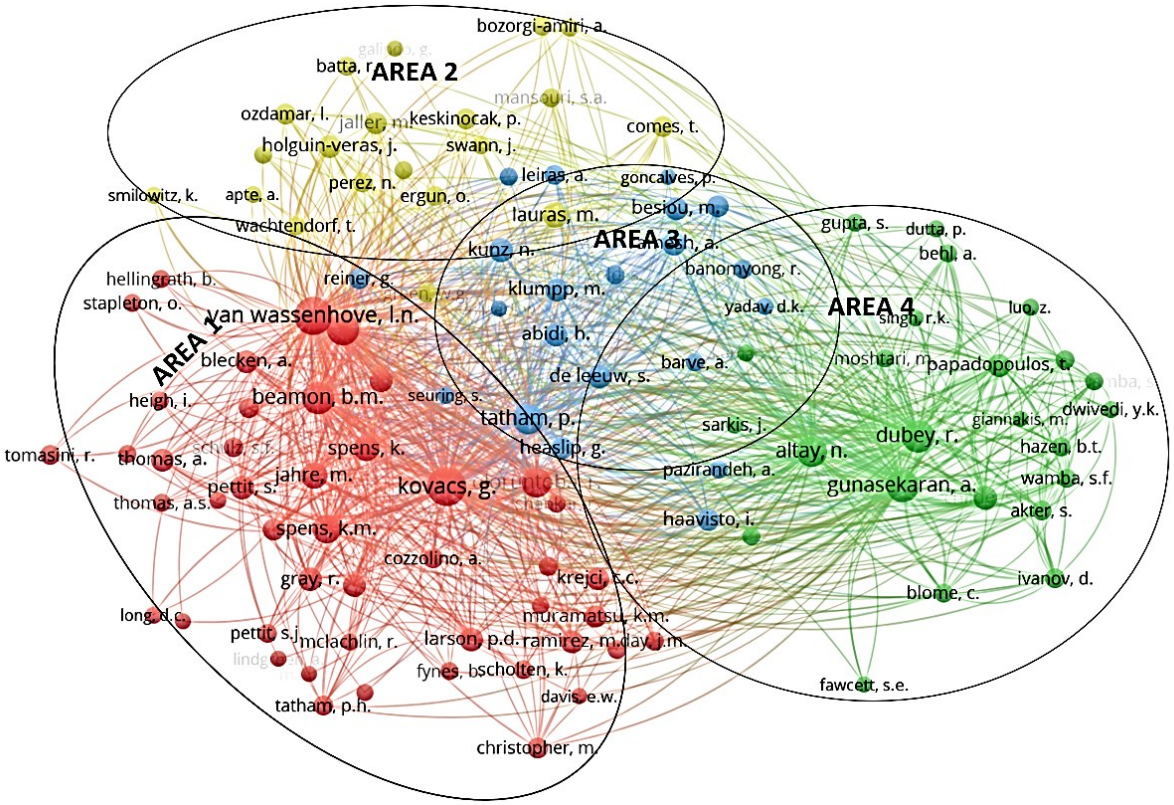



**Figure 4.** Research areas represented by the authors.

Figure 4 identifies four research areas represented by the authors. The first one (area 1) refers to humanitarian logistics, including the functioning of humanitarian organizations and their operations. The main representatives of these studies are L.N. Van Wassenhove, Gyöngyi Kovács, Karen M. Spens, Richard Gray, and Benita M. Beamon. Area 2 covers research on the characteristics of humanitarian supply chains, such as agility, resilience, collaborativeness, and sustainability. Representatives of research on this topic include Özlem Ergun, Julie Swann, Pinar Keskinocak, and Matthieu Lauras. Area 3, in turn, concerns research on humanitarian supply chain performance, represented by, among others, Matthias Klumpp, Peter Tatham, Hella Abidi, and Sander de Leeuw. The last, area 4, covers using digital technologies to achieve such humanitarian characteristics of supply chains as flexibility, resilience, and agility. Research on this topic is being conducted by Angappa Gunasekaran, Rameshwar Dubey, and Nezih Altay, among others.

Network visualization of research areas by keywords is presented in Figure 5.

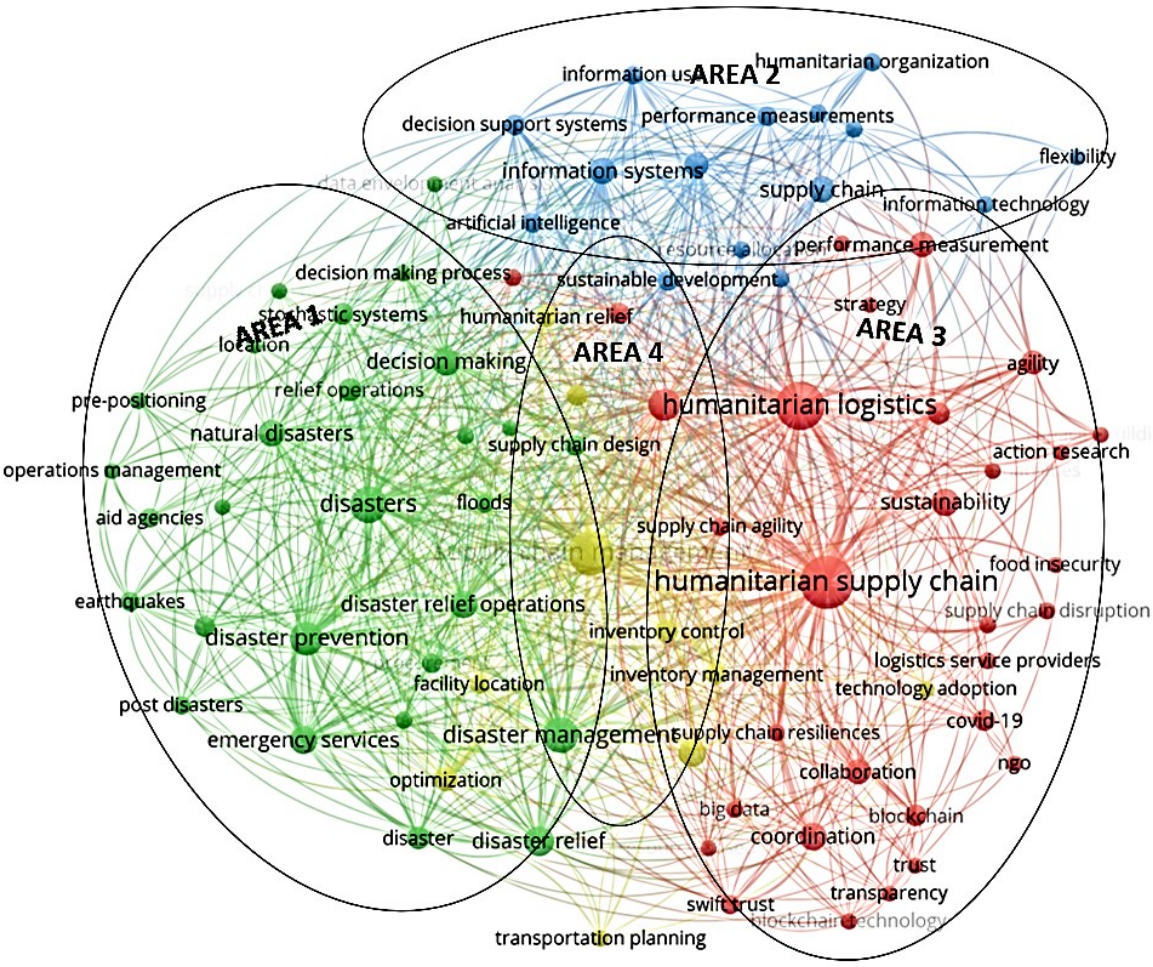



**Figure 5.** Research areas by keywords.

The analysis of the results presented in Figure 5 allows us to identify also four research areas. Area 1 relates to disaster management and activities related to disaster prevention, management, and recovery. In turn, area 2 covers research on using information technology in humanitarian organizations to conduct operations. Area 3 combines research on relationships in humanitarian supply chains, such as collaboration, coordination, and trust, with characteristics of these chains, including sustainability, resilience, and agility. This area also lists blockchain and big data technologies that enable building relationships in humanitarian supply chains. In the center is area 4 covering research on logistics processes in the humanitarian supply chain, like inventory and transportation.

### 4.3. Analysis of the research development on HSC

The development of humanitarian supply chain research issues presented in Figure 6 shows that before 2016, researchers focused mainly on general supply chain management, disasters, earthquakes, operations management, pre-positioning, resource allocation, data support systems, information systems, performance measurements etc. Between 2016 and 2018, research was conducted primarily in the field of humanitarian logistics, humanitarian organization, flexibility, optimization, collaboration, humanitarian relief, coordination, etc.

The period between 2019 and 2020 was full of research on sustainable development, supply networks, decision-making, logistics service providers, artificial intelligence, emergency services, and disaster management. In recent years, after the outbreak of the Covid-19 pandemic, there has been a development of research issues in the field of humanitarian supply chains, and researchers focus primarily on supply chain disruption and resilience, transparency, post disasters activities, information use, the role of NGOs, transportation planning, and blockchain technology.

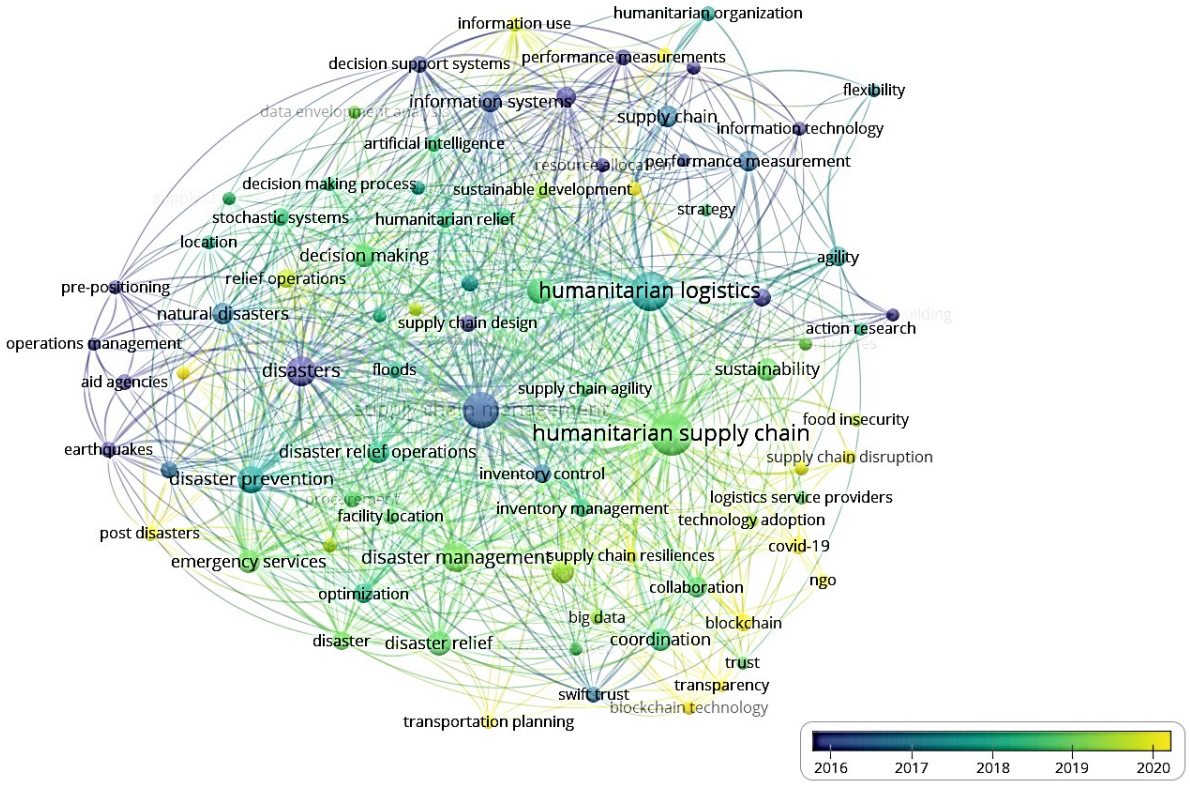



**Figure 6.** Development of scientific research over time.

The results in Figure 6 suggest that recent research directions in humane supply chains include digital technologies in humanitarian supply chains (Bag, Gupta, Wood, 2022, Dubey et al., 2022, Kumar, Singh, 2022, Marić, Galera-Zarco, Opazo-Basáez, 2022), resilience (Stewart, Ivanov, 2022, Novoszel et al., 2022, Dubey et al., 2022, Falagara Sigala, Maghsoudi, 2022), and sustainable humanitarian supply chain management (Larson, 2021; Karl, Scholz Karl, 2022; Khan et al., 2022, Abbas et al., 2022). These results are also confirmed by the analysis of the thematic map of humanitarian supply chain research areas (Figure 7).

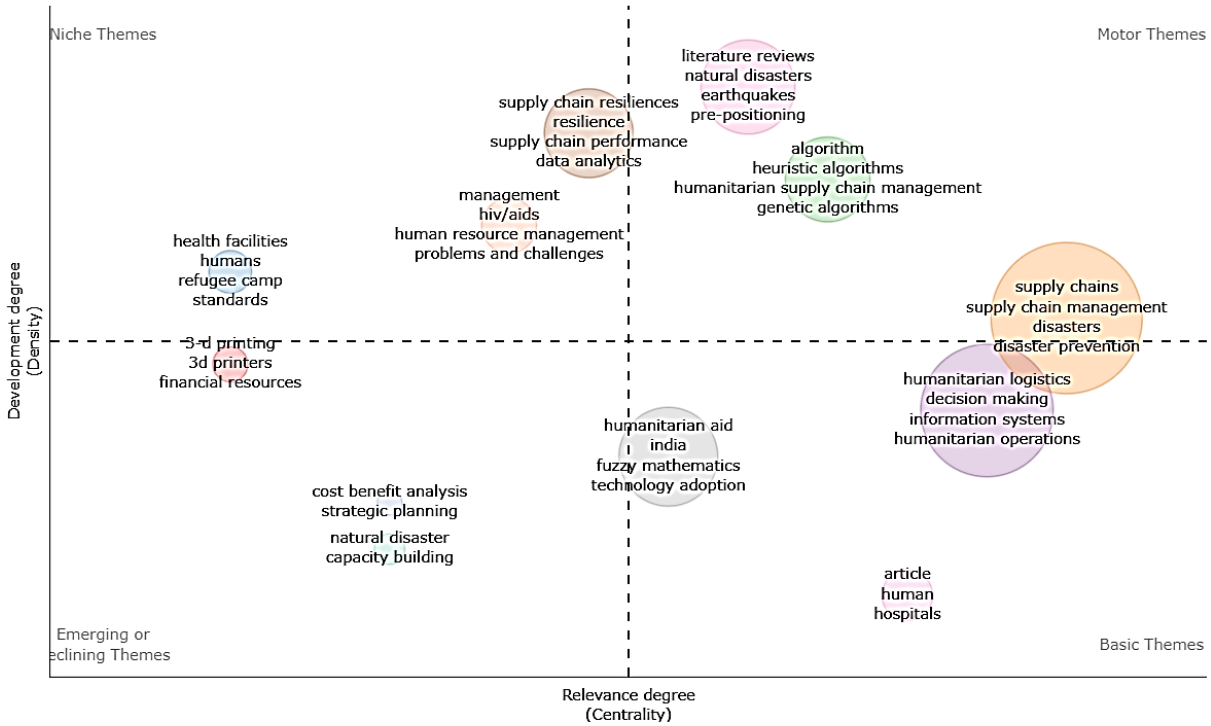



**Figure 7.** Thematic map of research areas on HSC.

According to the results presented in Figure 7, the basic themes for humanitarian supply chains are humanitarian aid, humanitarian logistics, humanitarian operations, and technology adoption. The issues of humanitarian aid, combined with the general theory of supply chain management, are currently shaping the motor themes on humanitarian supply chains. However, there is a need to develop research in the field of resilience, performance, data analytics, health facilities, refugee camps, human resource management, and problems and challenges in humanitarian supply chains.

## 5. Discussion and conclusions

The conducted analyses indicate that humanitarian supply chain issues are becoming increasingly popular among researchers and practitioners of humanitarian supply chains. Research on this topic began with operational tasks to find and implement the best logistics solutions during disasters. The evolution of research on humanitarian supply chains has grounded and expanded the scope of research in this area. The analyzes presented in this article identify key research areas on humanitarian supply chains, including:

- Operations in humanitarian supply chains.
- Characteristics of these chains, such as agility, adaptability, complexity.
- Development of inter-organizational relationships, such as cooperation, coordination, and collaboration.
- Use of digital technologies and information systems; and
- Humanitarian supply chains performance.

Humanitarian aid is made possible by money provided by donors, humanitarian organizations and governments. However, the real distribution of aid is possible through logistics and humanitarian supply chains. UNICEF, relevant U.S. Agencies and humanitarian organizations have formed a humanitarian logistics alliance to improve speed and response to future pandemics and emergencies (UNICEF, 2022). According to UNICEF (2022), in 2022, 30 suppliers made 1,686 shipments to 112 countries for a total value of more than USD 3,2 billion. Currently, a major problem has emerged in fuel prices, which remain high, affecting overall transportation costs. For airlines, the increase in the price of jet fuel is a major challenge, as this cost typically accounts for 20% to 25% of total operating costs (UNICEF, 2022). The price of jet fuel increased by more than 70% in the first 6 months of 2022, marking one of the steepest increases since at least 2002 (UNICEF, 2022).

With the rising costs of transportation, as well as the rising need for delivering humanitarian aid, attempts are required to develop tools to effectively carry aid to those in need. The activities undertaken in humanitarian supply chains are dynamic, and the organizations forming them must be flexible to efficiently deliver aid and protection within days or even hours. Non-governmental organizations, intervention and rescue services, and relevant public sector entities work in a chaotic environment: haste, uncertainty, and numerous resource shortages (Charles et al., 2010 [in]: Obrecht, Bourne, 2018). Activities are conducted spontaneously, lacking procedures and clear lines of responsibility, as well as a manager who unifies the entire operation (Marciniak, 2020). Thomas and Kopczak (2005) and Hovhanessian (2012) conclude that major challenges can also be caused by a lack of ability to recognize the importance and effects of logistics, shortage or lack of personnel, inadequate use of technology, lack of institutional learning and cooperation.

Therefore, the attention of researchers, practitioners and the public sector should focus on learning about the determinants of organizing humanitarian supply chains, their attributes and the challenges they present. The bibliometric analysis shows that research studies on HSC concern many areas. The majority of research studies are in following areas: humanitarian logistics, decision making, information systems, humanitarian operations, supply chains, supply chain management and disaster prevention. At the same time, these are issues that started the scientific discourse and were the beginning of more research on humanitarian supply chains. Popular, but also of greater current relevance, are studies such as: literature reviews, natural disasters, pre-positioning, heuristic and genetic algorithms and humanitarian supply chain management. The most actual research refer to: supply chain resilience, supply chain

performance, data analytics, humanitarian aid, fuzzy mathematics and technology adoption. Currently, there are also scientific studies on problems and challenges in HSC, human resource management, hiv/AIDS but the number of publications is small. The niche themes but simultaneously with the most density of publications are: 3d printing, 3d printers, financial resources, health facilities, refugee camp and standards.

In summary, research on HSCs should focus on strengthening the effectiveness of their operations. The goal of HSCs is to save lives and the health of people, limit financial losses and reduce damage to critical infrastructure. Given the casualties of emergencies and the enormous costs the public sector incurs in emergency intervention, response and reconstruction, it is essential to conduct research that results in solutions that increase the quality and speed of humanitarian aid distributed.

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# STRATEGIC INITIATIVES IN BALANCED SCORECARD

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**Introduction/background**: The Balanced Scorecard (BSC) uses strategic initiatives as the primary means of implementing the strategy and achieving the strategic objectives. Although initiatives are crucial to implementing the strategy, the academic literature on them is scarce. Most BSC publications deal with strategic goals, metrics and indicators (including KPIs - key performance indicators). There is variety of methods to identify and evaluate strategic initiatives depending on the type of organisation, its size and other situational features.
**Aim of the paper**: The aim of the paper is to present the essence and a role of strategic initiatives in implementing organisation strategy. Moreover, different practical approaches are presented and discussed on the basis of the selected cases. Based on the cases described, a general typology of strategic initiatives was proposed.
**Materials and methods**: In the paper, the critical literature review is used to determine the theoretical understanding of strategic initiatives supporting strategic management process using BSC. Case studies of four selected organisations are used to present the practical aspects of strategic initiative.
**Results and conclusions**: As a result, the paper shows the links between BSC strategic initiatives and project management. Different types of strategic initiatives and three levels of strategic initiatives in organisations were identified and discussed. The proposed typology allows us to reflect on strategic initiatives from a broader perspective.

**Keywords:** project management, Balanced Scorecard, strategy implementation, strategic initiatives.

## 1. Introduction - the role of initiatives in balanced scorecard

The Balanced Scorecard (BSC) is a comprehensive method of strategic management now 30 years old (Tawse, Tabesh, 2022), which is an opportunity to summarise and evaluate the effects of this method. It is a fact that academic interest in BSC topics has declined in recent years - the highest number of academic publications on the topic was in 2015 (see fig. 1). A. Tawse and P. Tabesh state, citing research by Bain&Company (Rigby, Bilodeau, 2018), that the largest number of companies used BSCs in 2008 (53% of companies worldwide) and that the current trend of using the method is declining. However, the impact of the BSC on

contemporary strategic management is difficult to overestimate. For many years we have been trying to measure the intangible elements of an organisation (organisational culture, knowledge management system, employee qualifications) and how tangible value is created from them. This area of corporate value management has not changed and certainly will not change in the future (Gierszewska, 2019).

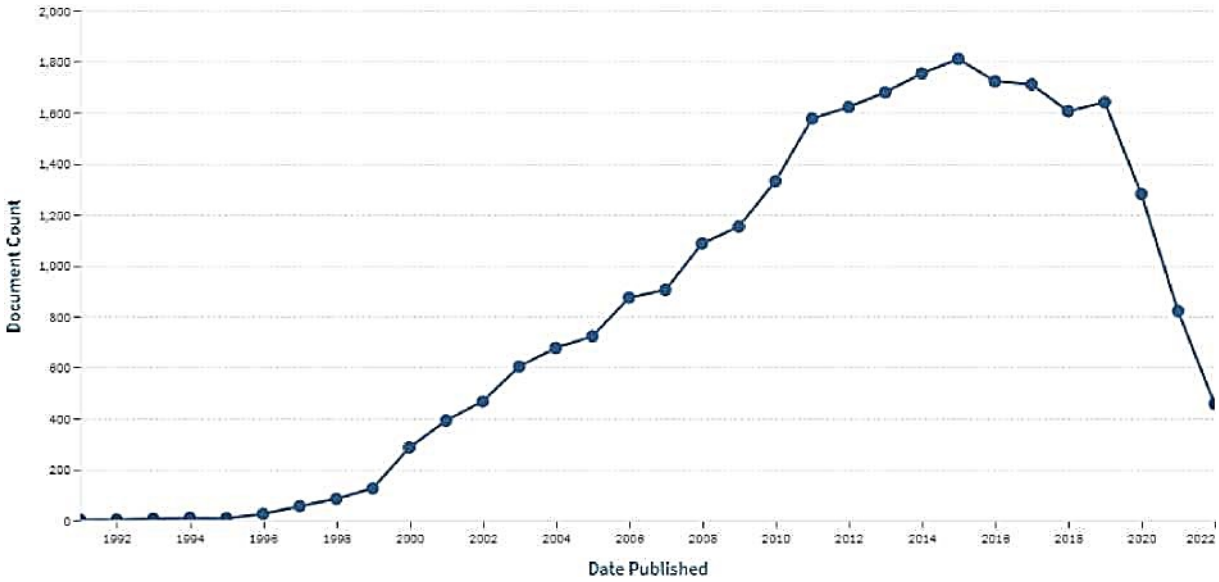


**Figure 1.** Number or scholarly works "Balanced scorecard" in period 1990-2022.
Source: www.lens.org, access: December 2022.

According to a study by I. Penc-Pietrzak conducted in 2010, BSC is used by approximately one third of large Polish enterprises. Of the 100 companies surveyed, 35 use the BSC (Penc-Pietrzak, 2012). The strategic scorecard has gained popularity due to its simplicity and adaptability for different organisations. The central role of the BSC is vision and strategy, which influences the strategic objectives in four perspectives: Financial, Internal Business Processes, Learning and Growth, and Customer. In each perspective, strategic objectives are defined through four interrelated key elements:

1. Objectives.
2. Measures.
3. Targets.
4. Initiatives (Kaplan, Norton, 1996, p. 8).

Initiatives can be understood as actions taken to achieve intended goals. The idea behind the BSC concept is that strategic objectives are first formulated, then measures of the objectives and target values for these measures are defined. Initiatives are formulated when those implementing the strategy are aware of what actions need to be taken to achieve the intended objectives. Therefore, it is possible that the precise definition of initiatives, understood as concrete projects, takes place outside the strategy (strategic plan) document itself. This is certainly an underestimated feature of the BSC in that it transfers the responsibility for implementing the strategy to the employees. In his lecture at the 2006 honorary doctorate award

ceremony at the University of Łódz, R. Kaplan emphasised that employee participation in strategy implementation was an unexpected and even unintended effect of BSC implementations. On the basis of interviews with managers of organisations that had implemented the BSC, an attempt was made to identify the most significant positive effects of the application of this method, expecting that the most important effect of the implementation would be an increase in the role of measurable strategic goals and the possibility of management by measures. However, the most important positive effect in the opinion of the managers surveyed was an increase in the involvement of employees, who identified strategic initiatives themselves.

The strategy of an organisation prepared according to the BSC is presented in the form of a strategy map, which shows the relationships between the four perspectives. The authors point out, however, that to the strategy map we add quantification, the definition of a time perspective and the selection of initiatives. Initiatives are selected strategic investments and a programme of action that enable the organisation to achieve the desired results within the set timeframe. Initiatives can be linked to perspectives and have a budget. In the practical examples presented, initiatives in the organisation are defined to support processes and develop intangible assets. Strategy explains and provides funding for initiatives (Norton, Kaplan, 2004).

In large organisations, there is a need to cascade the objectives described in the BSC - either the divisional branches of the corporation (Strategy Business Units - SBUs) or the support divisions (e.g. finance, HR, etc.) have their own scorecard. Analogously, SBUs and divisions or departments of the corporation may have separate initiative plans and their budget (Norton, Kaplan, 2006).

The creators of the BSC concept R. Kaplan and D. Norton point out that the identification of initiatives in organisations is a creative process and therefore difficult to structure, however, practice points to three ways to formulate initiatives:

1. The “missing measurement” programme.
2. Continuous improvement programmes linked to rate-of-change metrics.
3. Strategic initiatives linked to radical improvement in key performance drivers.

The “missing measurement” programme consists of supporting projects that aim to create opportunities to measure indicators identified in the BSC but which are difficult or impossible to measure, e.g. customer satisfaction, service quality, employee satisfaction. Continuous improvement programmes linked to rate-of-change metrics are used in organisations applying process improvement methods specific to Total Quality Management. The use of typical process quality metrics (such as e.g. PPM - Parts Per Million Defectives, percentage of missed orders, downtime, etc.) implies actions to improve their value. Strategic initiatives linked to radical improvement in key performance drivers tell us about situations in which we apply a completely new solution, e.g. a new computer system, a new process line, etc., in order to improve their value. So this is the application of an organisational innovation usually associated with a significant investment. (Kaplan, Norton, 1996).

L. Quezada et al. in his paper (2022) propose the DEMATEL method for prioritising strategic projects when applying the BSC. This is probably the only method that has not yet been applied in practice that supports the selection of projects based on criteria derived from the strategic objectives of the BSC. In contrast, Eilat et al. (2008) applied the BSC to the evaluation of R&D projects in organisations, while Milis and Mercken (2004) applied it to the evaluation of ICT projects. What these approaches have in common is the subordination of projects and their results to the organisation's strategy as described through the BSC objectives, regardless of the methodology used to value the projects.

The balanced scorecard originated as a tool for business, but recent years have shown the usefulness of this method in the public sector. This applies not only to the use of measurable strategic objectives in the four perspectives but to a large extent to the use of strategic initiatives for strategy implementation. Bracci et al. (2017) conducted an analysis of the use of performance measures in two Italian public service organisations. Although the cases described illustrate the difficulties and problems of BSC implementation, high expectations were attached to the emergence of new initiatives. Initiatives in the public sector can involve stakeholder resources - using collaboration in projects for the public good is the greatest success of public management.

## 2. Method

The paper uses a multiple case-study method to identify universal characteristics of strategic initiatives. Organisations that use or have used a BSC and describe their strategic initiatives in publicly available documents were selected for analysis. The main method of gathering information for the case studies was a web search, which also included publications available in the Quest database. Only documents in English were searched. It was assumed that the time range of available documents should not be earlier than 2010. The description of the structure of each case included the following:

1. Characteristics of the organisation.
2. Strategy and its components (strategic plan, mission, vision, strategic objectives).
3. Characteristics of strategic initiatives.

Organisations about which the above information was available and which met the diversity criteria were selected for the study. Cases confirming general observations, which more broadly can be regarded as cases confirming the theory (Yin, 2009), were selected for the study. The application of the diversity criterion consisted of selecting organisations from the business sector and the public sector, as well as geographical diversity. The identification of qualitative variables present in the cases allowed the creation of a typology of strategic initiatives. The main intention of the typology created was to be as universal as possible in understanding

strategic initiatives, so organisations of different sizes, representing different sectors and different countries were deliberately selected.

## 3. Results - described cases

### 3.1. ABB Ltd.

ABB is a multinational corporation operating in 66 countries in the power, electrical, robotics, automation and transportation business markets. The company was one of the first to apply the BSC method at the end of the 20th century (Ewing, Lundahl, 1996). The essence of the system introduced was to define a strategy for each strategic business unit (SBU) using the BSC. After 2010, targets and measures as well as initiatives were defined for each concern company, as shown in Table 1. At the concern level, the focus was on aggregating the achieved targets, leaving the companies free to pursue strategic initiatives.

**Table 1.**
*Initiatives for the selected SBU of ABB concern*

| Perspective | Initiatives |
|---|---|
| Financial perspective | *There were no initiatives for financial perspective* |
| Customer perspective | 1. Relationship marketing<br>2. Rewards for customer account sales |
| Internal processes perspective | 1. Industry exhibit<br>2. JIT project |
| Learning and growth perspective | 1. Development programme<br>2. Employee programme<br>3. Management development<br>4. Employee bonus plan |

Source: own compilation based on Kullven, 2010.

ABB is currently formulating strategic initiatives in the area of sustainable development relating to the following topics:

1. Enabling a low-carbon society.
2. Preserving resources.
3. Promoting social progress.
4. Integrity and transparency (ABB, 2021).

### 3.2. Pikevsille Lighting

The Pikesville Lightning (PL) organisation is a minor league baseball team based in Pikesville, Ohio, and plays in the Central Division of the Eastern League. Minor league in American Baseball Association "farming-system" exists in obscure towns training players for the major leagues. PL is also an affiliate of the Pittsburgh Pirates since the 1976, and plays in Waterfall Stadium, built in 2006 near Cleveland. Greg Storm, PL owner, has often been quoted

as saying, "I don't own a baseball team; I sell hot dogs!" which is the essence of minor league strategy: offering the sports experience for families and companies. The main strategic initiatives of PL concern two areas: Panel A - Game Day Events for All and Panel B - Special Request Game Day Experiences.

There are the following initiatives in Panel A - Game Day Events for All:

1. Post-game fireworks and concert.
2. Kids Happy Hour - free hour in FunZone for kids only.
3. Surprise Major League visitor from the past.
4. Meet-the-players night.
5. Become a general manager for the weekend.
6. Road trip give-away - travel with the team to a road game.
7. Win a one-hour shopping spree in the Lightning Shop.
8. All-star kid of the game - one child selected before each game based upon pre-entry.
9. The Magical Family - one family selected to sit with the team.
10. Mascot encounter - sit with the 'Lightning Bolt' team mascot.

In Panel B (Special Request Game Day Experiences) there are the following initiatives:

1. Birthday party - food, swimming, FunZone games and special VIP treatment.
2. Ceremonial first pitch - includes cap, autographed baseball, and team picture with you.
3. Corporate outings and parties.
4. Buy-a-box: Rent the owners' box for a night for your event.

Every activity has its own pricing list, however some activities are free of charge. Most of initiatives were developed by team members (Canace, Juras, 2012).

### 3.3. CRU

The Commission for Regulation of Utilities (CRU) is the independent regulator of the Irish energy market. In practice, this means accountability to the Single Electricity Market Committee (SEMC), a body made up of independent subject matter experts. The CRU's mission is to protect the public interest in Water, Energy and Energy Safety. The work of the CRU impacts every Irish home and business, by ensuring safe, secure and sustainable energy and water supplies at a reasonable cost. The CRU uses the BSC to determine its strategy and annual reports also follow the structure of the BSC. The CRU's Strategic Plan for the period 2022-24 outlines the Commission's Mission, Vision, Values and Strategic Priorities. The Commission will also be guided by Government Policy objectives and international commitments such as renewable energy targets. The CRU Strategic Plan for the years does not articulate strategic initiatives - the main outcome the operator wants is for energy and water users in Ireland to initiate action. Therefore, in CRU's impact strategy, initiatives are replaced by incentives and actions to promote incentives. Primarily, energy and water efficiency projects. Rewards for energy-saving measures can be worth up to EUR 3 million for institutional customers. CRU can also impose penalties of up to EUR 1 million for failing to meet energy-saving obligations.

CRU has defined a mission, vision and values in its strategic plan for 2022-24. The strategic objectives and their measures are formulated in four thematic areas:

1. Ensure security of supply.
2. Drive a Low Carbon Future.
3. Empower and protect customers
4. Enable our people and organisational capacity (CRU, 2022).

### 3.4. University of Warsaw

The University of Warsaw (UW) is a public university with more than 200 years of tradition, with the status of a research university. The University has formulated its strategy, which includes a mission statement. The University formulated its mission and strategy in 2002, updated in 2008. The strategy also includes activities that have the character of initiatives, such as major investments. In addition to the strategy, strategic initiatives have been formulated, which consist of 6 strategic programmes with the following objectives:

- strengthening the UW's position as the best research centre in Poland,
- maintain a high ranking among Central European universities and join the continent's top universities,
- international recognition,
- strong impact on the environment, in particular by addressing socially relevant research topics.

The university's strategic initiatives are:

1. 4EU+ Alliance - a programme implemented since 2016 in cooperation with 6 other European universities, consisting of cooperation in four areas (flagships): (1) Health and demographic change in the urban environment, (2) Europeanness: multilingualism, diversity, citizenship, (3) Data - Models - Transformations, (4) Environmental change. More than 100 research projects have been carried out within the Alliance.
2. Excellence initiative - research university - the status of a research university has been granted to 10 units in Poland, which receive an increased subsidy of 10%. In the case of the UW, this is approximately PLN 70 million per year. Five priority research areas have been identified (Research for the Earth, At the Core of the Micro and Macro Worlds, The Petabyte Challenge, Expanding the Frontiers of the Humanities, In Search of Regional Solutions to Global Challenges) and 70 specific activities have been identified.
3. The multi-year programme "University of Warsaw 2016-2025" - an investment programme comprising 18 major investments to increase the UW's capacity. The budget for this programme is PLN 970 million.

4. Programme of integrated actions for the development of the UW (2018-2022) - the programme supports, among others, new fields of study, scholarships, training, summer schools, as well as the development of the university's IT systems. The programme is financed by the Operational Programme Knowledge Education Development under the European Social Fund and has a budget of PLN 39 million.
5. International research programs - participation in European Institute of Innovation and Technology (EIT) projects: EIT Food, EIT Climate and EIT Raw Materials. This initiative also includes research activities within international research agendas: Centre for Quantum Optical Technologies (QOT) in collaboration with the University of Oxford, and Regenerative Mechanism for Health (ReMedy) in collaboration with the Medical University of Gottingen.
6. Federalisation with the Warsaw Medical University - joint activities with a federated university as part of the agreement signed in 2018.

Although the UW does not use the BSC as a strategic management tool, strategic initiatives are organised as per the principles of this method. Long-term programmes financed mainly from external sources include projects whose identification and implementation has a shorter time horizon.

## 4. Discussion

A summary and the most relevant characteristics of the cases analysed are given in Table 2. Two organisations (ABB Ltd and Pikesville Lighting) are business organisations and the other two are public organisations.

The main variation in the initiatives presented in the cases described in the paper is due to two variables:

- the extent of external (public) support - the extent to which public support was used to implement the Projects,
- the extent of collaboration with stakeholders - as part of their initiatives, organisations can carry them out on their own (with a small number of stakeholders) or collaborate with stakeholders.

**Table 2.**
*Characteristics of the cases analysed*

| Case features | ABB Ltd | Pikesville Lighting | Commission for Regulation of Utilities (CRU) | University of Warsaw |
|---|---|---|---|---|
| Headquarters/ area of operation | Zurich, Switzerland/ world | Pikesville/Ohio USA | Dublin/Ireland | Warsaw/Poland |
| Employment | 110 000 | No data available[1] | 120 | 7 678 |
| Strategy | Sustainability in global markets. | Transforming games into an affordable family experience with much more entertainment offered than just the game. | Regulating energy and water for a changing climate. Mission, vision and values. Strategic objectives in 4 areas. | Development Strategy including the university's mission, priorities, specific objectives and investment plans. |
| Strategic initiatives | Strategic initiatives in the 4 areas of sustainable development. Initiatives and programmes at SBU level. | 14 initiatives targeting individual and business customers. | Initiatives related to incentives for energy and water users to undertake Energy Saving Projects. | The University is implementing 6 strategic programmes funded from various external sources. |

[1] Based on the data in the case report, it can be presumed that the Pikesville Lighting team comprised no more than 100 employees.

Source: own study.

A typology of strategic initiatives using the above variables is presented in Table 3. There are four models of initiative implementation: autarkic, isolated, influencer model and transparent model.

**Table 3.**
*Typology of strategic initiatives*

| | | **Scope of public support for strategic initiatives** | |
|---|---|---|---|
| | | low | high |
| **Scope of stakeholder cooperation** | narrow | **A - autarkic model**<br>Examples:<br>ABB,<br>Pikesville Lighting | **B - isolated model**<br>*No examples* |
| | wide | **C - influencer model**<br>Example:<br>CRU | **D - transparent model**<br>Example:<br>University of Warsaw |

Source: own study.

The strategic initiatives presented in the examples are also differentiated according to the initiators of the projects. We can distinguish a "top-down" approach in which initiatives are part of the strategy - even if they are proposed by lower levels, the decision to launch and fund them lies with the central authorities. Such a situation can be observed at the University of Warsaw, where each initiative is a programme within which projects can be initiated and implemented. The second situation, which we can call the 'bottom-up' approach, consists in setting strategic goals and expected values for the measures of these goals in the strategy. However, we expect the proposal of activities/projects to come from the lower levels of the organisation. In the cases of ABB, Pikesville Lighting and CRU we are dealing with this approach. The specific case here is CRU, where initiatives are understood to be the activities of the energy and water market players in Ireland.

A separate issue is the theme of strategic initiatives: in the case of business organisations, initiatives concern opportunities to increase competitive advantage. The ABB example shows that the last decades have been an evolution: from strictly business programmes and projects at the end of the 20th century, to environmental sustainability initiatives. Obviously, we can observe a link between the initiatives and the core business of the organisation. In the case of the UW, the outcome of most initiatives is research projects; this is the naturalized task of a research university. In second place are investments to support scientific and teaching activities at the university. According to the essence of the BSC, **investments should always appear as initiatives and not as strategic goals.** This is due to the nature of the objectives appearing in the BSC, which relate to efficiency and not to the future state itself. Investments, i.e. the purchase or production of fixed assets, are a means to achieve the strategic objective and not the strategic objective. The UW example shows that some investments have been left within the strategic plan, this may be due to a misunderstanding of the nature of strategic management by the stakeholders involved in the preparation of the strategy. Furthermore, it should be emphasised that UW does not make full use of the BSC methodology for strategic management. It was chosen as a case in this paper because it is a good example of organising initiatives, in line with the essence of the BSC.

In the examples presented, only in one case (ABB) is there a link between initiatives and BSC perspectives. In the theory and strategy maps described in the literature, this link is more often observable. It is difficult to conclude that this means that the link is only present for business. Certainly, strategic initiatives can be logically organised thematically according to BSC perspectives, with the financial perspective being somewhat challenging. In the business sector, the financial perspective is the ultimate outcome, which means that any initiative that improves the competitiveness of the business relates to the financial perspective. Perhaps for these reasons, in the case of ABB, the identification of initiatives for the financial perspective was abandoned. One could, of course, imagine an initiative for the financial perspective that would correspond to the 'missing metrics' approach described by Norton and Kaplan (1996), which would be the creation or improvement of a corporate financial management system.

## 5. Conclusions

The role of strategic initiatives is underestimated in the management practice of organisations applying the BSC. The analyses carried out allow the following conclusions to be drawn:

1. Strategic initiatives are a fundamental type of organisational activity outside of operations. Referring to the concept of ambidexterity, which distinguishes between exploitation (operational activity) and exploration (search for new opportunities,

improvement), strategic initiatives are precisely a type of exploration providing new opportunities for action in the future.

2. The basic form of strategic initiative is the project. In very large organisations, projects are organised into programmes. Strategic initiative projects can have a variety of themes: investment projects, improvement projects or marketing campaigns.
3. As initiatives take the form of Projects, the effectiveness of their implementation depends on the level of project maturity in the organisation. In organisations with a high level of project maturity, the efficiency and effectiveness of initiating, executing and implementing the outcomes of projects is significantly higher.
4. The presented typology of Strategic Initiatives refers to a holistic approach to the undertaking and implementation of Strategic Initiatives in organisations that apply the BSC but also those that do not apply the BSC but formulate Strategic Initiatives in the form of programmes to support specific themes in the organisation. The typology presented is not intended to position individual projects within the organisation, although it may assist in understanding the opportunities offered by strategic initiatives to the organisation.

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# CORPORATE SOCIAL RESPONSIBILITY AS A MODERN CONCEPT OF ORGANIZATION DEVELOPMENT

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**Introduction/background**: Currently in Poland, it is becoming increasingly popular to implement activities related to social responsibility in organizations. Companies have begun to pay more and more attention to such issues as building relationships with the environment, as well as widely understood social interest or environmental protection has become important.
**Aim of the paper**: The purpose of the article is to indicate the role of social responsibility and its relationship to the development of the organization using a selected example.
**Materials and methods**: The study used the case-study method using a survey questionnaire tool.
**Results and conclusions**: Based on the survey, it can be concluded that the employees of the surveyed enterprise have a positive view of social responsibility activities. The organization should focus on a strategy based on investing in solutions to improve the quality of life of employees, the local community, and strive to offset the negative impact on the environment.

**Keywords:** Corporate social responsibility, stakeholders, enterprise, environment.

## 1. Introduction

The concept of corporate social responsibility has evolved significantly with the development of the economy. New areas of the concept are linked to changing realities that business exerts on its environment. Overexploitation of natural resources, widening disparities in society, climate change, increasing pressure to reduce production costs, often resulting in violations of basic human rights, are not new phenomena, but the events of the twentieth century - from environmental disasters to corruption scandals on an international scale - led to public awareness of the imperfections of business (Stanek, 2009). The disclosure of numerous irregularities resulted in heightened public vigilance over corporate activities. The public expected greater transparency from companies, and consumer organizations took an interest in their activities, protesting unethical treatment of employees, contractors or customers.

They began to demand that companies take social and environmental aspects into account. The pressure of rising social expectations and multi-directional pressures on the business sector initiated changes in the value systems of many companies (Plawgo, 2009).

Corporate social responsibility is one of the most complex, dynamic concepts facing business leaders today, who are under increasing pressure to create a better quality of life. It is important for business to engage in the issue of ethical behavior, as well as to contribute to economic development while taking into account social aspects. Corporate social responsibility is meant to merge the concepts of global citizenship with concern for the environment, as well as sustainable development. Well-understood corporate responsibility in practice means, first of all, that business leaders must be sensitive to the concerns of not only internal but also external stakeholders. They should also have a good understanding of the conditions that prevail in society so that they are able to have a positive impact on them. They should also take into account the social consequences resulting from their decisions affecting broad groups of not only constituents, but also stakeholders and the environment (Doś, 2020). It is precisely to meet such demands from various types of stakeholders that the idea of corporate social responsibility was created.

## 2. Literature Review about Corporate Social Responsibility

There are many definitions of Corporate Social Responsibility (CSR) in the literature, but they are not always consistent, which is due to the fact that many authors from different disciplines attempt to interpret it.

An invaluable contribution to the development and spread of the concept of corporate social responsibility is attributed to the European Union. The European Commission's Green Paper emphasized that the concept of corporate social responsibility is based on the responsibility of companies for their impact on society (European Commission, 2011). This impact is multidimensional and manifests itself not only as companies' concern for the environment, employees or working conditions. This means that companies are expected to respect existing laws and mutual agreements between social partners, but also to make a significant contribution to projects that are related to sustainable development and the construction of a strongly socially competitive market economy. The achievement of such a goal is directly related to the ability to integrate the activities of a given enterprise with environmental, social, consumer, as well as ethical expectations.

In recent years, it is possible to see a trend toward standardization of activities on the concept of CSR. A comprehensive standard for the concept of corporate social responsibility is the international standard ISO 26000.This standard systematizes knowledge about the concept of corporate social responsibility, according to which, CSR is the responsibility of

an organization for the impact of its activities and decisions on the environment and society, contributing to sustainable development, taking into account the expectations of all stakeholders as well as consistent with applicable law and consistent with international standards (ISO 26000, Karczewski, Kretek, 2013).

An interesting definition of the CSR concept is presented by M. Rojek-Nowosielska. The author defines it as an intentional action taken in a given enterprise, which were taken based on the results of social dialogue and aimed at creating socially important values that meet the expectations of stakeholders (Rojek-Nowosielska, 2017). An interesting definition was also provided by M. Rybak, defining corporate social responsibility as the obligation of management to choose such actions and decisions that will contribute to taking care of its own interest (multiplying the company's profit) as well as multiplying and protecting social welfare (Rybak,2001). In turn, B. Rok presented the concept of CSR as a long-term and strategic approach, based on the rules of social dialogue and the search for solutions that benefit society as a whole (Rok, 2004). It is also worth looking at the definition, presented by A. Paliwoda-Matiolanska, who defined the CSR concept as an effective and comprehensive process of business management, which, by properly identifying the expectations of stakeholders, contributes to the growth of competitiveness, ensuring its stability and sustainable development, and at the same time creates favorable conditions for social and economic development, creating both economic and social value (Paliwoda-Matiolanska, 2017). The above review of the definitions of the CSR concept allows us to consider the strategic dimension of the concept. CSR is increasingly relevant to the issue of corporate competitiveness. Taking CSR into account in the strategy of enterprises can bring many benefits in terms of risk management, reducing the cost of access to capital, as well as customer relations, human resource management and innovation potential (Adamczyk, Gródek-Szostak, Kulisa, 2020).

Based on the definitions of corporate social responsibility presented above, it can be concluded that due to its multifacetedness and complexity, the concept should be interpreted as a certain whole, but consisting of various aspects. The definitions presented indicate that the concept of CSR is a set of voluntarily adopted actions by companies, treated as a long-term benefit.

The idea of corporate social responsibility is becoming more and more popular every year. Conscious CSR activities integrated with business strategy can become a way to improve the company's image, and also become an important element in building cooperation. Currently, more and more studies conducted in Polish organizations indicate the role played by corporate social responsibility in their development.

An interesting survey on corporate social responsibility was conducted in 2013 with a sample of 1,055 respondents. During the survey, respondents were asked, among other things, about companies' commitment to society, to what extent Poles expect companies to engage in CSR areas, as well as to what extent different industries engage in socially responsible activities. The survey found that few respondents pay attention to CSR activities when choosing

a product. Few consumers were also able to change their purchasing preferences, which were often related to brand awareness or the right price. According to the respondents, it is likely that with more and more frequent creation by companies of consistent and long-term social involvement programs and their proper communication, there will be a growing group of consumers in Poland who will take into account activities in this area when making purchasing decisions (Greszta, Maison, 2014).

In 2016, another survey was conducted to find out whether Polish companies engage in social responsibility activities. Based on the survey, it can be concluded that (Tylec, 2017):

- conducting socially responsible activities was declared by 63.5%;
- only 70% of entities declaring social commitment had an information policy on ongoing projects, and this mainly consisted of posting information on the company's website (65%); one in two entities informed about it in the management report, while only one in five companies declaring to be socially responsible prepared a separate CSR report;
- building the company's image (30% of indications) was most often cited as the motives for engaging in CSR activities; almost one in five responses referred to a positive impact on the company's value, strengthening relations with stakeholders and the desire to build a socially responsible company;
- most companies allocated less than 0.05% of sales revenue to socially responsible activities - comparing data for 2013-2015, there is no increase in CSR expenditures in relation to sales revenue.

Based on the above information, it can be concluded that the orientation of enterprises to socially-oriented activities is often part of their competitive strategy.

Another interesting study in the area of CSR was conducted at two companies in the manufacturing industry among employees of organizations operating in the Silesian province in 2018. The purpose of the survey was to examine the ways in which CSR strategies are implemented in organizations. The first issue analyzed was to identify whether the idea of corporate social responsibility is actively introduced in the companies where the respondents work. 74.16% of respondents answered in the affirmative, Next, the ways of implementing CSR strategy in organizations were analyzed. In first place was the promotion of this strategy among employees using various communication channels (49.43%), followed by 39.32% of respondents indicating the importance of creating an organizational culture aimed at cooperation with the environment, while in last place was cyclical training for employees (11.23%). The survey also focused on assessing the way CSR strategy assumptions are communicated. Here, the survey shows that in most cases it is positive (66.29%). Another issue was the participation of rank-and-file employees in actively creating the main objectives of the CSR idea. Unfortunately, the survey results show that 65.16% of respondents declared that they have no influence on the formation of CSR strategy. Respondents were further asked about their participation in CSR initiatives. 74.15% of respondents actively participated in such activities, and they cited a desire to demonstrate (51.51%) and a sense of community with the environment

(31.81%) as the most common motive for participation. The last issue analyzed was how to improve the implementation of CSR strategies on organizational grounds. Respondents indicated that in order for these activities to run more smoothly there should be more consideration of employees' ideas (58.55%). As the presented research indicated, managers try to promote the social responsibility strategy among employees using various communication channels for this purpose, while there should be greater use of employees' valuable ideas which would result in increasing their involvement in such activities (Kochmańska, 2018).

An interesting study on corporate social responsibility was conducted by the Coleman Parkes Institute in 2019. The survey included about 5000 respondents from various countries around the world, including Belgium, Denmark, Finland, France, Germany, Italy, the Netherlands, Norway, Portugal, Russia, South Africa, Switzerland, Turkey, the United Kingdom and Poland. The research looked at what an employee's perspective and expectations are of employment in a company that applies CSR standards. According to the research, the goals of a company that is oriented toward social responsibility are becoming increasingly important to job seekers. The young generation is increasingly paying attention not only to choosing companies that are committed to social responsibility, but also to employment in such companies for which issues related to the CSR concept are important (Paprocka, 2021).

Based on the presented research, it can be concluded that currently the concept of corporate social responsibility plays an important role not only in the context of enterprise development, but also in building its image.

## 3. Materials and Methods

The research process consists of the following stages: theoretical cognitive research, identification of the cognitive gap, formulation of research hypotheses and their verification through quantitative research.

The purpose of the article was to identify the role of social responsibility and its relationship to organizational development using a selected example. Based on the main objective of the study, the following specific objectives were formulated:

- The essence of social responsibility is presented.
- The characteristics of research on corporate social responsibility in Poland over the past five years are discussed.
- The conceptualization of the dimensions of CSR was made.
- An instrumentarium for measuring CSR was developed.
- Empirical verification of the set hypotheses was carried out.

On the basis of theoretical and cognitive research, a gap was identified reflecting the shortcomings of scientific research on CSR in multidimensional terms based on the international standard ISO 26000. On this basis, a survey questionnaire was constructed.

The quantitative research focused on the main research problem formulated in the form of the question of how the social responsibility of business is shaped in the company in question?

With regard to the research problem defined on the basis of the literature analysis, the following specific research questions were formulated:

1. will the company's corporate social responsibility orientation be related to increasing the confidence of internal and external stakeholders?
2. with the implementation of the concept of corporate social responsibility, will the organization take measures to reduce the negative impact of the on the environment?

In search of answers to the research questions posed, the following research hypotheses were formulated:

H1: An enterprise's orientation to corporate social responsibility contributes to improving working conditions among the enterprise's employees.

H2: An enterprise's orientation to social responsibility contributes to improving its image.

H3: An enterprise's orientation to social responsibility contributes to reducing the enterprise's negative impact on the environment.

The formulated research questions and research hypotheses resulted from the theoretical research conducted.

The quantitative research used a standardized questionnaire with a five-point Likert scale. A case study method was chosen to conduct the research. This method makes it possible to draw empirical conclusions about the analysis of a phenomenon in its natural context, which is particularly important when the boundary between a case and its context cannot be clearly defined (Hollweck, Yin, 2016).

The study provided the authors with empirical, in-depth insights into the specifics of corporate social responsibility of a purposely selected organization.

## 4. Analysis of the study

The survey was divided into 7 areas, i.e. organizational governance, labor law, labor law practices, environment, fair operating practices, consumer issues, and social involvement and community development.

The survey was conducted on 40 respondents of the surveyed company.

At the beginning of the surveys, respondents were asked to answer what they thought the term "corporate social responsibility" meant. More than half of the respondents (mainly with vocational education) gave the answer I don't know, while employees with higher education

gave such answers as: Corporate concern for the local community, the environment - 17.5%, and that it is an attempt by the company to take action to help the local community, reduce the negative impact on the environment - 7.50%.

The first question of the survey concerned organizational governance - there is a transparent process of decision-making and information transfer in the company. 70% of respondents tended to agree with the above statement, 17.5% of employees strongly agreed, while 7.5% of respondents answered that they tended to disagree with the statement. The results are presented in the chart below.

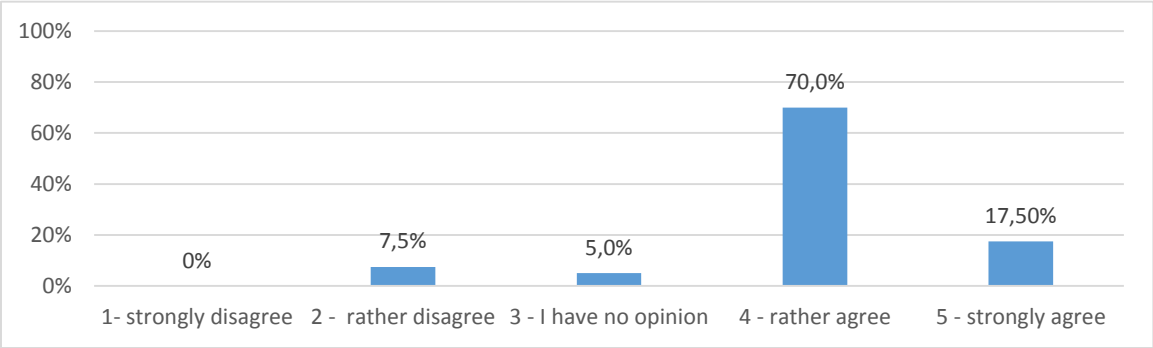


**Figure 1**. There is a transparent process for making decisions and communicating them within the company.

Source: own study.

Another statement was: the roles and responsibilities of each employee were clearly defined in the company. 55% of respondents said they strongly agreed, while 40% of respondents tended to agree with this statement. Only 5% rather disagree.

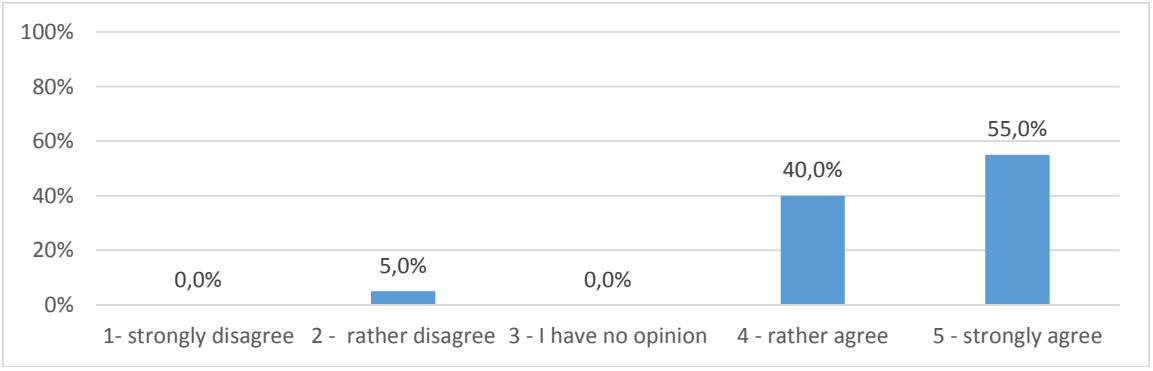


**Figure 2**. The company has clearly defined the roles and responsibilities of each employee.

Source: own study.

In the next question, respondents were asked whether they agreed with the statement that the company has a code of ethics in place at both company locations and allows reporting of any attempted violations of these rules by an employee. 57.5% of respondents marked the answer strongly agree, while 32.5% of employees tended to agree with the statement, 10%employees had no opinion on the existence of a code of ethics in the organization.

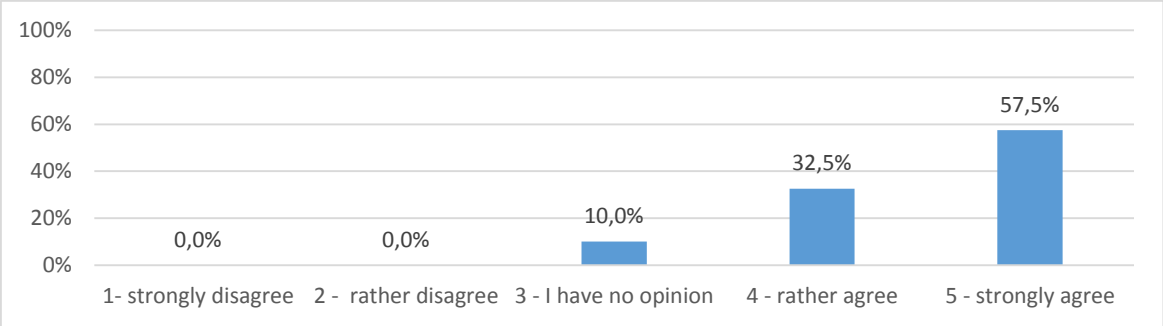


**Figure 3.** The company has established a code of ethics that applies at both company locations and allows reporting of any attempted violations of these rules by an employee.

Source: own study.

Another question asked whether the company encourages employees to actively participate in the organization's social responsibility activities. 57.5% of respondents have no opinion on this issue, 32.5% rather agree, 10% of respondents strongly agree.

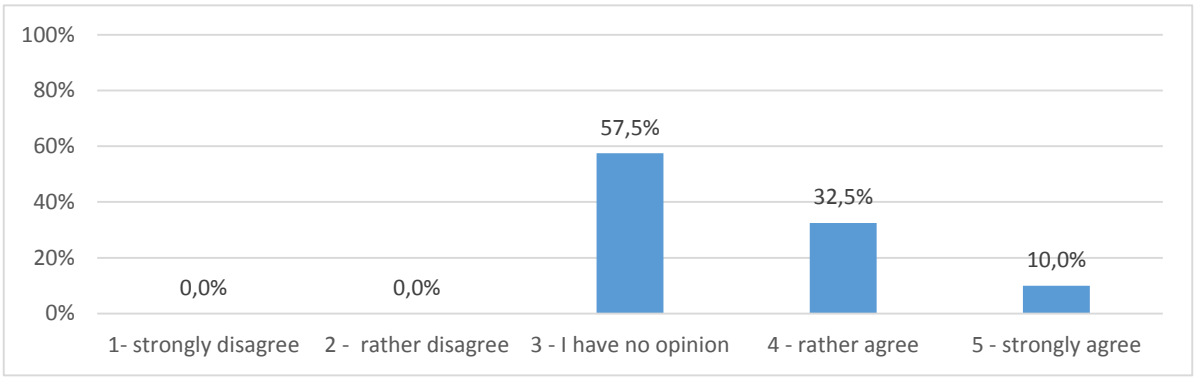


**Figure 4.** The company encourages employees to actively participate in the organization's social responsibility activities.

Source: own study.

Another finding was whether the company had developed mission, vision and values to clearly specify the organization's culture and set its direction. 85% of respondents marked the answer strongly agree, while the remaining 15% of respondents indicated the answer rather agree.

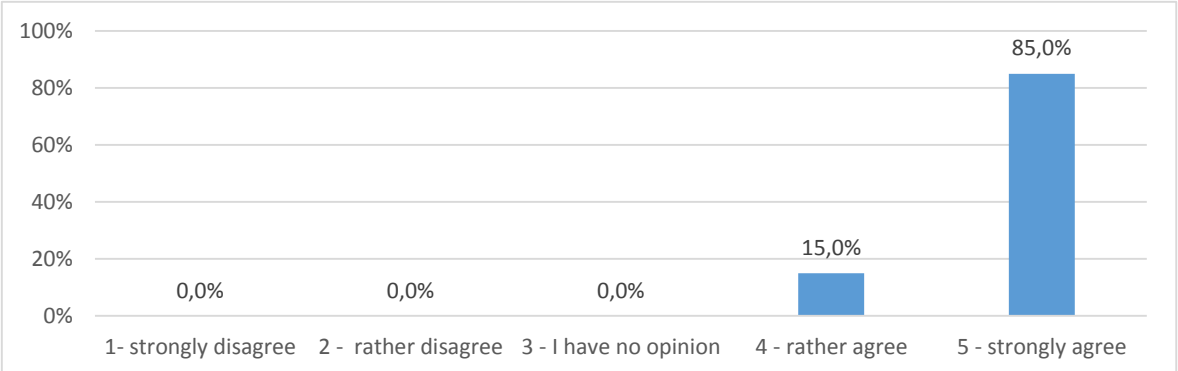


**Figure 5.** The company has developed a mission, vision and values, the purpose of which is to clearly specify the organization's culture and set its direction.

Source: own study.

The second area surveyed was human rights. Respondents were asked whether the company respects the rights and freedoms of employees in the area of anti-discrimination (cultural, racial, gender, age). 55% of respondents marked the answer rather agree, while the remaining 45% of employees strongly agree.

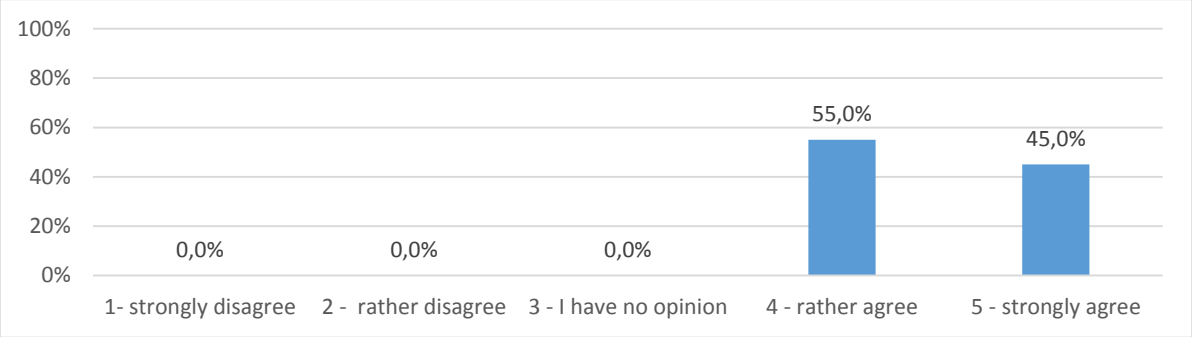


**Figure 6.** The company respects the rights and freedoms of employees against discrimination (cultural, racial, gender, religious, age).

Source: own study.

Next, the respondents were asked to express their opinion on whether there is a Company Social Benefit Fund at the company, the purpose of which is to ensure the social security of its employees. 92.5% of respondents indicated the answer strongly agree, while the remaining 7.5% of people chose the answer rather agree.

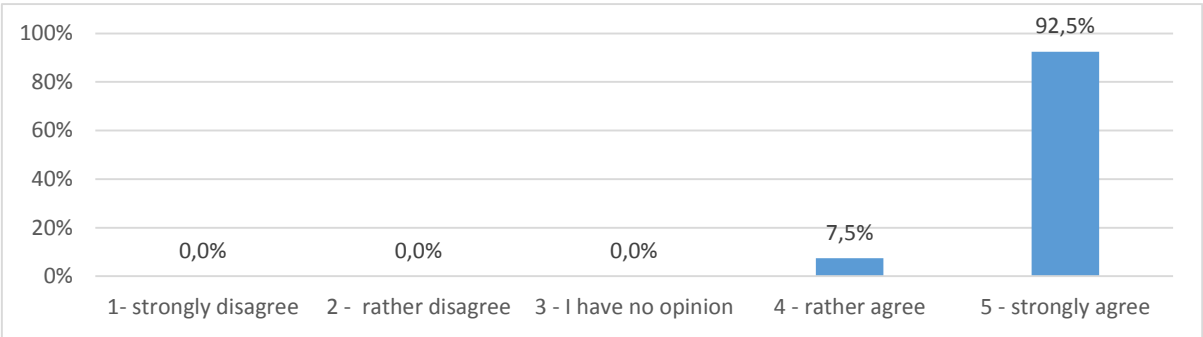


**Figure 7**. The company has a Company Social Benefits Fund, the purpose of which is to ensure the social security of its employees.

Source: own study.

Another statement asked whether respondents thought the company cared about respecting regulations related to labor law. 70% of respondents marked the answer "strongly agree", while the remaining 30% of respondents selected "rather agree."

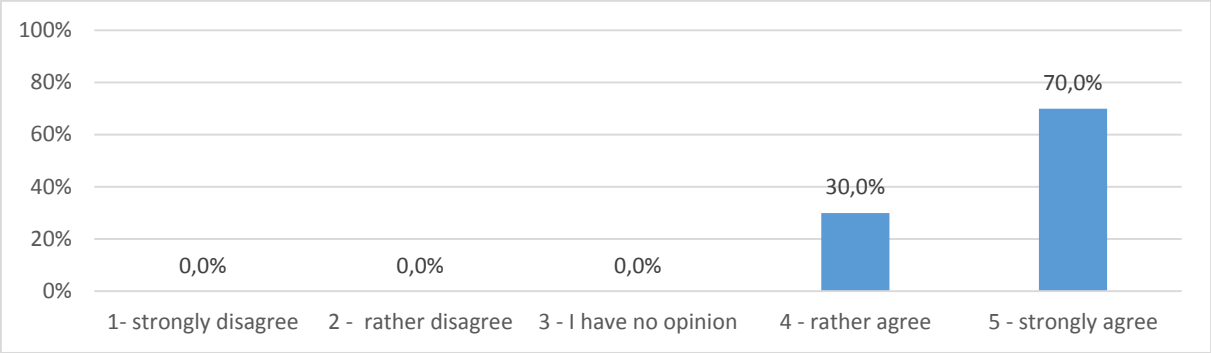


**Figure 8.** The company ensures that regulations related to labor laws are respected.

Source: own study.

Another question concerned the legality of raw materials and components. 57.5% of respondents chose the answer "rather agree," 27.5% "strongly agree," 15% of respondents had no opinion on the subject.

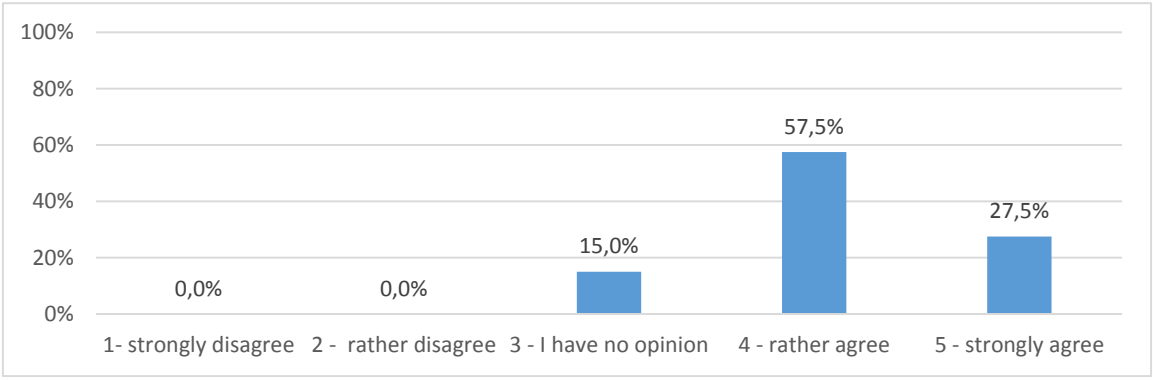


**Figure 9.** Only components/raw materials from legitimate sources are used in production.

Source: own study.

The next question asked whether the company pays a life insurance and medical care package to all employees. 77.5% of respondents marked "strongly agree," while 20% marked the answer "rather agree," 2.5% of respondents had no opinion on the subject.

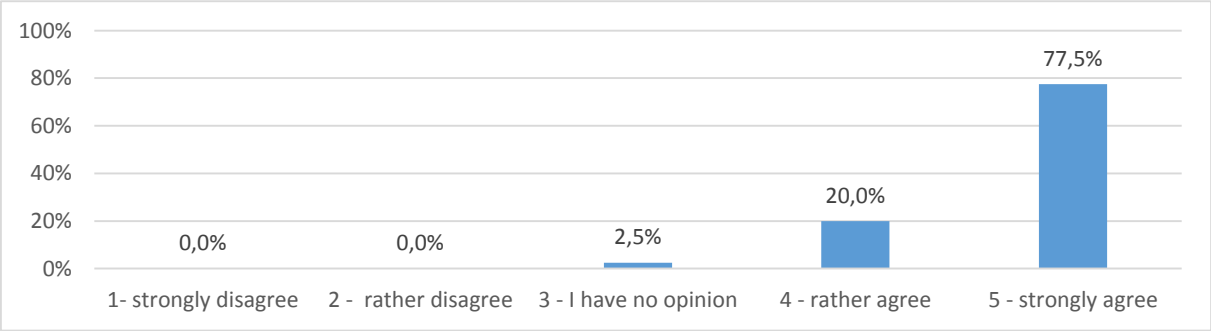


**Figure 10.** The company pays for a life insurance package and medical care for all employees.

Source: own study.

The final human rights issue is whether the company cares about preventing bullying in the workplace. 57.5% of respondents marked the answer "I rather agree", while 40% of people chose the answer: strongly agree". Among the respondents, only 2.5% had no opinion on the subject.

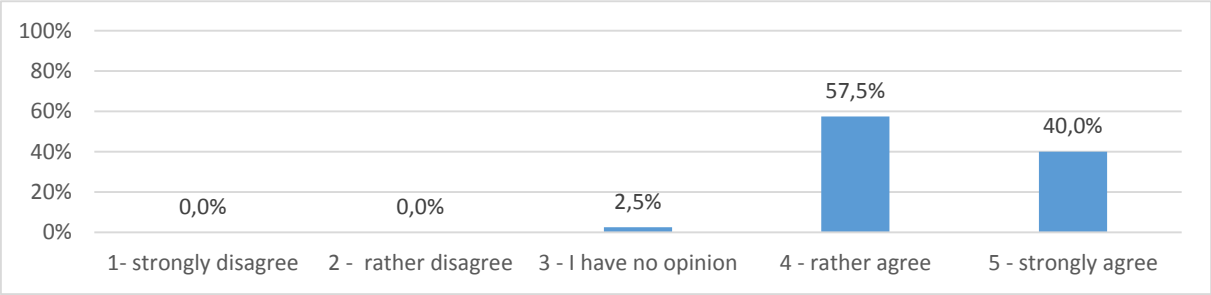


**Figure 11.** The company is committed to countering bullying in the workplace.

Source: own study.

Another area of the survey was labor practices. Respondents were first asked whether they agreed with the statement, that the company where they are employed provides working conditions that comply with regulations including maintaining occupational health and safety standards. 67.5% marked the answer "strongly agree," while the remaining 32.5% selected the answer "rather agree".

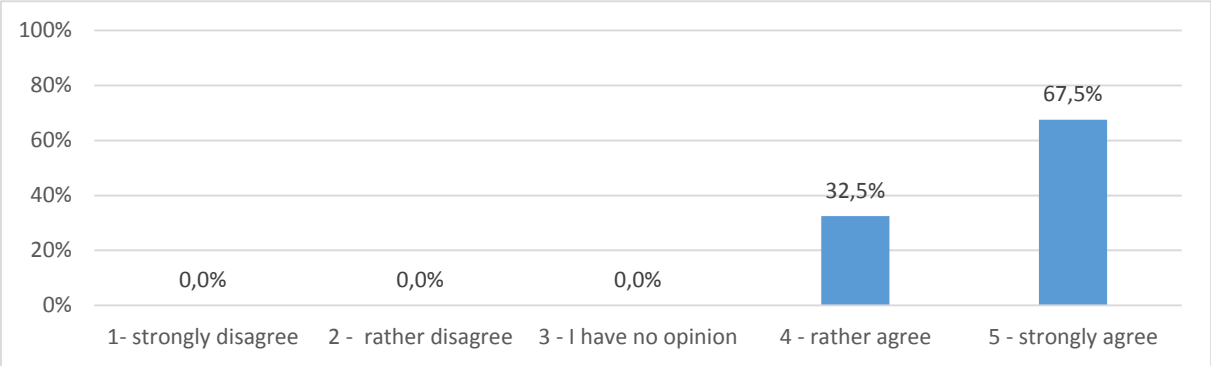


**Figure 12.** The company provides working conditions in accordance with regulations including maintaining standards of health and safety at work.

Source: own study.

Does the company allow its employees to participate in internal recruitment and provide opportunities for promotion. The answer "strongly agree" was selected by as many as 80% of respondents, while the remaining 20% of people chose to select the answer "rather agree".

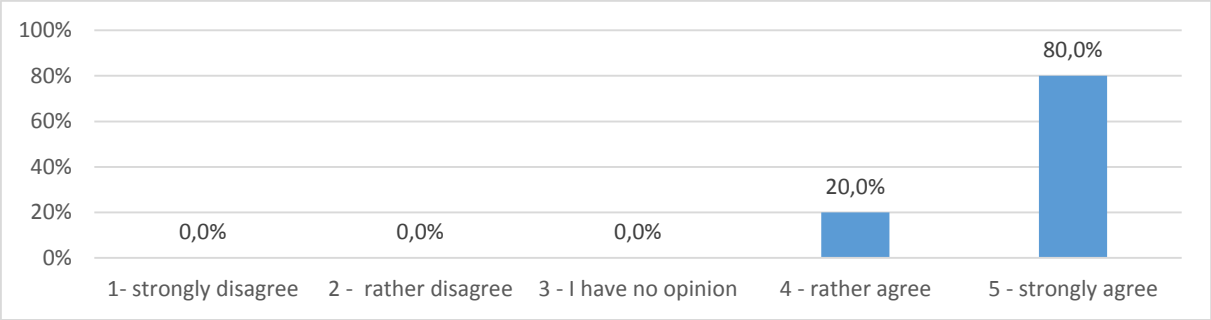


**Figure 13.** The company allows employees to participate in internal recruitment and promotion opportunities.

Source: own study.

In the next question, respondents were asked to express their opinion regarding the statement that the company has introduced flexible working hours and hybrid work opportunities (allowing work-life balance) for employees. 72.5% chose the answer "strongly agree," while the remaining 27.5% chose "rather agree".

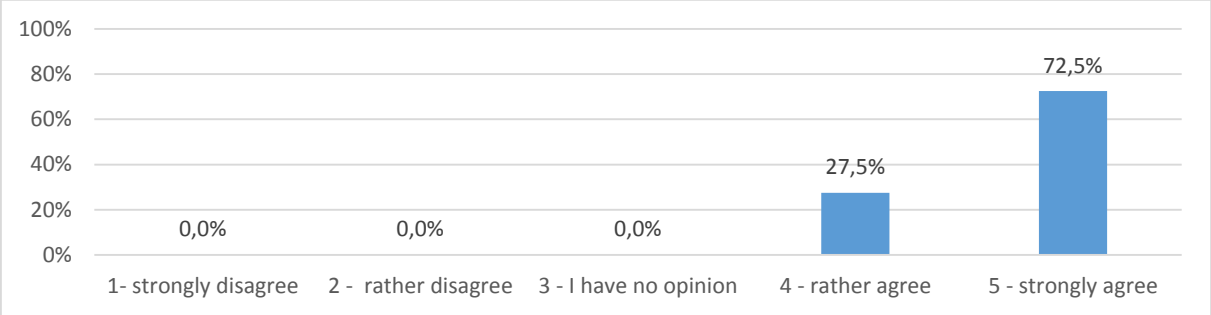


**Figure 14.** The company has introduced flexible working hours and hybrid work opportunities for employees (allowing work-life balance).

Source: own study.

Respondents were asked whether the companies where they work provide them with stable employment. 77.5% of respondents strongly agreed, while 22.5% chose the answer "rather agree".

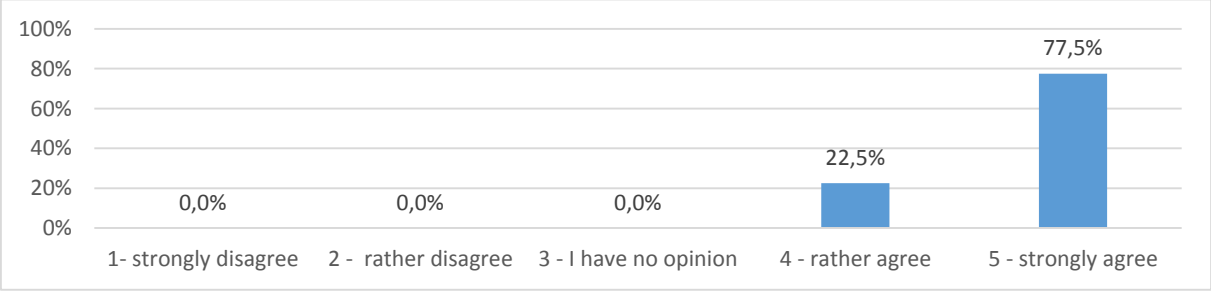


**Figure 15.** The company ensures stable employment, e.g., by paying employees on time.

Source: own study.

The last question from the labor practices area asked whether the respondents thought the company cared about the development of its employees through skill enhancement, including training and skills improvement. 75% of respondents answered "strongly agree," while the remaining 25% of people marked the answer "rather agree".

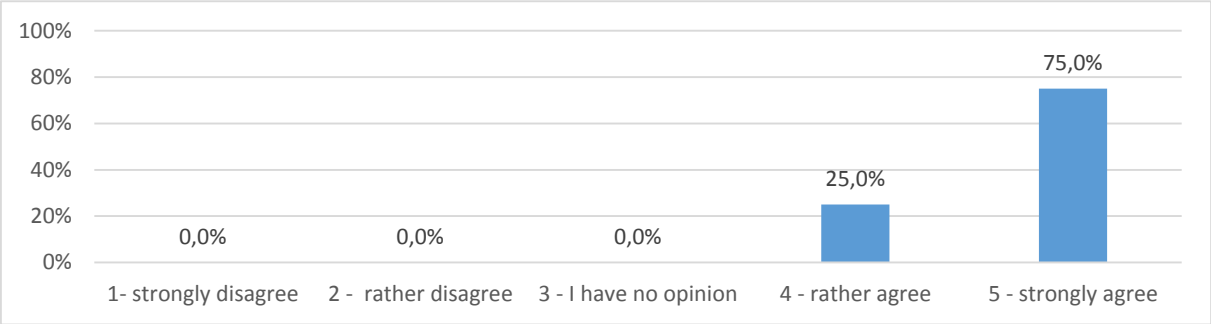


**Figure 16.** The company cares about the development of its employees by improving their skills and this includes training and skill development.

Source: own study.

Another area analyzed was the environment. Respondents were asked whether they agreed the company reduces its negative impact on the environment, e.g. through efficient use of raw materials and materials. 47.5% of respondents tended to agree with this statement, 32.5% of respondents answered "strongly agree," while 20% of respondents "have no opinion".

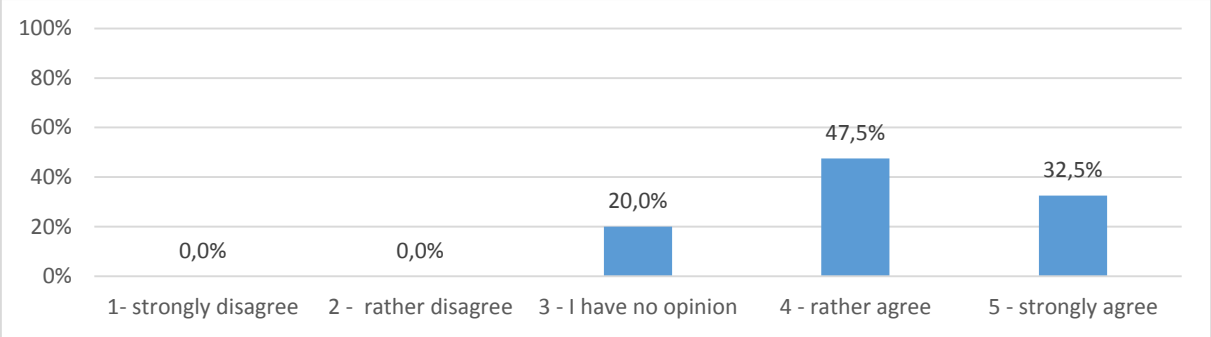


**Figure 17.** The company reduces negative environmental impacts, for example, through efficient use of raw materials and materials.

Source: own study.

In the next question, respondents were asked whether they agreed with the statement that the company is striving to reduce consumption of water and energy resources. 42.5% of respondents rather agree with this statement 35% strongly agree. 22.5% have no opinion.

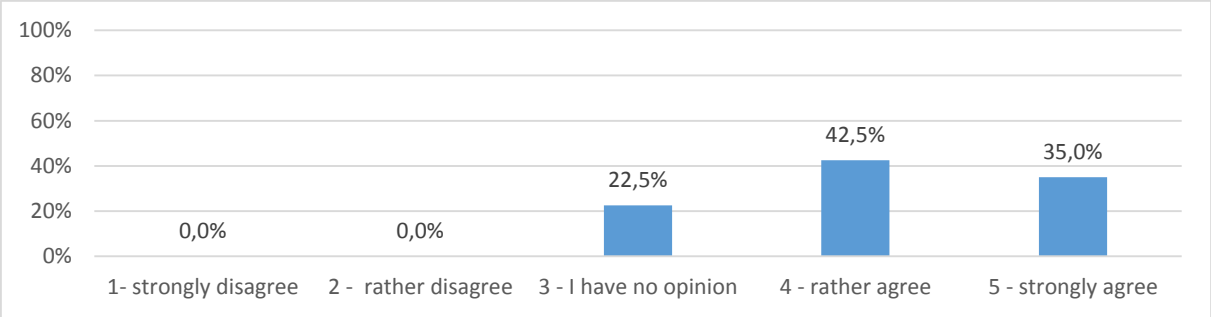


**Figure 18.** The company aims to reduce consumption of water and energy resources.

Source: own study.

Another question asked respondents for their opinions on whether they thought the company was investing in technological solutions, e.g. photovoltaic panels, a fleet of hybrid cars, LED lighting, segregation of garbage and bulky waste. 92.5% of people agree with this statement., 7.5% of respondents do not have an opinion on the subject.

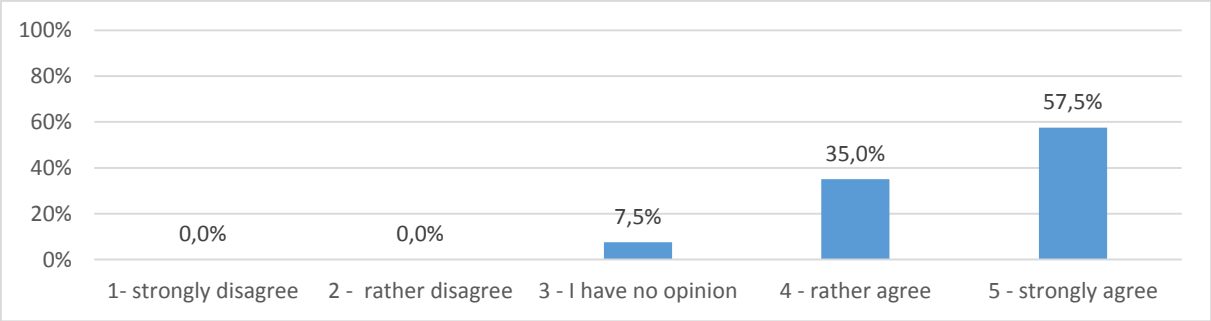


**Figure 19.** The company is investing in technological solutions, e.g. photovoltaic panels, a fleet of hybrid cars, LED lighting, segregation of garbage and bulky waste.

Source: own study.

Another statement asked whether the company cares about the vegetation located on the factory/warehouse premises. 7.5% of respondents have no opinion on this issue, while the remaining 92,5 % of respondents agreed with the statement.

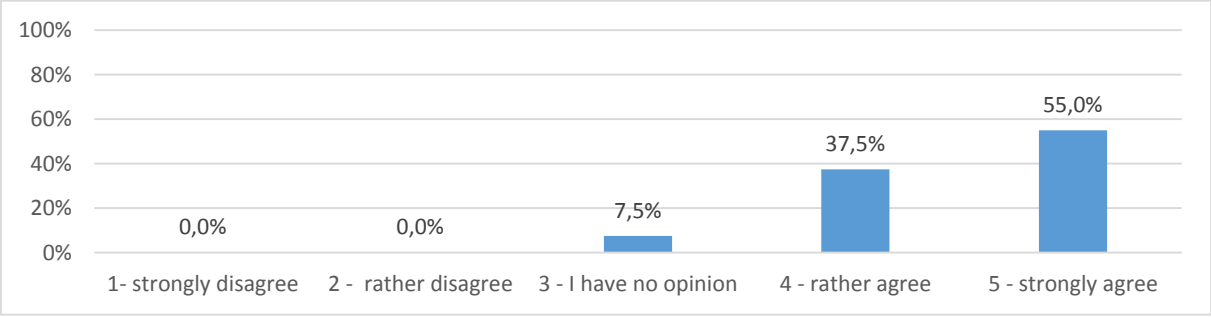


**Figure 20.** The company takes care of the vegetation on its factory/warehouse premises.

Source: own study.

The next group of statements relates to the area of fair operating practices. Respondents were asked whether they thought employees cared about the company's image by preventing corruption and embezzlement. 62.5% of respondents selected the answer "rather agree", while the remaining 37.5% of people selected "strongly agree".

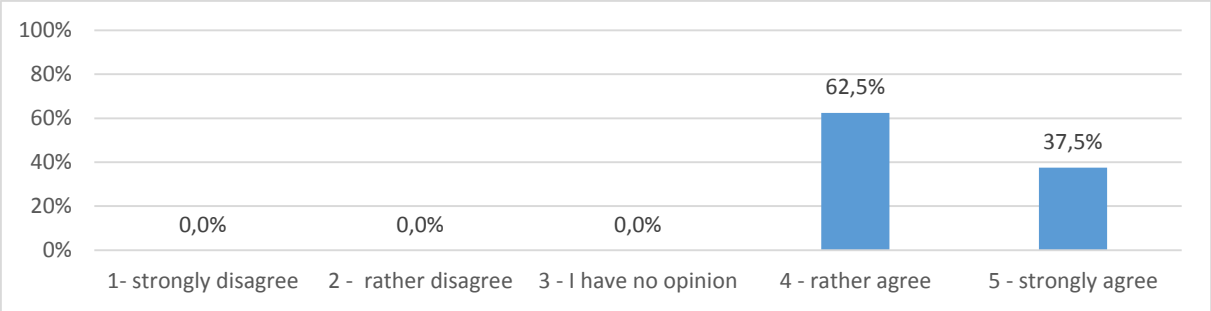


**Figure 21**. Employees take care of the company's image by preventing corruption and embezzlement.

Source: own study.

The next question asked whether, according to respondents, the company cares about for good relations with other organizations and institutions. 60% of respondents selected the answer "rather agree," while the remaining 40% of respondents marked the answer "strongly agree".

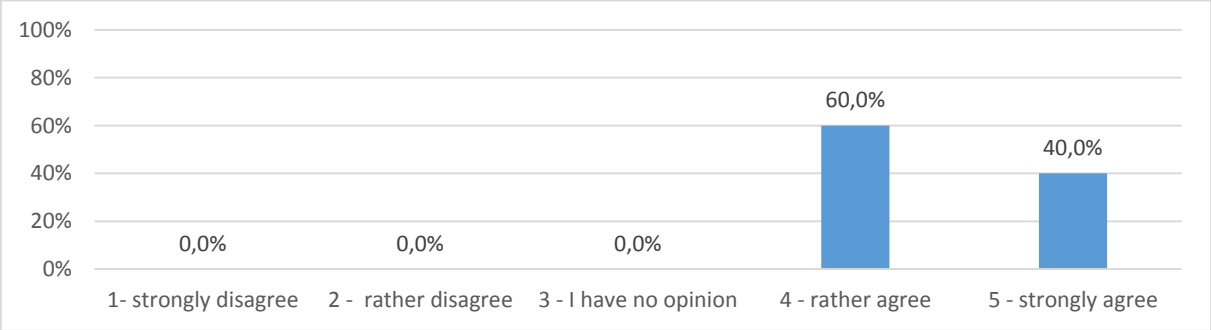


**Figure 22.** The company cares about good relations with other organizations and institutions.

Source: own study.

In the next question, respondents were asked for their opinion on whether they thought the company was vigilant about fair competition. 2.5% of respondents did not have an opinion on this issue, while 60% of respondents answered "rather agree" and 37.5% of respondents chose the answer "strongly agree".

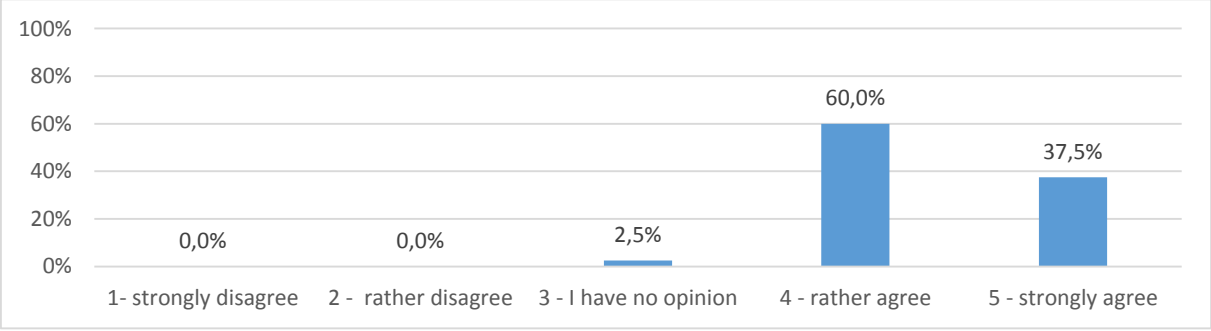


**Figure 23.** The company ensures that the principles of fair competition are observed.

Source: own study.

The last question in the area of fair operating practice was whether the company cares about respecting intellectual property works. 55% of respondents answered "rather agree," 40% of people marked the answer "strongly agree," while 5% of people have no opinion on the subject.

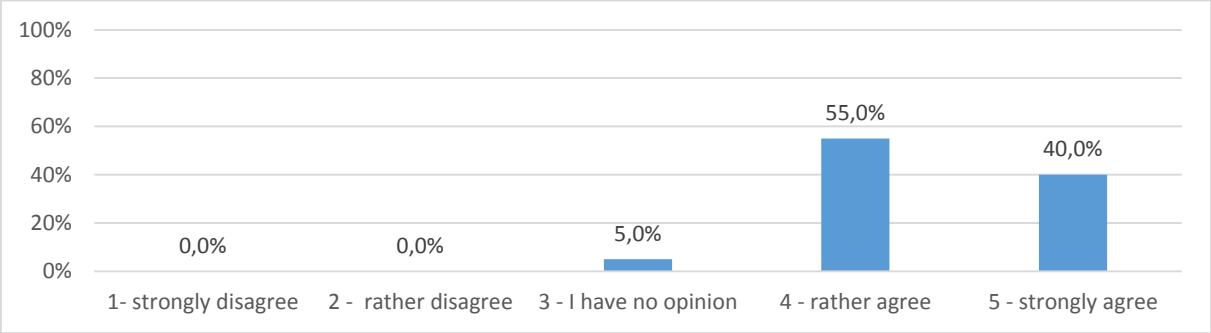


**Figure 24.** The company is committed to respecting the works of intellectual property.

Source: own study.

Another area of analysis is consumer issues. Respondents were asked to express their opinion on whether the company cares about customer data protection and security. 60% of respondents answered that they rather agreed with this statement, while 40% strongly agreed.

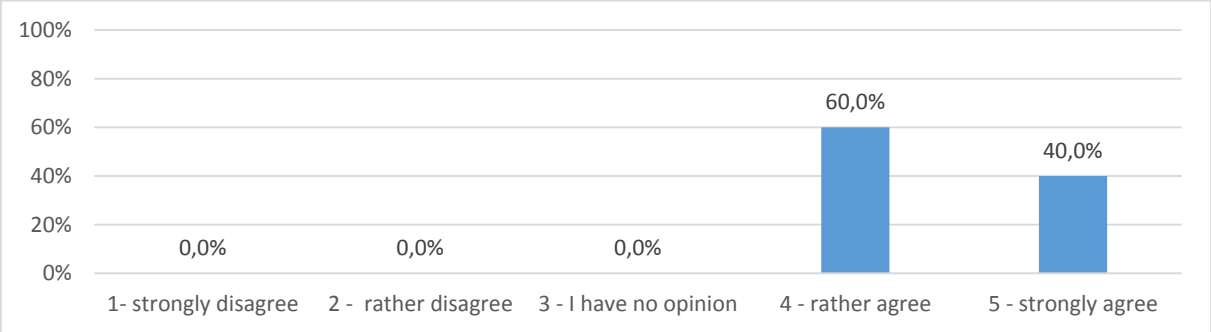


**Figure 25.** The company is committed to protecting customers' personal data and their security.

Source: own study.

In the next question, employees were asked whether, in their opinion, the company. ensures that fair marketing practices are followed. 55% of respondents agreed with this statement, 37.5% of respondents strongly agreed, while 7.5% had no opinion on the subject.

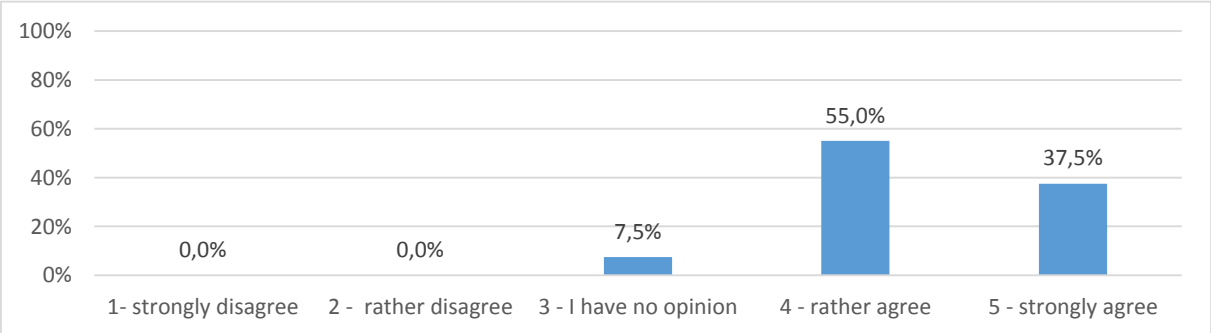


**Figure 26.** The company ensures that fair marketing practices are followed.

Source: own study.

Another question referred to whether the surveyed company ensures that the products it sells are of high quality by meeting norms and standards and do not endanger the life and health of consumers. 60% of respondents answered "rather agree," while the remaining 40% of people marked the answer "strongly agree".

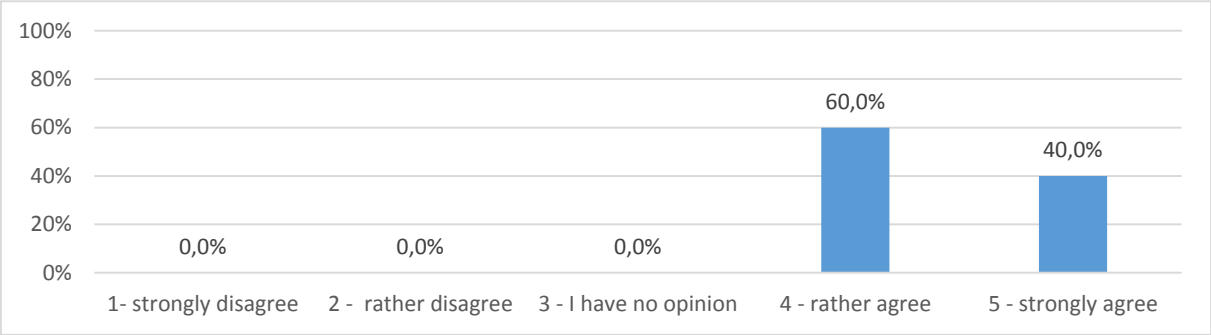


**Figure 27.** The company ensures that the products sold are of high quality by meeting norms and standards and do not endanger the lives and health of consumers.

Source: own study.

In a question on consumer issues, respondents were asked about whether, in their opinion, the company provides customer service and allows customers to return and complain about purchased goods. 55% of respondents answered "strongly agree," while the remaining 45% of people chose the answer "rather agree".

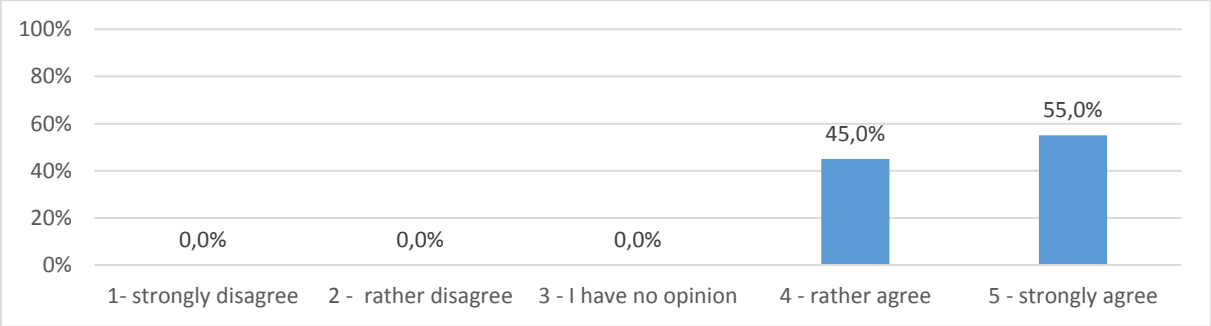


**Figure 28.** The company provides customer service and allows customers to return and claim purchased goods.

Source: own study.

The final area was social engagement and community development. Respondents were asked whether, in their opinion, the company consults with the local community on investment and development issues. 40% of respondents selected the answer "strongly agree," while 35% marked the answer "rather agree," and 25% of respondents had no opinion on the subject.

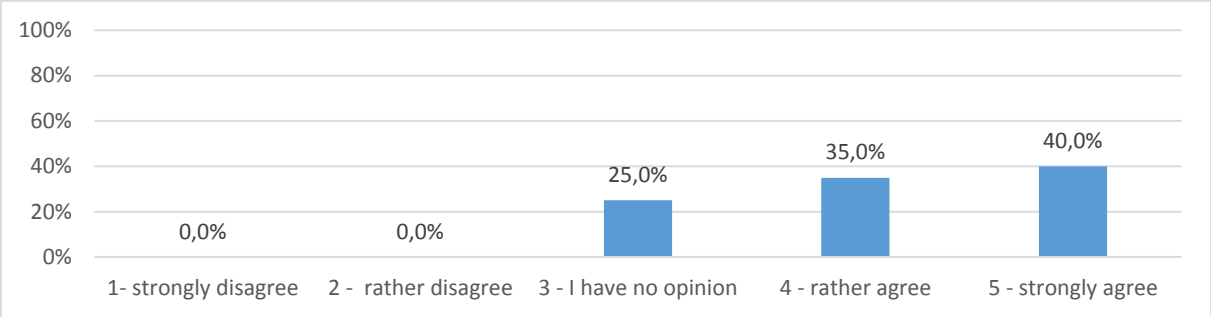


**Figure 29.** The company consults with the local community on investment and development issues.

Source: own study.

In the next question, respondents were asked whether they thought the company provides financial or in-kind support to local associations, schools and organizations. 45% of respondents marked the answer "rather agree," while 42.5% of people selected the answer "strongly agree". 12.5% of respondents had no opinion on the subject.

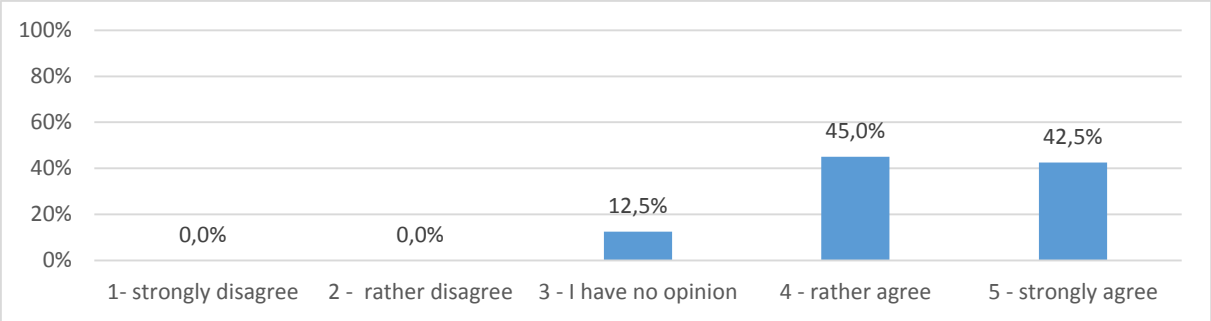


**Figure 30.** The company donates financial or in-kind support to local associations, schools and organizations.

Source: own study.

In this statement, respondents were asked to answer whether the company subsidizes actions to reduce unemployment. 40% of respondents strongly agree with this statement, while 12.5% have no opinion on the subject.

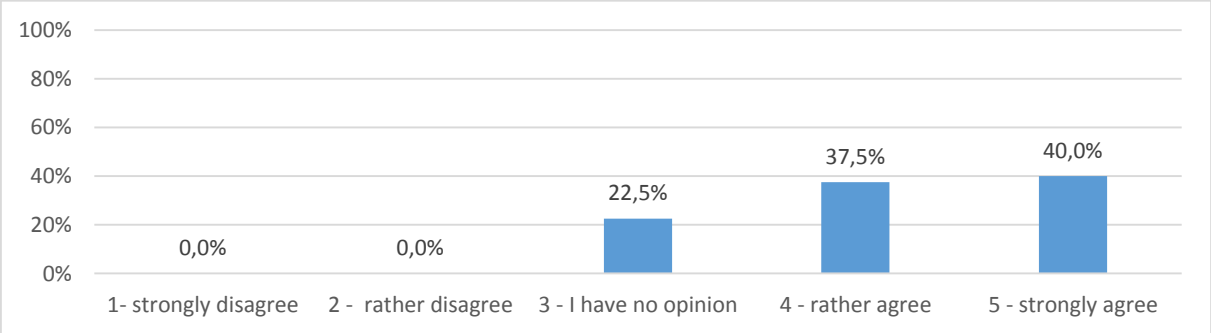


**Figure 31.** The company is subsidizing campaigns to reduce unemployment.

Source: own study.

The last question asked whether, according to respondents, the company organizes internships, apprenticeships for high school and college students. 57.5% of respondents marked the answer "strongly agree," while 37.5% chose the answer "rather agree." Only 5% of respondents had no opinion on the subject.

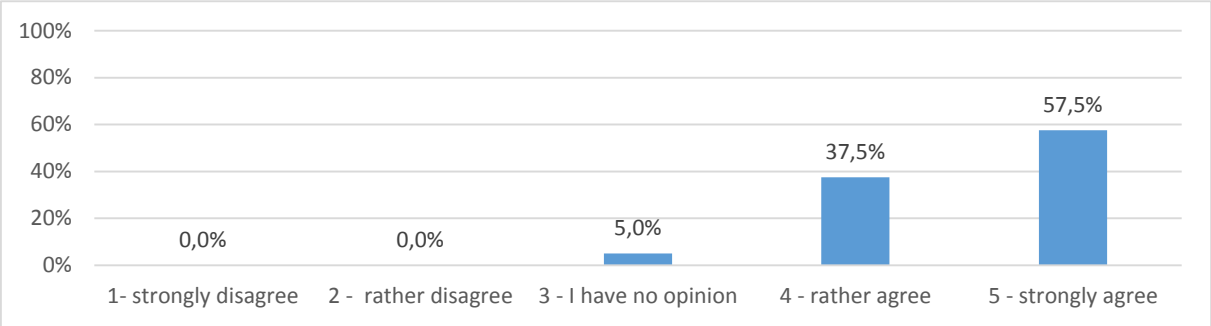


**Figure 32.** The company organizes internships, apprenticeships for high school and college students. Source: own study.

Based on the results presented, it can be concluded that the company is committed to the concept of corporate social responsibility. The company's management is trying to introduce more and more activities to satisfy various stakeholder groups and is trying to reduce the negative impact on the environment by investing in green solutions.

## 5. Conclusions and recommendations

Based on the survey, it can be concluded that:

- The company has implemented the concept of social responsibility.
- Among other things, the surveyed company has implemented a code of ethics, regulations on occupational health and safety, as well as respects the rights and freedoms of each employee in the field of anti-discrimination and anti-bullying thus contributing to the growth of employee confidence in the company. Such actions have a direct impact on increasing the commitment and motivation of employees, improve their productivity, reduce absenteeism, but most importantly reduce employee turnover. An appreciated employee identifies more with the organization which also has an impact on the company's image.
- Implemented corporate social responsibility activities in the organization result in the company's involvement in activities aimed at reducing the negative impact on the environment. The company is trying to reduce its negative impact on the environment, among other things, through the use of innovative solutions, i.e.: photovoltaic panels, a fleet of hybrid cars, segregation of garbage and bulky waste, replacement of lighting with LED lighting, as well as planting new vegetation on company-owned land.

- There is a low level of knowledge about the implemented CSR concept among employees over the age of 40, which may result in reluctance to implement innovative solutions, or low activity in social responsibility activities in the surveyed organization.

In order to increase employees' awareness of the concept of social responsibility, it would be important to introduce a series of training courses aimed at expanding employees' knowledge in this area. This knowledge can contribute to an increase in the involvement of employees in active activities for the benefit of the enterprise, the local community and an increase in awareness in the area of environmental protection.

## 6. Conclusion

Nowadays, it is becoming more and more common for companies to implement the concept of social responsibility of business. This orientation is due not only to the effect of globalization or increased competitiveness, but also to changes in economic and social conditions. Thanks to this idea, profit maximization is no longer the most important issue for shareholders. Companies are paying more and more attention to the issues of building relationships with the environment, stakeholder relations and the widely understood social interest.

The purpose of the article was an attempt to present the role of social responsibility and its relationship to the development of the organization using a selected example.

The article assumes the thesis that the implementation of the concept of corporate social responsibility contributes to the development of the enterprise. The assumed thesis has been proven. Based on the research, it can be concluded that the implementation of the CSR concept to the organization has contributed to the improvement of working conditions among the company's employees through, among other things, the implementation of a code of ethics, the Company's Social Benefits Fund or timely payment of salaries, as well as concern for the safety of employees through the organization's compliance with health and safety regulations, labor law, human rights. It can also be said that the implementation of the concept of social responsibility has contributed to improving the organization's image. By implementing not only measures to ensure stable employment of employees, but also allowing consumers to return and complain about goods purchased from the company, as well as concern that products offered by the company come only from materials from legal sources and meet all the necessary norms and standards imposed by the government and the European Union. As a result, the company's image is better perceived by various stakeholder groups. Based on the research, it was concluded that the implementation of the CSR concept in the enterprise contributed to taking measures aimed at, reducing the negative impact on the environment. The surveyed enterprise has taken measures such as installing photovoltaic panels in its premises, replacing lighting with LED lighting, investing in hybrid company cars, cleaning up and planting vegetation on

the company's premises, as well as segregating waste, etc. It is worth noting that the CSR concept is related to long-term activities, and the effects of these activities are visible in the long term. It can be concluded that the surveyed enterprise actively implements corporate social responsibility activities.

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# THE EUROPEAN PATENT WITH UNITARY EFFECT. OPPORTUNITIES AND LIMITATIONS FOR INNOVATIVE PROJECTS

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**Introduction/background**: in 2023 organizations can apply for a European patent with unitary effect in 25 European Union countries. The system brings many simplifications to obtaining protection, but it also comes with some limitations.
**Aim of the paper**: the aim is to explore the possibilities and limitations that a European patent with unitary effect can potentially give to organizations concerning the innovative solutions they obtain within their projects.
**Materials and methods**: this paper uses the formal and dogmatic method typical of legal sciences. It examines the international and EU laws and legal literature.
**Results and conclusions**: the procedure of obtaining a unitary patent will be faster, simpler, and cheaper, as translations into the official languages of all granting countries will no longer be necessary. A Unified Patent Court will be one institution to decide patent cases, so a unified and consistent line of jurisprudence can also be expected. However, there are some significant flaws in the system – there is complicated construction, peculiar language discrimination in registration and court proceedings, the problem of equal access to the court, and arguments about the system's cost-effectiveness, mainly for entities from rich and technologically advanced member states. Taking advantage of the unitary patent will require a rethink, increased vigilance, and caution from innovation project managers, as well as a calculation of potential gains and losses.

**Keywords:** European patent with unitary effect, project management, intellectual property protection.

## 1. Introduction

Projects are becoming more specialized and their success depends more and more on specific knowledge and skills in a given field. This, in turn, is closely related to the issue of intellectual property – its creation or use of the existing one, at almost every stage of the project: from conceptualization of the idea, through research and development activities, to obtaining the product (WIPO, 2005; Negruta, Naftanaila, 2011). Especially in innovative

business projects, we deal with many results in the form of intellectual property items, i.e., works, trade secrets, utility models, industrial designs, and inventions. From the point of view of the organization that manages the project, the most desirable will be those that will help achieve the assumed goal and respond to a specific existing problem. Often, however, the key to success will be the appropriate and effective protection of the project's products. The system of the legal protection of intellectual property provides support here, thanks to which the organization has a chance to enter the market with a product that is ahead of the competition.

The subject of interest of this paper is the protection of an invention by patent – a property right giving exclusivity in the use and disposal. However, this work focuses on the mechanism adopted by some member states of the European Union, which gives possibility to obtain protection in many countries simultaneously with a simplified and faster procedure. Legal analyses in this field have already been carried out in the literature, especially when the relevant law was passed in 2013. However, only now, in 2023, will they enter into force, so it will be possible to start applying them. It is, therefore, worth re-examining these regulations and the current, finally shaped solutions, taking into account the anticipated opportunities and limitations. As it turns out, these opportunities are promising, but the voices of criticism cannot go unnoticed. Therefore, the purpose of the work is to analyze them from the perspective of organizations that would be interested in obtaining patent protection for their innovative solutions at the European level, but with a unitary effect in all countries participating in the system.

## 2. Patent and its role in an organization

Intellectual property is an important component of the organization's resources, having a significant impact on its functioning and projects undertaken. Effective intellectual property management contributes to the commercial success of implemented projects, including the possibility of transferring their results to practice. On a macro scale, however, the number of registered and cited patents says a lot about the level of innovation of a given economy. Intangible goods, which are the result of creative, inventive, scientific, or design activities of an organization may arise at different stages of the project and be a result of various intentional or accidental actions. Some of these intellectual products of design work can acquire legal protection if they meet some fixed criteria: they are, for example, creative (they are works within the meaning of copyright law) or, what is of interest in this paper, namely, the invention.

Based on the provisions of the European Patent Convention of 1973 (EPC), an invention is a new technical solution (Art. 54), should involve an inventive step (Art. 56), and is susceptible of industrial application (Art. 57). The novelty of the solution means that it does not form part of state of the art; it cannot be known anywhere in the world before (Sieńczyło-Chlabicz, Banasiuk, Zawadzka, 2013). In addition, the solution must have an inventive level and therefore be groundbreaking and surprising even for a skilled expert; it cannot be clichéd or routine use of technical knowledge (Nowińska, Promińska, du Vall, 2008). Industrial application, on the other hand, should be understood as a feature thanks to which, on the basis of the invention, a product may be obtained or a method used, in the technical sense, in any industrial activity, including agriculture. In other words, the invention must be possible to implement in industrial production, repeatable and useful (Kostański, 2010), regardless of its type. It is worth knowing that there are different categories of inventions, that is: products (substances or mixtures), devices (e.g., machines), methods (methods of production), and applications (new use of already known products). However, discoveries, mathematical methods, works, plans, games, or computer programs cannot be considered an invention (Art. 52).

Constantly increasing costs and labour inputs for innovative activity and the risk associated with the subsequent implementation of its effects can be compensated by the state by granting the exclusive right to economic exploitation of innovations. The legal protection of an invention consists of its registration in the appropriate state institution (patent office), which may grant a patent after careful examination of whether the invention meets the criteria mentioned above. Of course, the organization that manages the project should be aware of them, especially since the identification of possible patentability of the emerging solutions takes place during research and development activities. A patent is a document confirming the property right excluding other entities from the possibility of using the invention, creating and selling products based on it, methods of use for a maximum of 20 years, provided that recurring payments are made. The scope of the patent is defined in the patent claims contained in the patent description, and it is from them that the exclusivity for the patent owner results, and not from the essence of the invention (Kostański, 2010). The use of the invention by other entities is possible only with the rightsholder's consent expressed in the form of an agreement authorizing the use of the invention (license agreement). The subjective right can be sold as well. Therefore, patents seem to be of significant importance because they promote innovation, motivate further discoveries and develop ideas, and diffuse knowledge (Furman, Nagler, Watzinger, 2018). Obtaining a patent makes it easier to recover expenditures for the development and implementation of solutions, as well as to gain funds for further projects. This monopoly is supposed to guarantee the patent owner full control and benefit from the invention he owns, which can bring economic and competitive advantages if appropriately managed (Ernst, Fisher, 2014). Patents are also sometimes used as specific measures of innovation, which, being part of an organization's rich portfolio, constitute

specific information addressed to external stakeholders, e.g., investors (Acs, Anselin, Varga, 2002). They are also a significant entry barrier for competitors, i.e., patents are a source of competitive advantage. An organization holding this exclusive right can exploit the product covered by it cheaper than those who have to pay license fees (Koczerga, 2011).

It is also worth mentioning some risks associated with patenting one's inventions. Due to the need for a detailed description of their essence and functionality in the patent application, all sorts of technical information regarding the invention will become public. In addition, patent proceedings take a relatively long time before getting a granting or refusing decision, can be costly because of the necessity of application and maintenance fees, and, at the same time, there is no guarantee that it will bring any benefits to the owner. In addition, there is also the need to control compliance with the patent by third parties. An organization considering applying for a patent should take these arguments into account.

One of the decisions, the implications of which will determine the profitability of maintaining a patent, is the choice of the territorial scope of the desired patent protection. It is because it's territorially limited, i.e., granting a patent in one country does not give the same protection in another. This means that there are various national and regional markets to which patent applications can be directed (Grandstrand, Holgersson, 2014). In the case of organizations wishing to commercialize the inventive results of their projects in more than one country, they can file separate applications in each selected country or use the more practical application at the regional office, in particular at the European Patent Office (EPO, established based on the EPC). However, the procedure is expensive and complicated due to the scope of the examinations to be carried out. In other words, each Member State indicated in the patent application must carry out its prescribed validation procedure.

Another way of transnational protection that extends to the area of the European Union's single market is the European patent with unitary effect (hereafter the unitary patent), the validity of which extends to the territory of all member states participating in the system.

## 3. The concept of a patent with unitary effect

Unification of the patent law system in the European Union has been the subject of work of European institutions and Member States many times over the last few decades (more precisely, since signing of the EPC in 1973). The aim was to construct such a right that would protect the invention throughout the Community and would not require separate patent applications in the Member States. Undoubtedly, this concept rightly assumes that in the conditions of the EU single market, the fragmentation and complexity of the patent protection system is not conducive to the competitiveness of the EU economy in relation to major players in the global economy. Therefore, the possibility of protecting an invention

throughout the EU with a single application should be an obvious solution that is simpler, faster, less costly and developmental. Moreover, similar solutions already exist in the EU for trademarks and designs (Almeida, Oliveira e Costa, 2018).

This is the function of the unitary patent, which may be granted by the European Patent Office for an invention that meets the conditions set out in previously cited provisions of Art. 52-57 of EPC. Although the procedure is to take place in the same regional institution granting the European patent, thanks to the Agreement on the Unified Patent Court (AUPC) concluded in 2013 and the relevant EU regulations (Regulation 1257/2012 and 1260/2012), it will be possible to ensure uniform protection and guarantee the same effect in all signatory countries, without the need to validate a European patent in national patent offices. However, it should be emphasized that the discussed regulation is not fully a part of EU's secondary law, but is an international agreement concluded between some Member States and, to enter into force, it is required ratification by at least 13 countries, including France and Germany, which have the most patent applications (Nowicka, 2013). Therefore, we are not dealing with a patent of the European Union, because it is not a party to the Agreement. The regulation assumes, however, that at the request of the rightsholder, the patent has effect in the territories of the Member States participating in the so-called enhanced cooperation, i.e. those that have signed the AUPC. The accession is therefore voluntary. Hence Croatia, Spain and Poland, which have not signed the Agreement, remain outside the system. Inventors from these countries (and actually others from around the world) will still be able to apply for a European patent under the existing rules within EPO (Fox and Hoffmann, 2022), and also to obtain unitary patents in those countries where European patents will have unitary effect (Nowicka, 2013).

The Agreement is about to enter into force on June 1, 2023, and thus the Unified Patent Court (UPC) will finally begin its operations (UPC, 2022). This institution is of key importance here, because the uniformity that a patent is to have must also refer to its judicial protection and relevant case-law. This court will have exclusive jurisdiction in matters relating to the unitary patent, including, in particular, infringements in the territory of the countries participating in the system (Skubisz, 2013), invalidation of the patent, etc. It is therefore a single, common and specialized court that will settle European patent law disputes replacing national courts in this respect. The procedure is two-stage. The Court of First Instance is decentralized and divided into central (Paris and Munich), regional (Nordic-Baltic division for Estonia, Latvia, Lithuania and Sweden located in Stockholm) and local divisions located in Member States (currently Austria, Belgium, Denmark, Finland, France, Germany, Italy, the Netherlands, Portugal and Slovenia [Decision, 2022]). A country can host up to four local divisions, and a group of two or more states can set a regional division. Thanks to this solution, proceedings can be conducted in principle in the own country of the party and in the official language of the hosting country. If it is a court for a regional division – in the language chosen by the sharing states. Host countries may also decide to admit the

official language of the UPC or the language in which the patent was granted as the language of the proceedings. In the central division, proceedings will be conducted in the language in which the EPO granted the patent (Art. 49, AUPC). The Court of Appeal is located in Luxembourg, and the language of the proceedings will be the one in which the case was heard at first instance, or the language in which the patent was granted (Art. 50, AUPC).

It is also important to pay attention to the competencies of individual divisions. In general, in accordance with Art. 33 of AUPC, e.g., actions for revocation of patents shall be brought before the central division. Local and regional divisions are hearing infringement actions at the place where the infringing act took place or where the defendant is based. The central division may also hear infringement actions in cases where an action could have been brought in a local or regional division, but a member state does not have one.

The essence of the unitary patent is its effectiveness in all member states (Regulation 1257/2012, Art. 3). After filling a patent application, together with an application for granting a unitary effect, and successful completion of the procedure at the EPO, the unitary patent will be automatically validated in all the participating member states. Therefore, it will not be a new type of exclusive right, but the same one with an extended scope (Szkaradek, 2020). Applying for a unitary status will also be possible for patents granted under the standard European procedure, including those remaining in the registration process (Fox, Hoffmann, 2022). Once granted, the unitary patent will be recognized as an object of property in each member state as a national patent (Art. 7). The unitary patent will co-exist with national patents of EPC signatory countries that are not EU members or which, although EU members, have not joined the unitary patent system. Moreover, it is not intended to replace national patents individually granted by Member States (Almeida, Oliveira e Costa, 2018).

Another issue that needs to be emphasized is the cost of obtaining a unitary European patent. In the current EPO system, it is necessary to bear the costs of translating patent applications into national languages of countries where protection is expected. In the case of a unitary patent, this will not be necessary as the application for registration will have to be submitted in English if the proceedings at the EPO will be in French or German, or in any official language of a Member State which is an official language of the Union if the language of the proceedings at the EPO is English (Regulation 1260/2012, Art. 6). However, such regulation is intended to be only temporary until high-quality (i.e., non-automated) machine translations into all EU official languages are developed. The intention expressed in Art. 3 is that in the future an application for registration can be submitted to one of them. It is worth adding that due to the protection of inventions, support of technological progress and making the system attractive to everyone, it will be possible to apply for reimbursement of translation costs up to a specified limit. Small and medium-sized enterprises, natural persons, non-profit organizations and even universities will be eligible (Art. 5).

The second category of financial burdens includes the costs necessary to keep the patent in force. Let's remind that the legal protection of an invention is possible only on the condition of paying recurring fees, otherwise the patent expires. According to Fox and Hoffmann (2022), such a cost in the case of a unitary patent will be approximately equivalent to the cost of maintaining the conventional European patent with indication of protection in four of the member states.

The system described above appears to be a response to the long-standing expectation of creating unitary patent protection in the European Union. Of course, this mechanism is a consequence of the unification of various economic areas and issues within the Single Market. Businesses and scientific entities will thus be able to apply for a patent for their invention, which will be valid in all countries (in practice, excluding a few of them), there will be a unified judicial body dedicated to it, and the whole procedure is supposed to be faster, simpler and cheaper. It has its obvious advantages, but these actors should also be aware of the limitations, which appear to be significant.

## 4. Opportunities and limitations of application of the unitary patent

The above short analysis of the regulation of the European patent with unitary effect prompts the search for answers to crucial questions about the possibilities and limitations of its use by an organization implementing innovative projects and wishing to obtain the protection of exclusive rights with a broader than national scope.

The creation of a unitary patent certainly provides its holders with protection over a large territory, even in 25 countries of the European Union. Just one application submitted in one of the official languages of the EPO (English, French, or German) is enough to gain protection in all Member States, as well as the possibility of broader and more effective commercialization of solutions beyond the borders of one's country. This should make it easier for rightsholders to manage their industrial property. It should also be much cheaper since there are no costs of translation into the national languages of all countries where protection is sought; it suffices to limit oneself to the official language of the EPO. As already mentioned, entities such as SMEs, universities, or research institutions may apply for reimbursement of translation costs up to a certain amount. In addition, the EPO is to carry out a much simpler, less formalized, and faster procedure that does not require validation at national levels.

However, the territorial unity of a patent has more questionable consequences. First, in member states where national patents naturally vastly outnumbered European patents, there will automatically be more patents that have been given a unified effect from the outside, as it were. Statistics for 2021 show (Patent Index, 2021) that of all patent applications

registered at the EPO from EU countries (67713), more than half (36506 – 54%) come from France and Germany, with a median value of 286. This means that organizations coming from countries with significantly fewer applications (in 2021. the number of 1,000 did not exceed as many as 17 countries) and seeking legal protection for their innovative solutions will have to take into account this surge in the additional number of exclusive rights in their R&D work, not only in terms of assessing the patentability of their developed solutions but above all given the threat of possible infringement of an existing European patent with unitary effect (Skubisz, 2013). In other words, rights owners from more technologically developed countries have a potential competitive advantage over those from less advanced countries, limiting development activity and widening disparities. The phenomenon of patent trolling, i.e., the deliberate acquisition and maintenance of patents, which are only disclosed by the right holder with license or compensation claims when the solution in question reaches the market through an unwitting entrepreneur or organization, will also be of significance. The unitary patent system may encourage this phenomenon due to the existence of strong players in the European innovation market located most often in the most technologically advanced and wealthy countries, where most European patent applications originate (Malaga, 2016; Beldas et al., 2014). An additional "incentive" for trolls may also be the language regime and jurisprudential exclusivity of the UPC, which we will look at later in the paper.

Secondly, a European unitary patent as a property right is treated in each participating state as a national patent governed by the patent law of that state if the right holder had its domicile, seat, or principal place of business there at the time of filing. If such a place cannot be determined, the patent is treated as a national patent of the country where the EOP is established (Regulation 1257/2012, Art. 7), in this case, Germany. In practice, this means that an organization from a country not bound by the AUPC or enhanced cooperation, such as Poland, can apply for a European patent with a unitary effect, but the content of that effect will be governed by German law. Thus, the protection will be indeed unitary, but the content of the effects of specific unitary patents will be determined by different laws depending on the place of residence or business (Nowicka, 2013). Thus, following Orfin (2021), it may be said, that the granted exclusivity will be a mixture of uniform effects depending on the laws of the member states. Additionally, activities of the EPO in the field of European patents will partly be subject to EU law, because the unitary effect is regulated by the Regulations, and therefore also to the cognizance of the Court of Justice of the European Union. One can see here the confusion in the construction of the system here, due to the diversity of legal sources, since the other crucial normative basis of the system, i.e., the AUPC, is an international agreement concluded outside the structures of the EU, and therefore outside the control of its institutions, including the CJEU. It seems, therefore, that some broader issues related to fundamental rights, the institutional design of the EU, or the specifics of member states' policies, may be overlooked by the UPC, which, after all, specializes in patent law, not EU law, as does the case-law-rich CJEU. This complexity and multiplicity of application of different sources of

law (EU, international and national) must be assessed as a significant drawback of the adopted patent system with unitary effect, which is a view often found in the literature (Almeida, Oliveira e Costa, 2018; Orfin, 2021; Malaga, 2016).

Given the idea of unifying various aspects of the economy, related institutions, and regulations, the creation of the UPC, a single and specialized patent court, will undoubtedly lead to the unification of jurisprudence, the development of common standards in all participating countries, thereby increasing certainty about the law and its interpretation on the part of right holders (Baldan, Van Zimmeren, 2012). In other words, the settlement of disputes and adjudication of infringements of European patents will take place in a single court instead of independently in national courts, and its rulings will be effective and enforceable in all member states. These common standards should result in a higher level of protection for inventions, which could be a definite advantage not only for patent owners but also for the European Union itself, which will be able to be treated on an equal footing with other economic powers. Nevertheless, it is necessary to point out the problems that are associated with the functioning of the Unified Patent Court.

First of all, there is a constitutional issue in the member states, namely the obligation to completely cede judicial competence in the adjudication of patent rights (and thus private law disputes) to an external, supranational judicial body. For example, in the case of Poland (which has joined the enhanced cooperation), there are significant constitutional obstacles against this, precluding the country from adopting the AUPC. Indeed, it is impossible to reconcile the surrender to an international court, which *de facto* is the UPC, with the content of Article 175 of the Polish Constitution of 1997, which stipulates that the administration of justice in Poland is reserved to the Supreme Court, common courts, administrative courts, and military courts. The Polish Constitutional Tribunal ruled in 2010 that it was unacceptable under Polish law to transfer entirely to an international court the competence of the judiciary in a specific field of cases (Ruling K32/09, 2010). Making an exception in this respect does not seem possible without amending the Constitution, requiring broad political agreement. Therefore, it is unlikely that Polish organizations in the near future will gain the opportunity to register a European patent with a unitary effect also in Poland. Recall that this also applies to Croatian and Spanish entities, which have not joined either the AUPC or the enhanced cooperation. These entities can apply for a unitary patent on the territory of the system's member states, but the benefits of such an arrangement may be debatable. After all, the rights granted are treated as German national patents, the revocation of a patent with unitary effect will mean loss of protection in all countries, and any legal disputes in this regard will be heard by the UPC. At the same time, it must be admitted that the absence of these countries in the system leads to a kind of fragmentation and thus only partially achieves the stated goal of a unitary patent system throughout the EU.

Secondly, the jurisdiction of the UPC is mandatory, and one cannot opt out of it. It has several implications. Proceedings in the first instance will be conducted in one of a dozen local or regional divisions in Europe, while a right holder from a country that does not host a local division or does not share a regional division will have to file a lawsuit or can be sued before the central division. Member states may create new local or regional divisions in the future, but in the current state of affairs (beginning 2023), Bulgaria, Cyprus, Greece, Ireland, Malta, and Romania do not have their own, so proceedings in cases involving organizations from those countries will, from their perspective, be litigated abroad in a foreign court. This, in turn, will generate a certain cost related to participation in the proceedings, issues of procedural representation, and, finally, the need to proceed actually in a foreign language (currently, only eight of the official EU languages are represented, depending on where the court has its central or local division). Organizations from countries participating in regional divisions may be similarly constrained, as, for example, entities from Estonia, Latvia, and Lithuania will have to use a court located in Stockholm, and the language of the proceedings will be English, which, incidentally, will also apply to Swedish litigants. The above implications may raise the question of equality of access to the court on the part of different entities, both those seeking patent protection and those forced to defend their innovations against possible allegations of infringement of someone else's exclusive rights. Consequently, there are also concerns about the right to defense and due process in general. In fact, it is possible to observe a peculiar preference for subjects from those countries whose native languages have been recognized as official languages or as languages of proceedings (Nowicka, 2013; Szkaradek, 2020; Orfin, 2021).

Another linguistic issue in this unitary patent system is that it will be granted in the language in which the application was filed, that is, English, French or German, possibly another official EU language if the proceedings were in English. It will also be available in this version in all participating countries, although additional machine translations into all official EU languages will be provided in the future. At the same time, there is a concern about the possibility of a correct and precise understanding of the invention and patent claims by different organizations and, thus, the scope of protection. The certainty of the law and the solutions achieved within the projects becomes questionable. After all, to avoid encroaching on another's exclusive rights under a patent for an invention, it is necessary to have a precise understanding of the invention's description, specification, and functionality. These, in turn, are disclosed in published, mandatory patent descriptions. Their availability in a foreign language, which uses highly specialized terms and phrases that are not always obvious to understand, can provide problems and confusion. Significantly, this problem seems to have been recognized by France and Germany, who were opposed to narrowing the system to English, while similar concerns from Spain and Italy were at the same time dismissed (PMC, 2016).

The opportunities and limitations of the use of a European patent with the unitary effect presented above should make organizations rethink their strategy concerning their design activities and their intellectual property. It is especially true for those from countries with less patent potential. Taking advantage of the mechanism can be formally, financially, and organizationally challenging, so it requires a detailed review of one's resources, plans, and capabilities, but also a calculation of potential gains and losses. Certainly, however, once the system becomes operational, it will require increased vigilance and caution from innovation project managers.

## 5. Conclusion

Although the European Union has long embodied the idea of a single market, unifying and harmonizing various areas of law, including intellectual property rights, one common EU patent has not yet been achieved. However, there was a need to ensure the EU's competitiveness against economic powers such as the US, China, and Japan. Another approach, therefore, has become the European patent with unitary effect, which is not a new type of exclusive right, but one that already exists within the EPO, and can be given effect in all countries under the relevant EU regulations. It means that an organization wishing to obtain protection for the results of its innovative projects no longer has to expect individual national patents to be granted by the countries indicated in the application for a European patent since the new regulations will make it effective by operation of law in all participating countries. Therefore, the procedure will be faster, simpler, and also cheaper, as translations into the official languages of all granting countries will no longer be necessary. On top of that, a common Unified Patent Court will soon be up and running to decide patent cases, so a unified and consistent line of jurisprudence can also be expected.

The analysis carried out in this work shows that the system, despite the validity of its stated goals and these listed obvious advantages, also has significant drawbacks. It has been shown that the construction of the system is quite complicated in several aspects and can pose problems for entities whose activities revolve around the sphere of patent law. First and foremost, among these is the peculiar linguistic discrimination in application proceedings before the EPO (honoring only three languages as official) and judicial proceedings before the UPC (languages of countries hosting local divisions of the court; language chosen by countries sharing a regional division). In addition, the locations of the divisions of the courts where adjudications are to be made are only in some countries (although the creation of local ones will be possible in any), and in some situations, the regulations reserve the jurisdiction of the central division. Finally, and not to be overlooked, are arguments about the cost-effectiveness of the entire system, primarily for active entities from the largest and most

technologically advanced EU countries at the expense of those from which there are far fewer European patent applications.

There are somewhat more problems of a typically legal nature (concerning, e.g., the principles of the single market and the free movement of goods or the cognition of the CJEU) nonetheless, they are beyond the scope of analysis in this work and have no direct and clear impact on organizations seeking patent protection for their innovative solutions. It seems a good idea to carry out future analysis to examine the effect of the system already in operation to verify the concerns raised above.

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# IMPACT OF THE COVID-19 PANDEMIC ON THE MANAGEMENT OF A SELECTED TREATMENT FACILITY

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**Introduction/background**: Following the SARS-CoV-2 virus outbreak, the goals of the health care system had to be adapted to the changed environment to meet the health care needs of patients and the expectations of Polish health care workers for safe working conditions in emergency situations. The need for change concerning the health workforce, is mainly due to organisational and economic changes affecting health care systems worldwide and affects all forms of health care. The aim of this paper is to determine the impact of the COVID-19 pandemic on the operation of a selected treatment facility. The research resulted in the author's master's thesis.

**Aim of the paper**: The aim of the paper is to determine the changes that may have occurred in the operation of the treatment facility under investigation, influenced by the events taking place as a result of the COVID-19 coronavirus pandemic, and to analyse the assessment of the staff of the treatment facility before and during the COVID-19 pandemic.

**Materials and methods**: Literature analysis, analysis of source materials (internal), survey method - technique: indirect survey, tool: survey questionnaire.

**Results and conclusions**: The COVID-19 pandemic showed the state of the treatment facilities and the measures taken to cope with the new operating conditions. It is important to address staff shortages: nurses, doctors, economists trained in health system administration. Deficiencies in the health care system were revealed. Working in an environment with a lack of equipment and personnel forces changes in treatment methods. The application of standard treatment methods, developed under normal conditions, turns out to be either suboptimal to protect life and health or impossible. The most obvious conclusion is the lack of equipment, which occurs when the practitioner does not have the necessary tools or protective equipment that are formally authorised for medical use. Another of the identified frailties is the lack of adequate preparation of staff to work under stressful and even 'combative' conditions, contributing to staff overload, which may result in staff wanting to change jobs. Another finding is the lack of a developed procedure in terms of storage policy, which has a significant impact on the shortage of medical equipment in the medical facility. In addition, the sudden increase in the number of patients could have been a reason for employees to feel increased stress or a desire to change jobs. Such feelings, on the other hand, may have been the result of a lack of knowledge regarding the medical management of SARS-COV-2 coronavirus patients, in which certain risky emergency procedures were reserved for specialists or specially trained persons (e.g. intubation).

**Keywords:** treatment facility, COVID-19, pandemic, change management, public management.

## 1. Introduction

The World Health Organisation (WHO) on 11 March 2020 announced that the SARS-CoV-2 virus, which causes COVID-19, i.e. acute respiratory distress syndrome leading to severe pneumonia, is pandemic in nature.

The aim of the paper is to show the changes in the management and functioning of the selected treatment facility, based on the introduced legal acts, orders and recommendations - since the announcement of the pandemic - which influenced the working conditions of the medical staff in the studied facility. The changes and conclusions formulated on the basis of the analysis may contribute to the introduction of sustainable changes in the functioning of other medical facilities in Poland and facilitate possible adaptation to future health threats.

## 2. Characteristics of the chosen treatment facility

Centrum Medyczne Silesiana Sp. z o. o. in Zabrze is a group of specialised medical facilities. It has been operating in the medical market for over 20 years, expanding the scope of its treatment activities from year to year. At present, the Medical Centre "SILESIANA" is one of the largest units specialising in medical care on the territory of Silesia. The company employs about 150 people, has qualified personnel, and modern equipment; it also cooperates with many private medical care entities.

Centrum Medyczne Silesiana Sp. z o. o. provides its services in three main areas:

- **Zabrze Hospital**, which has within its structure: Ward of Orthopaedics and Traumatology of the Musculoskeletal System, Ward of General Surgery and Ward of Gynaecology;
- Outpatient Clinic Zabrze, including: Gynaecology Outpatient Clinic, Urology Outpatient Clinic, Cardiology Outpatient Clinic, Orthopaedics and Traumatology Outpatient Clinic, General Surgery Outpatient Clinic and Otolaryngology Outpatient Clinic. The Silesian Proctology Centre is also located in Zabrze, as well as the following laboratories: X-ray, ultrasound, cardiac ultrasound, exercise testing, HOLTER;

- Outpatient Clinic Bytom, including: Primary Health Care Outpatient Clinic for children and adults, Gynaecology Outpatient Clinic, Neurology Outpatient Clinic, General Surgery Outpatient Clinic, Vascular Surgery Outpatient Clinic, Paediatric Surgery Outpatient Clinic, Otolaryngology Outpatient Clinic, Dermatology Outpatient Clinic, Orthopaedics and Traumatology Outpatient Clinic. The following laboratories are also located in Bytom: ultrasound, ECG and Spirometry. Consultation services with a dietician are also provided here.

Both of the above Clinics also provide laboratory testing services.

These services are provided both commercially and under contract with the National Health Fund.

## 3. Research methodology

In order to determine the impact of the COVID-19 pandemic on the operation of the selected treatment facility and to investigate how the treatment facility is currently functioning, it was necessary to develop an appropriate theoretical research model from which a research tool was developed.

### 3.1. Research model

The model developed consists of four variables: background variables (also known as input variables), independent variables, dependent variables and catalysing variables.

In the presented model, background variables include such elements as: legal regulations for the operation of treatment facilities in Poland, peculiarities of the operation of public organisations in Poland, specificities of the operation of treatment facilities in Poland, modification of rules during the pandemic.

Independent variables in the developed model included: work organisation in treatment facilities during the COVID-19 pandemic, the number of on-call duties, perception of the performance of professional duties by treatment facility staff, crisis management rules during COVID-19, and the quantity of staff employed.

The following elements were used as dependent variables: staff attitudes towards the profession, attitudes of treatment facility staff towards the profession, staff stress levels, management actions of treatment facilities as dictated by the COVID-19 pandemic outbreak, introduction of measures to prevent the spread of the virus, analysis of impediments to the operation of treatment facilities during the COVID-19 pandemic, level of work disorganisation at treatment facilities during the COVID-19 pandemic, problem of staff shortages at treatment facilities as a result of the COVID-19 pandemic.

In contrast, the following were taken as catalysing variables: size of the treatment facility, activity profile, number of employees, legal status of the treatment facility.

The development of the model was aimed at facilitating the work involved in the preparation of marketing research and, in particular, the design of the research tool.

### 3.2. Preparation of the research

Due to the fact that the "Silesiana" Medical Centre in Zabrze has not to date conducted research on the impact of COVID-19 on the operation of the facility, as well as research determining customer perceptions of the facility, there was no secondary data that would be useful for the research undertaken. It was therefore necessary to obtain data from primary research.

The aim of the research conducted was:

- to identify changes that may have occurred in the operation of the treatment facility under investigation, influenced by events occurring as a result of the COVID-19 coronavirus pandemic,
- analysis of the assessment of treatment facility staff before and during the COVID-19 pandemic.

Four scopes of research were distinguished:

- subject of the study is employees of the "Silesiana" Medical Centre treatment facility,
- scope of the research is the treatment facility, which is a group of specialised medical facilities in Zabrze,
- spatial scope of the research is the province of Silesia, specifically the cities of Zabrze and Bytom,
- timeframe of the study covers the period III-IV 2022.

Based on the analysis of the company's internal documentation and on the basis of the theoretical research model, the following research hypotheses were put forward:

H1: There has been disorganisation of work at the selected treatment facility.

H2: Online consultations has become an alternative to existing service provision.

H3: The pandemic has contributed to many difficulties in doing the job.

H4: The pandemic period highlighted staff shortages.

Primary sources were used in the research. A survey was considered the most convenient research method, while a survey questionnaire was the research tool. The units of the study were employees of the treatment facility (30 people).

### 3.3. Research tool

The research tool was a questionnaire developed on the basis of the following research questions:

Q1: Have the changes introduced due to the COVID-19 coronavirus pandemic caused disorganisation of work? This group of questions related to hypothesis H1 and included questions numbered 1-10 (1: The concept of work is familiar to you; 2: Working on a ward with COVID-19 patients significantly reduced the quality level of your work; 3: After the outbreak of the COVID-19 pandemic, the scope of your responsibilities changed; 4: The length of your on-duty time was extended; 5: The workplace adjusted the workplace to ensure safety; 6: Your salary before the pandemic period was satisfactory; 7: Your salary is adequate for the scope of your duties; 8: The pandemic period significantly affected your salary; 9: The number of patients hospitalised in the ward has increased; 10: The workplace has trained its employees on the safety of working around SARS COV-2 patients).

Q2: Have online consultations become an alternative to the existing service provision? This group of questions related to hypothesis H2 and included questions number 11-20 (11: You provide online consultation services in exchange for a traditional appointment; 12: You are willing to provide online consultation services; 13: The workplace has provided training on how to provide online consultation; 14: You have used online consultation services; 15: Online consultation has replaced most traditional medical appointments; 16: Patients reported their dissatisfaction due to the deterioration in the quality of services/lack of availability of medical services; 17: Online consultations are an efficient way of providing services; 18: Online consultations have reduced the waiting period for medical advice; 19: It is possible to replace the traditional visit with an online consultation in the future; 20: By providing an online consultation service you feel safer).

Q3: Did the COVID-19 pandemic contribute to a number of difficulties during your work? This group of questions referred to hypothesis H3 and included questions number 21-30 (21: The safety measures used, e.g. masks, suits do not allow for proper work; 22: The medical facility lacks basic materials and tools to perform work; 23: The medical equipment is missing from the workplace; 24: More fatigue is felt at the end of the shift than before the outbreak of the COVID-19 coronavirus pandemic; 25: Due to work during the pandemic, the amount of medical documentation has increased; 26: There has been an increase in the amount of medical work with patients during the pandemic; 27: You have been seconded by your employer to another workplace; 28: You often encounter deaths in the workplace; 29: You have felt a deterioration in your mental state due to working during the pandemic; 30: You have been provided with psychological support due to working under pandemic conditions).

Q4: Did the duration of the COVID-19 pandemic contribute to staff shortages? This group of questions related to hypothesis H1 and included questions numbered 31-40 (31: Your level of motivation to work is the same as it was before the pandemic outbreak; 32: You have thoughts of changing job; 33: Working in a "covid" ward is characterised by greater responsibility; 34: Duties in a "covid" ward are associated with increased stress; 35: You fear

infection with the SARS COV-2 virus while on duty; 36: You have used sick pay more often than usual in connection with your work in the "covid" ward; 37: Your use of sick pay has been related to your fear of contracting the SARS COV-2 virus; 38: You work in several workplaces; 39: Your employer tried to recruit new employees during the pandemic period; 40: The following feelings accompany you during your shift in the "covid" ward: nervousness, satisfaction, anxiety, irritation, fear, helplessness, commitment).

The main questions were preceded by metric questions.

A pilot study to verify the research questions and hypotheses posed, as well as the construction of the final version of the survey instrument, was carried out on paper and distributed at the facility at the beginning of March 2022.

When the responses were analysed, it was noted that 30 questionnaires were correctly completed, so the effectiveness of the survey tool was 100%. No incorrectly completed or unfilled questionnaires were collected. The questionnaire consisted of four sections, each consisting of 10 closed questions in the form of a Likert scale: respondents answered by marking an answer on a five-point scale, choosing the answer that was most truthful in relation to the statement asked previously.

### 3.4. Characteristics of the research sample

The final survey questionnaires were presented to respondents in March 2022 and the completed response sheets collected in April 2022. The survey was conducted on a group of 30 people. The respondents were divided into four professional groups: doctors, nurses, administration and registration.

Table 1 shows (numerically and in percentage terms) the aggregate breakdown of respondents by: gender, age, place of residence, education, position held and length of service.

**Table 1.**
*Metrics*

| | | [N] | [%] |
|---|---|---|---|
| Gender | Woman | **17** | **56.6** |
| | Man | **13** | **43.4** |
| Age | 26-40 years | **4** | **13.3** |
| | 41-60 years | **15** | **50.0** |
| | Over 60 years | **11** | **36.7** |
| Education | Vocational | **1** | **3.3** |
| | Medium | **9** | **30.0** |
| | Higher | **20** | **66.7** |
| Position held | Registration | **3** | **10.0** |
| | Administration | **8** | **26.7** |
| | Nurse | **12** | **40.0** |
| | Doctor | **7** | **23.3** |
| Length of service | 5-10 years | **3** | **10.0** |
| | Over 10 years | **27** | **90.0** |

Source: Own study.

## 4. Verification of research hypotheses

Based on the analysis of the company's internal documentation and on the basis of the theoretical research model, four research hypotheses were set.

Table 2 shows the aggregated distribution of responses to questions verifying hypothesis H1: "There was a disorganisation of work in the selected treatment facility". The questions included here referred to the quality of the respondents' work, the scope of their duties, their working hours, their working conditions, their earnings before and after the pandemic outbreak, the number of patients and the company's training.

**Table 2.**
*Distribution of responses verifying the first hypothesis*

| Question | I strongly agree | | I rather agree | | Difficult to say | | I rather disagree | | I strongly disagree | |
|---|---|---|---|---|---|---|---|---|---|---|
| No. | [N] | [%] | [N] | [%] | [N] | [%] | [N] | [%] | [N] | [%] |
| 1 | 21 | 70 | 5 | 16,7 | 3 | 10 | 1 | 3,3 | 0 | 0 |
| 2 | 9 | 30 | 10 | 33,3 | 5 | 16,7 | 5 | 16,7 | 1 | 3,3 |
| 3 | 16 | 53.3 | 9 | 30 | 1 | 3,3 | 1 | 3,3 | 3 | 10 |
| 4 | 13 | 43.3 | 10 | 33,3 | 3 | 10 | 2 | 6,7 | 2 | 6,7 |
| 5 | 10 | 33.3 | 11 | 36,7 | 4 | 13,3 | 1 | 3,3 | 4 | 13,3 |
| 6 | 11 | 36.7 | 8 | 26,7 | 6 | 20 | 0 | 0 | 5 | 16,7 |
| 7 | 7 | 23.3 | 5 | 16,7 | 7 | 23,3 | 7 | 23,3 | 4 | 13,3 |
| 8 | 9 | 30 | 6 | 20 | 4 | 13,3 | 8 | 26,6 | 3 | 10 |
| 9 | 20 | 66.7 | 4 | 13,3 | 2 | 6,7 | 2 | 6,7 | 2 | 6,7 |
| 10 | 13 | 43.3 | 7 | 23,3 | 3 | 10 | 5 | 16,7 | 2 | 6,7 |
| Av. | | **42.9** | | **25,0** | | **12,7** | | **10,6** | | **8,8** |
| Av. sum | **67.9** | | | | **12.7** | | **19.4** | | | |

Source: Own study.

Considering the distribution of responses, it can be concluded that hypothesis H1: "There has been a disorganisation of work in the selected treatment facility" has been confirmed, since - with the omission of neutral responses (12.7%) - there is a predominance of positive responses (67.9%) over negative responses (19.4%).

Table 3 shows the summary distribution of responses to questions verifying hypothesis H2: "Online consultations have become an alternative to existing service provision". The questions included here referred to the provision of telephone consultation, respondents' willingness to provide online consultation, in-house training, use of online consultation, incidence of online consultation, reception by patients, reception by staff and issues of feeling safe with this form of medical service.

**Table 3.**
*Distribution of responses verifying hypothesis two*

| Question | I strongly agree | | I rather agree | | Difficult to say | | I rather disagree | | I strongly disagree | |
|---|---|---|---|---|---|---|---|---|---|---|
| No. | [N] | [%] | [N] | [%] | [N] | [%] | [N] | [%] | [N] | [%] |
| 11 | 3 | 42.9 | 2 | 28,6 | 0 | 0 | 2 | 28,6 | 0 | 0 |
| 12 | 4 | 57.1 | 1 | 14,3 | 1 | 14,3 | 1 | 14,3 | 0 | 0 |
| 13 | 1 | 14.3 | 1 | 14,3 | 0 | 0 | 4 | 57,1 | 1 | 14,3 |
| 14 | 4 | 57.1 | 1 | 14,3 | 0 | 0 | 0 | 0 | 2 | 28,6 |
| 15 | 5 | 71.4 | 0 | 0 | 2 | 28,6 | 0 | 0 | 0 | 0 |
| 16 | 2 | 28.6 | 1 | 14,3 | 0 | 0 | 2 | 28,6 | 2 | 28,6 |
| 17 | 1 | 14.3 | 1 | 14,3 | 3 | 42,9 | 1 | 14,3 | 1 | 14,3 |
| 18 | 0 | 0 | 2 | 28,6 | 4 | 57,1 | 1 | 14,3 | 0 | 0 |
| 19 | 2 | 28.6 | 2 | 28,6 | 1 | 14,3 | 1 | 14,3 | 1 | 14,3 |
| 20 | 5 | 71.4 | 1 | 14,3 | 1 | 14,3 | 0 | 0 | 0 | 0 |
| Av. | | **38.6** | | **17,2** | | **17,2** | | **17,2** | | **10,0** |
| Av. sum | **55.8** | | | | **17.1** | | **27.1** | | | |

Source: Own study.

Considering the distribution of responses, it can be concluded that hypothesis H2: "Online consultation has become an alternative to the existing service provision" has also been confirmed, since - with neutral responses (17.1%) omitted - there is a preponderance of positive responses (55.8%) compared to negative responses (27.1%).

Table 4 shows the aggregated distribution of responses to the questions verifying hypothesis H3: "The pandemic contributed to many difficulties during work performance". The questions included here referred to the safety measures used, the availability of materials and tools to do the job, the level of fatigue of workers, the amount of extra work, the mental state of workers, psychological support in the workplace and the occurrence of deaths in the workplace.

**Table 4.**
*Distribution of responses verifying hypothesis three*

| Question | I strongly agree | | I rather agree | | Difficult to say | | I rather disagree | | I strongly disagree | |
|---|---|---|---|---|---|---|---|---|---|---|
| No. | [N] | [%] | [N] | [%] | [N] | [%] | [N] | [%] | [N] | [%] |
| 21 | 11 | 36.6 | 7 | 23.3 | 4 | 13.3 | 5 | 16.6 | 3 | 10 |
| 22 | 8 | 26.6 | 8 | 26.6 | 5 | 16.6 | 4 | 13.3 | 5 | 16.6 |
| 23 | 6 | 20 | 8 | 26.6 | 4 | 13.3 | 8 | 26.6 | 4 | 13.3 |
| 24 | 12 | 40 | 13 | 43.3 | 3 | 10 | 2 | 6.6 | 0 | 0 |
| 25 | 17 | 56.6 | 10 | 33.3 | 2 | 6.6 | 1 | 3.3 | 0 | 0 |
| 26 | 15 | 50 | 9 | 30 | 6 | 20 | 0 | 0 | 0 | 0 |
| 27 | 4 | 13.3 | 4 | 13.3 | 2 | 6.6 | 10 | 33.3 | 10 | 33.3 |
| 28 | 4 | 13.3 | 10 | 33.3 | 2 | 6.6 | 4 | 13.3 | 9 | 30 |
| 29 | 8 | 26.6 | 16 | 53.3 | 5 | 16.6 | 1 | 3.3 | 0 | 0 |
| 30 | 4 | 13.3 | 9 | 30 | 3 | 10 | 7 | 23.3 | 7 | 23.3 |
| Av. | | **29.6** | | **31.3** | | **11.9** | | **10.6** | | **9.3** |
| Av. sum | **60.9** | | | | **11.9** | | **19.9** | | | |

Source: Own study.

Considering the distribution of responses, it can be concluded that hypothesis H3: "The pandemic has contributed to a lot of difficulties during the execution of work" is also confirmed, since - with the omission of neutral answers (11.9%) - there is a preponderance of positive answers (60.9%) compared to negative answers (19.9%).

Table 5 shows the summary distribution of responses to questions verifying hypothesis H4: "The pandemic period highlighted staff shortages". The questions included here referred to employees' level of motivation for work and willingness to change it, level of responsibility at work, employees' level of stress, fear of SARS-CoV-2 infection, the issue of sickness benefits, the amount of work an employee has, and the employer's attitude to the pandemic situation and employees' accompanying emotions in the workplace.

**Table 5.**
*Distribution of answers verifying the fourth hypothesis*

| Question No. | I strongly agree | | I rather agree | | Difficult to say | | I rather disagree | | I strongly disagree | |
|---|---|---|---|---|---|---|---|---|---|---|
| | [N] | [%] | [N] | [%] | [N] | [%] | [N] | [%] | [N] | [%] |
| 31 | 12 | 40% | 8 | 26,6% | 6 | 20% | 5 | 16,6% | 0 | 0% |
| 32 | 9 | 30% | 12 | 40% | 3 | 10% | 5 | 16,6% | 1 | 3,3% |
| 33 | 17 | 56.6% | 5 | 16,6% | 6 | 20% | 2 | 6,6% | 0 | 0% |
| 34 | 16 | 53.3% | 8 | 26,6% | 7 | 23,3% | 0 | 0% | 0 | 0% |
| 35 | 9 | 30% | 14 | 46,6% | 4 | 13,3% | 1 | 3,3% | 2 | 6,6% |
| 36 | 4 | 13.3% | 6 | 20% | 3 | 10% | 13 | 43,3% | 4 | 13,3% |
| 37 | 4 | 13.3% | 8 | 26,6% | 1 | 3,3% | 10 | 33,3% | 7 | 23,3% |
| 38 | 5 | 16.6% | 11 | 36,6% | 1 | 3,3% | 6 | 20% | 7 | 23,3% |
| 39 | 6 | 20% | 7 | 23,3% | 13 | 43,3% | 3 | 10% | 1 | 3,3% |
| 40 | 2 | 6.6% | 13 | 43,4% | 15 | 50% | 0 | 0% | 0 | 0% |
| * | 5 | 16.6% | 20 | 66,6% | 3 | 10% | 2 | 6,6% | 0 | 0% |
| | 2 | 6.6% | 11 | 36,6% | 17 | 56,6% | 0 | 0% | 0 | 0% |
| | 3 | 10% | 10 | 33,3% | 16 | 53,3% | 1 | 3,3% | 0 | 0% |
| | 3 | 10% | 11 | 36,6% | 15 | 50% | 1 | 3,3% | 0 | 0% |
| | 3 | 10% | 10 | 33,3% | 16 | 53,3% | 1 | 3,3% | 0 | 0% |
| | 1 | 3.3% | 7 | 23,3% | 20 | 66,6% | 2 | 6,6% | 0 | 0% |
| Av. | | **27.8** | | **30,5** | | **19,5** | | **14,9** | | **7,3** |
| Av. sum | **58.3** | | | | **19.5** | | **22.2** | | | |

* Respondents had a choice of nervousness, satisfaction, anxiety, irritation, fear, helplessness, involvement, respectively.

Source: Own study.

Considering the distribution of responses, it can be concluded that hypothesis H4: "The pandemic period highlighted staff shortages" has also been confirmed, since - with neutral responses (19.5%) omitted - there is a preponderance of positive responses (58.3%) compared to negative responses (22.2%).

## 5. Conclusions and recommendations

Based on the analysis of the company's internal documentation and on the basis of the theoretical research model, four research hypotheses were set.

Conducting research on the impact of the COVID-19 pandemic on the functioning of a selected medical facility, which was the medical facility "SILESIANA" Sp. z o. o. with its registered office in Zabrze, allowed us to get an idea of how the SARS-COV-2 virus affected

its current functioning. The use of an appropriate tool made it possible to collect information from selected employees working in the studied facility. The responses collected made it possible to determine whether the hypotheses adopted earlier were confirmed in the research conducted.

The respondents' answers confirmed all the hypotheses. The majority of the respondents gave corroborating answers to the questions asked, thus confirming the disorganisation in the organisation. The vast majority of the respondents know what the concept of work is. The occurrence of disorganisation at the workplace is also confirmed by the fact that more than half of the respondents confirmed that their working hours had increased, their responsibilities had increased and the number of hospitalised patients had increased significantly.

Respondents' answers also confirmed that online consultation has become an alternative to the existing service provision. A significant proportion of respondents provide a service such as online consultation in exchange for a traditional appointment. A larger group of respondents eligible to provide online consultation indicated that they do so willingly because they feel much safer through this form. However, when asked whether the workplace had given prior training on how to provide a service such as online consultation, respondents were not unanimous, but most of them answered in the negative, meaning that only some of respondents had received training in this area.

Respondents answering further questions confirmed the emergence of a number of impediments during the pandemic period when performing their work. One of the impediments that emerged included masks and protective suits that had to be worn while performing duties. The majority of respondents confirmed that this had a negative impact on the quality of their work performance. The lack of basic materials, tools in the medical facility can also be seen in the respondents' answers, which largely contributed to the difficulties during service provision. The extended working hours of the staff resulted in greater fatigue at the end of the shift, which in turn translated into a deterioration of the mental state of the staff.

Based on the respondents' answers, it can be concluded that there was a problem of staff shortage in the facility. A significant proportion of the respondents are thinking of changing jobs, as working in a covid ward is characterised by greater responsibility. In addition, a greater proportion of the respondents fear infection with the SARS COV-2 virus, which is also associated with increased stress. Some of the respondents admitted that emotions such as nervousness, anxiety, irritation, fear and helplessness accompany them at work, which may make them want to change jobs.

Referring to the research carried out, the results, the conclusions confirmed earlier, the following recommendations can be proposed:

- Provide training to all staff covering the scope of the provision of the online consultation service covering staffing, personnel issues. This will reduce the number of dissatisfied patients with the quality of services provided.

- Enabling psychological support for any employee of a treatment facility working in the era of the pandemic. Providing psychological support would significantly improve the psychological state of employees, reduce the level of perceived stress and ensure their better work performance.
- Develop/revise existing procedures in terms of stock policy so that there is no shortage of basic medical equipment needed to do the job.

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# THE IMPACT OF LEGAL REGULATIONS ON INVESTMENT PROJECT MANAGEMENT IN CONSTRUCTION

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**Introduction/background:** The performance of construction work is a process in which the legislator deeply interferes by devoting to it not only a separate act but also by regulating construction issues in several other acts. The management literature does not pay sufficient attention to legal matters, even though that they conclude some traps for the investor or the manager.
**Aim of the paper:** To indicate and explain the idea and the stages of a construction investment project in light of the law with attention to the risks involved for the investor or the manager.
**Materials and methods**: Analysis of literature, laws, and judgments.
**Results and conclusions:** Regulations deeply interfere with the construction process, forcing the execution of subsequent steps in a specific order. Furthermore, every effort needs to carry out some actions. At the same time, there is a risk of failure of the investment for legal reasons during its course despite fulfilling the requirements stipulated at earlier stages. For this reason, it is essential to plan the construction investment and the project manager has to have a legal culture greater than in the case of other projects.

**Keywords:** construction works, management, law.

## 1. Introduction

The construction investment process is a special project, for which there are several arguments. First, it involves a large number of materials and labor, which often requires high skills (Levy, 2002; Kaplinski, Dziadosz, Zioberski, 2011). Second, its result is usually of great value and satisfies basic or other important human needs. Third, it is usually costly (Winiarski, 2019). Fourth, there are few investment processes that have such detailed legal regulations (Bizon-Górecka, Górecki, 2017; Kaplinski, Dziadosz, Zioberski, 2011). For this reason, any person managing such a project should be aware of the content of the rules governing this department of social reality. This is undoubtedly an additional and necessary part of her competence (Obolewicz, 2011). Information of this kind is called legal information, and it helps to obtain compliance of actions with the law (Ostrowska, 2010). Ignorance of the law is even

considered an obstacle to the development of construction projects (Belniak, 2010). Hence, the purpose of this paper is to introduce the legal regulation and legal requirements associated with the implementation of a construction project.

In analyzing the legal regulation, it must be noted at the outset that it relates to three areas. First, it will be construction law. Second, civil law regulation. Third, public procurement regulations. This is because these regulations have different purposes.

At first glance, construction law may be associated with the Law of July 7, 1994. - Construction Law, OJ 2021, item 2351 as amended. Nevertheless, the scope of this branch of law is broader and includes other regulations related to the field of construction (Bilinski, Kucharczyk, 2013), such as the Law of March 27, 2003, on Spatial Planning and Development, OJ 2022, item 503 as amended, or the Law of April 27, 2001. - Environmental Protection Law, OJ 2022, item 2556 as amended, or the Act of October 3, 2008, on providing information about the environment and its protection, public participation in environmental protection and environmental impact assessments, OJ 2022, item 1029 as amended (Zwolak, 2016; Grzywinski, 2015). Understood in this way, construction law is part of administrative law (Leoński, 2005), characterized by the state's sovereign and unilateral influence on the individual (Ochendowski, 2005). Placing construction projects under the regulation of a branch of the law of this nature aims to effectively achieve the goals of safety, health, hygiene, environment, energy efficiency, or sustainable development (Prawo budowlane. Komentarz, 2022).

Civil law regulation is mainly contained in the Law of April 23, 1964. - Civil Code, OJ 2022, item 1360. This law shapes a separate type of contract concluded for the purpose of ordering construction work - construction work contracts - recognizing that the specifics of this area of economic turnover require a separate regulation (Kodeks cywilny. Komentarz, 2013). At the same time, this regulation is so fragmentary and general (Nóżka, 2013) that in practice it is often supplemented with ready-made forms and model contracts, the most important of which are the so-called FIDIC templates (Wysoczanski, 2018; Kaplinski, Dziadosz, Zioberski, 2011).

The public procurement regulation (Law of September 11, 2019. - Public Procurement Law, OJ 2022, item 1710, as amended), on the other hand, recognizes construction works as one of the categories of public contracts, i.e. contracts paid for with public funds. The contract itself is a construction contract in the civil law or FIDIC sense, public procurement only determines the procedure for selecting the contractor and in certain aspects modifies the civil law regulation of the construction contract (Wysoczanski, 2018).

How do these issues affect the construction project manager? In his case, the issues of the construction contract along with procurement recede into the background, as they have little impact on the construction schedule and thus the project implementation schedule. Besides, this is an issue over which the manager does not usually have much significant influence, since when concluding a contract the parties either use ready-made templates (especially in the public procurement regime) or call on qualified legal assistance. In contrast, the regulation of

construction law is very extensive and significantly dictates the subsequent stages of the project that the manager manages. Hence, it can be concluded that among the various legal issues related to the regulation of the construction process, knowledge of construction law is the most essential for the manager of such a project, and these issues will be addressed in this study.

## 2. Basic definitions

In the literature on the management of construction investment processes, there are various attempts to stage construction works. For example, J. Grzywinski distinguishes:

- the first stage, which involves determining the legal status of the property, includes acquiring the right to dispose of the property, obtaining the right to dispose of the property for construction purposes,
- the second stage, where development conditions are determined and a construction project is developed, in the form of obtaining a decision on development conditions or determining the use of the land on the basis of the local zoning plan,
- the third stage, where a building permit is issued and construction work is carried out, which consists of obtaining a building permit decision, concluding a contract with a contractor, handing over the construction site to the contractor, providing investor and project's author supervision, developing a safety and health plan, notification of the intended commencement of construction work, obtaining a construction log, and determining the supply of utilities for construction,
- the fourth stage (occupancy permit and commencement of operation), which includes obtaining a decision on the occupancy permit, handing over the construction documentation and as-built documentation to the owner or manager of the facility and establishing and maintaining the facility book (Grzywiński, 2015).

In turn, Z. Dzierżewicz and J. Dylewski divide the construction process as follows:

- stage one (establishing the conditions for development and land use), comprising one phase (preparation of the investment) and the following activities: establishing the conditions for development and land use, drawing up a geodetic survey map, preparing geological documentation, environmental impact assessment, obtaining the right to dispose of the property for construction purposes,
- the second stage (preparation of the investment for implementation), consisting of the design phase, which includes the preparation of documentation and the agreement and opinion of this documentation, as well as the administrative and legal phase, consisting of performing the necessary official actions preceding construction work,

- the third stage (implementation of the construction project), comprising the construction phase and the commissioning phase,
- the fourth stage, i.e. maintenance (operation) of the construction object (Dzierżewicz, Dylewski, 2011).

There are also many other proposals for the division of the construction investment process, discussed by J. Obolewicz (Obolewicz, 2016). They are characterized by the separation of specific activities, their different number, and their different grouping into phases and stages. Some are limited only to the construction of the facility and entry into operation, while others also include the operation and demolition of the facility. Thus, there is a significant difference between them in assessing the duration of investment process, some of them often include several hundred years of the facility lifespan. What is even more important, the literature does not explain what these stages consist of, what requirements, risks, procedures, etc. are associated with them. Thus, it is necessary to base the systematics of the construction investment process on legal regulations and explain its course in a way that is useful to the project manager, for whom these regulations are one of the external factors in planning the project (Gorzelany-Dziadkowiec, 2003). Hence, based on their analysis, at least 12 stages can be distinguished, which will be presented and discussed below. These stages are not consolidated, i.e. the various stages are "handled" by different entities and the investor has to deal with each of them separately (the only exception is the so-called "spec-laws", which, however, will not be presented here for the sake of clarity of the argument).

## 3. The investment process in the construction industry

### 3.1. The notion and scope of the investment process in the construction industry

The discrepancies in the understanding of the concept of the "investment process in the construction industry", as indicated above, prompt the notion of the issue of its boundaries and scope. Helpful here will be Article 1 of the Construction Law, which defines the object and scope of this law, i.e. the range of matters that this law regulates. These are:

- matters of design, construction, maintenance, and demolition of construction objects,
- the rules of operation and construction of administration bodies.

As you can see, this law regulates not only the execution of construction works, but also the subsequent maintenance, as well as the demolition of construction objects, and even the rules of construction of administration bodies. Therefore, the investment process in construction should not be equated with the entire life cycle of a construction object. Also J. Obolewicz and M. Okuń distinguish the construction investment process and the operational investment process as stages of the life cycle of a construction object (Obolewicz, Okuń, 2021).

M. Dabrowski and K. Kirejczyk limit investment in construction to the construction and commissioning of a facility likewise (Dabrowski, Kirejczyk, 2001).

Additional arguments are provided by the dictionary of the Polish language, according to which the word 'investment' means 'an economic outlay whose purpose is to create new or enlarge existing fixed assets' (Słownik, 1978, p. 806), or 'the allocation of financial resources for the construction, expansion, modernization of fixed asset objects' (Słownik, 1998, p. 328).

It is clear from these arguments that the investment process in construction is the process from conception to completion of construction work (Grzywinski, 2015). Understood in this way, the investment process according to the detailed regulation of the Construction Law consists of the following stages:

- acquisition of legal title to the land on which the investment will be implemented,
- execution of environmental agreements,
- obtaining confirmation of the use of the land for construction purposes,
- obtaining maps for design purposes,
- obtaining permits, agreements, and opinions required by separate regulations,
- development of the construction project,
- execution of administrative procedures preceding the commencement of construction works,
- notification of the planned commencement of construction works,
- commencement of construction,
- execution of construction works,
- obtaining a geodetic as-built inventory,
- procedures for acceptance of the object.

I must emphasize at this point that these stages will occur in most investments. However, under certain circumstances, some stages may be omitted (as will be discussed). This causes the need to analyse each investment individually in the light to the requirements indicated in the regulations. Hence it is difficult to talk here about creating investment models because these models would have to be dozens if not hundreds. It is better to adopt a single model, indicated above, of the course of construction investment, assuming the possibility of certain exemptions from it. Of course this regulation may be perceived as excessive, especially from the smaller investment point of view, but we have to bear in mind that restrictions imposed by public law aim at security, environment protection as well as the protection of investor’s interests.

### 3.2. Acqusition of legal title to the land

Legal title is the right to dispose of the property in a way including the ability to perform construction work. It can be ownership, a limited right in rem (e.g., usufruct or easement), or even a contractual right, such as a lease or tenancy. It is important that it is shaped in such a way as to create the freedom to carry out construction work, i.e., for example, the theoretically

broadest right to property must not be limited in such a way as to preclude the carrying out of construction work, such as an established easement for the transmission of gas through an underground pipeline (Prawo budowlane. Komentarz, 2022), and in turn, the theoretically narrowest lease or rental right should ensure the possibility of carrying out construction work. This imposes an obligation on the investor to determine the legal status of the property or to appropriately shape the agreement concluded with the owner of the property, for example, providing for the right to build a cell phone mast (Soltysiak, 2019).

### 3.3. Execution of environmental agreements

In the next step the construction project manager should apply for a decision on the environmental conditions of the investment, if necessary (this means that not every investment project will need this step). This procedure is regulated by the Law on Providing Information on the Environment and its Protection. Its purpose is to limit the significant impact of the project on the environment. The law distinguishes two types of this impact - permanent and potential. In the first case, the assessment is mandatory, and in the second case it is optional, i.e. the project manager must apply for a determination of the obligation to conduct an assessment, and if such an obligation is imposed, an assessment must be applied for (as in the case of mandatory assessment). The criteria for distinguishing between permanent and potential impacts are set forth in the Regulation of the Council of Ministers of September 10, 2019, on projects that may have a significant impact on the environment, OJ, item 1839.

If a decision on environmental conditions is necessary, then an environmental impact report must be prepared and attached to the application. In the course of the proceedings, the authority additionally analyzes whether the project takes place in a Natura 2000 area. In this case, the body conducting the proceedings applies to the Regional Directorate for Environmental Protection (RDEP) to consider the impact of the project on the Natura 2000 area. This authority first analyzes whether there is a need for such an assessment and if there is, it conducts the assessment and may determine that the project has an impact on the Natura 2000 area (which makes it impossible to implement the investment), or that the project has an impact but is important for the public interest (then the investment is possible, but the conditions set by the RDEP must be met), or it may determine that the project does not affect the Natura 2000 area (which makes it possible to implement the investment freely). This is a risk factor, because after the funds have been spent on acquiring the title to the property, it may turn out that the implementation of the planned project turns out to be impossible or unprofitable due to the conditions imposed. This risk can be mitigated by making environmental arrangements before acquiring title to the property, e.g. on the basis of a power of attorney from the property owner, or by entering into a lease agreement subject to obtaining all necessary permits.

### 3.4. Confirmation of the use of the land for construction purposes

The designation of land for construction purposes is carried out on the basis of the Spatial Planning and Development Act. This law provides two instruments for this. One is the local zoning plan (LZP), and the other is an administrative decision. The plan is a universally binding legal act, passed by the municipal council. It consists of two parts - a graphic one, i.e. a map specifying the designation of individual areas in the municipality - and a text one, indicating the exact conditions for the development of various areas. Covering the area of a planned project with a plan is the most favorable situation because even before the acquisition of legal title, its legality can be verified.

If there is no plan, it is necessary to apply for an administrative decision - either a decision on development conditions (DDC) or a decision on the location of a public purpose investment (DLPPI), which is issued only for public purpose investments, i.e. primarily road infrastructure, transmission networks, environmental protection facilities, etc. The risk factors associated with a DDC are the possibility of suspending the proceedings on its issuance for up to 9 months if the municipality proceeds with the development of an LZP, its expiration if the plan is enacted, and basing the decision on the principle of good neighborliness. This principle requires that, when determining the conditions for new development, reference should be made to the way in which neighboring plots accessible from the same road are developed, which means that at least one of them must be developed, although "neighboring" does not have to mean an immediately adjacent plot, it is enough that it be a neighborhood forming an urban whole (NSA judgment, 2006). In addition, when applying for a DDC, one needs to prepare rather extensive documentation, including a map and characteristics of the investment, which is obviously more cumbersome than reading the LZP (Grzywinski, 2015). These circumstances make it much safer to plan investments in the area covered by the LZP.

### 3.5. Maps for design purposes

A map for design purposes can be obtained from a surveyor. The surveyor takes a base map of the plot of land, along with the immediate surroundings, from the state geodetic resource, and then superimposes the objects on the plot onto it. This stage is quite time-consuming and can take up to several months, although it will only be necessary if the investment involves the construction of a new building substance, rather than, for example, the reconstruction of an existing building.

### 3.6. Permits, agreements, and opinions required by separate regulations

The basic permits, agreements, and opinions required by separate regulations include a decision to exclude land from agricultural or forestry production, a water law permit, and permission from the road manager to locate an exit from a public road.

The forest or agricultural use of the land is decided primarily by the land registry, maintained by the district governors. Hence, the factual state of the property should not be suggested. The exclusion of land from agricultural or forestry production depends on the fulfillment of the prerequisites indicated in the Law of February 3, 1995, on the protection of agricultural or forest land, Journal of Laws 2022, item 2409. Agricultural land can be of class I to VI. Land of lower classes, i.e. IV-VI, does not require any special prerequisites, the mere submission of an application is sufficient for their exclusion. In the case of higher classes, there may be a need to pay compensation and annual fees. The exclusion of land from forestry production is similar, with forest land having no classes, so in each case a decision specifying additional obligations related to exclusion is necessary. If there are trees on the land and it is necessary to cut them down in order to implement the project, there may be further fees involved, and, even worse, the decision on this matter is discretionary (NSA judgment, 2013), which may involve the investor not receiving permission to do so (Grzywinski, 2015).

A water permit is a decision issued by the Polish Water Authority. It is necessary for certain water uses. In the context of construction works, this may be water abstraction for the purpose of the facility, sewage disposal, dewatering of excavation, or construction of a water facility, e.g. a culvert over which the entrance to the property will be located (although sometimes a so-called "water right notification" is sufficient for water use, which informs the Polish Water Authority about the intended use and allows raising objections). A necessary attachment to an application for such a decision is a water law operative, describing the manner of water use and analyzing its effects.

In turn, the location of the exit from a public road is the designation of the place where the entrance to the property from a public road is located, as well as the size and shape of the exit. Consent is given by the road manager, which is, with respect to municipal roads, the mayor, county roads - the county board, provincial roads - the provincial board, and national roads – the General Directorate of National Roads and Highways. Importantly, carrying out works in the road lane and placing devices there (e.g., connections) also requires the consent of the road manager and payment of fees.

### 3.7. Development of the construction project

It is worth noting that the activities described so far sort out the construction status of the property and aim to collect a full set of information necessary for the designer. At this stage, there is no doubt that the investor can dispose of a specific property and that it can be used for the intended construction project, moreover, the investment will not deteriorate the environment (or conditions will be specified), and the designer will be aware of the limitations in the form of the actual status on the plot (survey map) and the location of the exit. The execution of a building project should be commissioned to a designer with the appropriate building license, although such a project is not always required, sometimes a sketch or drawing is enough,

depending on what kind of administrative procedure preceding to begin a construction work is required for a particular investment.

### 3.8. Administrative procedures preceding the commencement of construction works

In principle, 3 types of investments can be distinguished in terms of the criterion of the administrative procedure preceding them:

a) investments requiring a construction or demolition permit,
b) investments requiring notification,
c) investments for which no administrative procedure is needed.

The fundamental (default) premise for carrying out construction work is the requirement to obtain a construction permit. Other modes come into play only if the planned investment falls within one of the exceptions listed in Article 29 of the Construction Law. These exceptions total nearly a hundred. It is also worth noting that often the same type of work (e.g., insulating a building) will be covered by different procedures depending on the size of the work. These procedures are usually perceived as cumbersome and bureaucratic, however, it should not be forgotten that the protective function of the Construction Law is revealed in them since their fulfillment means that the investor cannot be prevented from carrying out the investment (Zwolak, 2016; Prawo budowlane. Komentarz, 2022).

The difference between a notification and a construction (demolition) permit boils down to the type of response the investor receives from the administrative body to the documentation submitted. In the case of a permit, this response takes the form of a formalized document, the content of which is the approval of the construction project, permission to carry out the work, and often the definition of other conditions for carrying out the work. Notification, on the other hand, results in a form of administrative action that is referred to as a silence of the administration. It implies a lack of response and is tantamount to (tacit) acceptance of the submitted documentation (Zimmermann, 2016). However, this is not the only effect of the notification, as the authority may raise an objection (if it was defectively submitted), or impose an obligation to obtain a construction permit (mostly if the planned project is unsafe or nuisible).

There is a little-known risk factor associated with the notification, and that is the provision of Article 30(6a) of the Construction Law, according to which an objection is considered to have been made at the time it is sent to the addressee (i.e., the investor), and not at the time the correspondence is received from the office. This results in the fact that the seemingly relatively short notification deadline (21 days before the start of work) realistically needs to be extended by a few days for the possible arrival of an objection, in order to avoid so-called "unauthorized construction," i.e., performing work despite objections.

### 3.9. Notification of the planned commencement of construction works

As mentioned, the successful completion of the procedures discussed allows investor to legally carry out the work. However, it is necessary to perform one more official act – to notify construction supervision authorities, which deal with the control of the work carried out. Importantly, there is no need to meet a deadline here, you can notify even one day before the start of the work (Prawo budowlane. Komentarz, 2022). In addition, there is no need to wait until the building permit becomes final or the deadline for responding to the notification expires - you can start work after notifying the construction supervision authority, but then the investor assumes the risk of possible revocation of the building permit as a result of an appeal or receipt of the authority's response to the notification (Prawo budowlane. Komentarz, 2022).

### 3.10. Commencement and development of the construction project

The notification completes the stage of construction investment involving the preparation of all the necessary documents and completion of the required official formalities. From this point, the execution of physical activities to achieve the intended purpose begins. Studies in the field of construction investment management state that it is necessary at this point to conclude a contract with the contractor of works (Obolewicz, 2016). Meanwhile, this is only a factual necessity, not a legal one - the Construction Law does not require that the work be performed by a contractor and thus that a contract be concluded with him. In fact, the work can be performed by the investor, acting alone, or by his employees. The necessity of hiring a contractor will occur only when the investor does not want or cannot perform the work himself.

The execution of construction works, despite being the most labor-intensive and costly stage of a construction project, prejudging the realization of the intended object (Winiarski, 2019), is not regulated separately in the Construction Law (Grzywinski, 2015). It treats only duties related to safety, supervision, and reporting in a construction log. The execution acts realizing the construction included in the project, are not regulated, so they remain the area of free action of the investor or the contractor hired by him.

### 3.11. Obtaining a geodetic as-built inventory

The construction of an object means the creation of a new building substance, which requires inclusion in the surveying documentation. Hence, the next step is to hire a surveyor to measure the factual location of the object on the plot (since during the course of the work there may be an error in the location of the object, the dimensions of the object may change, etc.) and plot the object on the map.

### 3.12. Procedures for acceptance of the object

The final stage of construction work is the acceptance of the object. Its purpose is to make sure that the completed object complies with the project, and the art of construction, and will be safe to operate. The Construction Law provides for three ways to end construction work:

- notice,
- obtaining an occupancy permit,
- a mode that requires no formalities.

The notification is addressed to the construction supervision authority in the case of such projects as single-family houses and construction carried out under a building permit. Following it, the construction supervision authority may object within 14 days if the construction substantially differs from the conditions set in the construction permit or notification. The substantial difference mainly concerns the dimensions of the object, the number of floors, the way of use, the compliance of the construction with additional arrangements and agreements, and also the change of heating to solid fuel. The effect of an objection is that the object cannot be used and an occupancy permit must be obtained. Importantly, the objection should be sent to the addressee within the indicated period, not received, so from the point of view of project management it is worth waiting a few more days before using the object (like in the case of notification of planned construction works).

An occupancy permit is required for:

- larger investments (e.g., sports facilities, public buildings, hotels, multi-family residential buildings, stores, restaurants, pile stations, hydro technical structures),
- when such an obligation is imposed in the construction permit,
- objections after notification of the end of construction,
- unauthorized construction,
- partial execution of the project (i.e., the investor has completed only part of the work covered by the project and nevertheless intends to proceed with the operation of the object).

Before the issuance of an occupancy permit, an inspection of the facility is mandatory, which should be carried out within 21 days of the application; however, exceeding this deadline does not entitle the investor to operate the facility; he must wait until it is completed (Jarzynski, Szynalska 2022). This stage of a construction investment project is also fraught with risk, as any incompliance with the law found is subject to a penalty. The inspection ends with the issuance of a decision, which can be positive, partially positive, and negative. A partially positive occupancy permit specifies the conditions for use of the facility and indicates what works still need to be done and by what date. Once the works have been completed, the investor notifies the building supervisory authority, under the risk of expiration of the permit. It should also be remembered that use can be commenced only after the permit becomes final (Grzywinski, 2015).

In contrast, all other construction work, i.e., performed on the basis of notification, or not involving the construction of a new facility (e.g., reconstruction), is not subject to any verification, and the operation of facilities so constructed, or on which work has been carried out, can commence immediately after completion of the work.

## 4. Summary

The analysis of the legal regulation of the investment process in the construction industry, carried out above, made it possible to:

- define the meaning and scope of this type of project,
- showing its specificity in comparison with other projects, expressed in the far-reaching interference of the legislator in its course,
- accurately distinguish its stages and describe them, so that they can be elements of the process in the process approach to management (Ostrowska, 2010),
- paying attention to moments that are particularly risky for the investor.

One more aspect of construction project management should be noted. It is the important role of the conceptual stage, where the decision to start the project is made. This is the most important stage of the project (Winiarski, 2019). This decision should be particularly carefully considered, since the acquisition of title to a property usually involves the expenditure and investing considerable cash, and if it turns out that the acquired plot of land is not suitable for the project, its disposal may not only be time-consuming, but also involve a loss due to the fees incurred in connection with the purchase of the property (customarily charged to the buyer), a possible decrease in value, and income tax on the profit when the property is sold before the expiration of five years after its acquisition. Hence, it is necessary - some time in advance of the legally regulated or literature-indicated stages of the investment process in the construction industry - to make analyses of the legal and factual status of the property, including the property's use and development conditions. Legal restrictions will primarily include established easements, or environmental requirements (especially protection of plantings and the cost of their eventual removal). Technical restrictions, on the other hand, mean the geological conditions of the site and the technical conditions specified in the Regulation of the Minister of Infrastructure of April 12, 2002, on the technical conditions to be met by buildings and their location, OJ 2022, item 1225. It may turn out, for example, that the minimum distance required by them from the object on the neighboring plot (including due to requirements to ensure adequate natural light), or from the forest will prevent the implementation of the planned project.

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