ORGANIZATION & MANAGEMENT

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

CONTENTS

ACHIEVING SUSTAINABLE DEVELOPMENT THROUGH STRATEGIC GREEN SUPPLY CHAIN MANAGEMENT

M.S. ANNAPOORNA

CMR University, Bengaluru, Karnataka, India; ORCID: 0000-0003-0311-3281

Abstract: Environmentally and socially responsive supply chains are in the early adoption stages in India. Global supply chains need worldwide goals, and the key to the success of Green Supply Chain Management is to bring the worldwide industry together to decide upon and pledge to work towards reasonable and concrete goals that will make a real difference to the environment. Customers are increasingly demanding to know where products come from, how they are made and distributed and what impact future environmental legislations will have on the products they buy. The aim of this paper is to provide action plans and facilitate knowledge among supply chain practitioner that they need to go green the business efficiently, and communicate these efforts to their customers, partners, and the public. In fact, the paper discusses the key drivers for green initiatives include government compliance, improved customer and public relations, a decreased fuel bill and financial ROI through various supply chain initiatives such as reverse logistics. Further, increasing supply chain efficiency, improving investor relations, decreasing risk and a larger corporate responsibility agenda are identified as important factors in the strategic decision to go green. Companies working in India are not properly addressing these measures in supply chain design and operations. That is why, the paper further elaborates strategic management of green supply chain, which involves collecting and analyzing environmental regulations and customer concerns, discussing the relevant environmental issues with the procurement, manufacturing and quality control departments across the supply chain firms and finally developing and communicating the green supply chain policies to all members of the supply chain i.e. supplier's supplier to customer's customer.

Keywords: Green supply chain, Environment, Supplier Performance Management, Holistic approach, Sustainable Development.

1. Introduction

As the public becomes more aware of environmental issues and global warming, consumers will be asking more questions about the products they are purchasing. Companies will have to expect questions about how green their manufacturing processes and supply chain are, their carbon footprint and how they recycle. However some companies have seen that this not a bad thing and indeed have been able to convert the public's interest in all things green into increased

profits. Environmental initiatives such as strategic environmental sourcing improve an organization's competitive position and reduce risks (Sroufe, 2003). A number of companies have shown that there is a proof of the link between improved environmental performance and financial gains. Companies have looked to their supply chain and seen areas where improvements in the way they operate can produce profits. Companies can find cost savings by reducing the environmental impact of their business processes. By re-evaluating the company's supply chain, from purchasing, planning, and managing the use of materials to shipping and distributing final products, savings are often identified as a benefit of implementing green policies Hopefully the interest in green issues and environmental concern by the public will not decrease as economic issues become more important due to the faltering economy. The trend towards developing a green supply chain is now gaining popularity but most companies are still coming to terms with how this can be achieved and where do they start. For years businesses have been concentrating on improving supply chain visibility, refining efficiency and minimizing cost. Despite the focus being moving towards a green supply chain the goals of visibility, efficiency and cost reduction do not have to be discarded.

Many businesses have not developed a successful refurbishment program for their products that have been returned or exchanged. By offering refurbished items businesses can increase purchasing options to their customers and widen their customer base, whilst improving the environmental impact of their products. Organizations worldwide are continuously trying to develop new and innovative ways to enhance their competitiveness (Rao, and Holt, 2005). Bacallan (2000) suggests that some organizations are enhancing their competitiveness through improvements in their environmental performance to comply with mounting environmental regulations, to address the environmental concerns of their customers, and to mitigate the environmental impact of their production and service activities.

2. Need of green supply chain management

Greening the supply chain has numerous benefits to an organization, ranging from cost reduction, to integrating suppliers in a participative decision-making process that promotes environmental innovation (Bowen et al., 2001; Hall, 2003; Rao, 2002). A growing number of corporations are developing company-wide environmental programs and green products sourced from markets around the world (Min, and Galle, 1997). Globally, governments are exerting pressure on businesses to do more to reduce the negative impact of operations have on the environment. Pressure is coming from the physical world too. Even if it's possible for companies to ignore the impact of their operations on environment but shortage of resources that go into products are necessary to make or move products. It is a direct threat to the success

of business. Similarly, a shortage of available energy at a plant location can force companies to curtail production. In addition, many

3. Key drivers for green initiatives

3.1. Government Compliance

The climate change is happening faster and will bring bigger changes quicker than anticipated. Ironically market and the nature hitting the wall at once, is a sign that we need to find better ways to be more sustainable. Whether the drive is to comply with the government regulations or to meet the costumers' expectations companies are finding motivation to go green. Going green does not just impact company's thinking and strategy but influences supply chain as well. Righteously the focus is not just to attain cleaner water consumption and alternative energy sources for server farms, but to make supply chains more environmentally friendly. The movement toward green and sustainable business practices is the new frontier for manufacturers and "Going Green" is the next step in the lean, just-in-time movement. There has been much reported recently in the news about the conflicting scientific data in the fight for our global ecological salvation. But for manufacturers, this should be more than a question of carbon emissions and water conservation. It is a means to reduce a significant amount of waste and cost in the manufacturing process. No government regulation requires a company to go lean, and no regulation should be required to go green either. The green/sustainability movement is about eliminating waste, reducing costs and doing business for the long haul.

3.2. Financial ROI

The business leaders steering their companies through the recession of 2009 would look at their supply chains and assess whether their use of global, open supply-chain standards is sufficient to maximize their return on investment and position themselves for profitability. The futures of their businesses may depend on it. As the recession continues into the spring of 2009, many manufacturers are responding to decreased levels of activities with trading partners not only by cutting costs, but also by curtailing their supply-chain operations and waiting for consumers and retailers to start buying again. They are incorporating a standards based approach to product identification and data capture in their "four walls" applications locally, like asset management, work-in-process flow, and yard management. More important, they are planning ahead for working with their trading partners, thinking globally by implementing data sharing with partners everywhere across their operations and supply chains, so they have actionable visibility achievable through standards.

3.3. **Reverse Logistics**

The purpose of the reverse logistics process is to ensure that products/materials are returned from the user to the producer in order to be recycled, reused or reconditioned. In reverse logistics the chain is covered in the opposite direction. Reverse logistics therefore denotes a set of planning, execution and flow control measures for raw materials and finished products, with the aim of recovering and recycling those products or materials. Standardized reusable containers, good warehousing layouts, and easy information access reduce storage and retrieval delays which lead to savings in operating costs whilst being environmentally sound (Wu, and Dunn, 1995). Logistics involves a whole range of activities, including collection, sorting, processing and reconditioning. Returns management embraces: returns at the end of a product's life, commercial returns (leasing, mail order, B2C), contractual returns, returns under warranty (faulty goods), production waste and scraps, and "functional" returns, such as packaging to be reused for the same purpose (containers, packaging). Reverse logistics used to be the preserve of distributors of newspapers and magazines (products which have a very limited life span) and mail order distributors (covering products not wanted by consumers). Manufacturers have a variety of options to contribute to the improvement of the environment. Through proactive initiatives, current processes can be utilized to create efficiencies that both protect the environment and positively impact the bottom line. While this may seem to be a daunting task, in most cases, green initiatives can be implemented relatively easily by altering existing repair and refurbishment operations through recycling and other programs.

Here are six tips for creating a "green" program:

1. Create generic, less expensive and lighter packaging for refurbished goods.
2. Utilize biodegradable packaging, made from recycled material.
3. Sort recyclable materials as specific as possible to maximize volume and revenue.
4. Work with regional recycling experts to reduce transportation costs.
5. Recycle material in a timely manner to maximize market viability.
6. Educate and encourage the entire organization to contribute to "green" causes.

3.4. **Supply chain efficiency**

Organizations are integrating their supply chains to reduce operating costs and improve their customer service (Walton et al., 1998). Companies do not often change their businesses processes and it is this attitude allows inefficient processes to continue unabated causing unnecessary waste and pollution. The most commonly perceived enemy to environmental protection is manufacturing and production operations. That is, manufacturing and production processes are viewed as the culprits in harming the environment, in the forms of waste generation, ecosystem disruption, and depletion of natural resources (Fiksel, 1996). Many companies that have been through this exercise have identified processes where raw materials were wasted; resources underutilized and unnecessary energy used due to inefficient equipment. Successful supply chain management is an iterative process that evaluates the cost/benefit trade-offs of operational components. The success of effective supply chain

management is only as good as the ability to properly execute it for the benefit of all stakeholders of the supply chain. A great supply chain, linked with a process of operational excellence, can provide success for the manufacturing company and also its partners, suppliers and customers. A centralized distribution model can also create further efficiencies. While this may not be feasible for all manufacturers, centralizing operations enable asset consolidation, in addition to streamlining the test, repair and refurbishment process. Product companies can adopt a number of business strategies that serve the dual purpose of environmental stewardship and improving business results.

- Adopt lean materials management.
- Use more recycled materials.
- Redesign products to weigh less.
- Reduce packaging content.
- Model the environmental impact of your product.
- Model the health and well-being impact of your products.
- Buy local to reduce carbon footprint.

3.5. Corporate Responsibility

Green initiatives are tied to the larger issue of corporate social responsibility (CSR), the idea that companies have obligations not just to their investors but also to their stakeholders, society, and the environment. Many corporations driven to comply with increasing government regulations and pressure from shareholders are turning to the International Organization for Standardization (ISO) for guidance with implementing green and CSR programs. Similar to the ISO 9000 standard for quality, the ISO 14000 standard for environmental management systems (EMS) establishes best practices and benchmarks for green initiatives, and the ISO 26000 standard for corporate social responsibility establishes a framework for the development of CSR standards. Government agencies and companies concerned with sustainability issues will adopt these standards and ask their suppliers and vendors to follow suit. The green strategy is also aligned with the government contract compliance initiatives and company's corporate social responsibility initiatives. Today the mission of each firm is to operate their business in the most environmentally-friendly way. This includes:

- Establishing a green product offering from key vendors for national distribution and clearly identifying those products in their marketing materials, including their catalog and web site.
- Purchasing green products from their suppliers.
- Reducing waste and recycling & reusing materials at every opportunity.
- Reducing their electrical energy consumption.
- Designing distribution routes to minimize fuel consumption.
- Encouraging car pooling and responsible business travel.
- Repairing rather than throwing away whenever possible.

- Receiving electronic POs, invoices, and other business documents from vendors and customers whenever possible.
- Encouraging their customers to sign up for Electronic Invoicing via fax, email, or the web to reduce paper usage.

4. Gaining sustainability through green supply chain management

Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Implementing a sustainable development approach within a company is a horizontal task, inasmuch as it impacts on almost all the company's functions. Green is a subset of the broader world of sustainability. Sustainability incorporates endeavors such as fair labor practices, human rights, and community responsibility, while green includes things that impact the environment. Companies are considering redesigning their long and complex supply chains to reduce transportation costs and the associated carbon footprint generated by moving goods long distances. In the next several years we will be hearing more about Supply Chain Sustainability or the Green Sustainable Supply Chain. A Green Sustainable Supply Chain can be defined as "the process of using environmentally friendly inputs and transforming these inputs through change agents whose byproducts can improve or be recycled within the existing environment. This process develops outputs that can be reclaimed and re-used at the end of their life-cycle thus, creating a sustainable supply chain." The whole idea of a sustainable supply chain is to reduce costs while helping the environment. Many people would argue that being environmentally friendly increases your costs.

5. Conclusion

Businesses can position themselves anywhere along the spectrum of the green chain, from complying with regulations and choosing equipment like bio-diesel engines or low-energy-consuming light bulbs for their facilities. They can position themselves to move ahead of the curve and be at the forefront in shaping and fixing the environment by redesigning the overall network by pushing for new regulations, developing new products, and beginning to redesign their supply chains to include suppliers and transportation mode selections. There are many ways in which businesses can transit to a green supply chain; however, it is important to realize that it is difficult to achieve results without strong focused leadership. Senior management has to lead the effort to move towards a green supply chain and provide the resources for the

transition. Many businesses have documented an intent or plan to implement a green supply chain, but without the necessary resources, both financial and manpower, any impact will be minimal. In the future, companies will be moving to a sustainable supply chain. The harsh reality is that we need to change what we are doing from a supply chain standpoint in order to ensure that future generations will have resources to use in their lifetime. The benefit of implementing a green sustainable supply chain is that we can improve the profitability of our company and help the environment. Green can not only be profitable but also become necessity to pay our dues for the concern of environment at large. Being at one end or the other of the spectrum is not necessarily good or bad, it is just different depending on the dynamics of a particular business.

References

1. Bacallan, J.J. (2000). Greening the supply chain. *Business and Environment, 6, 5*, 11-12.
2. Bowen, F.E., Cousins, P.D., Lamming, R.C., and Faruk, A.C. (2001). Horses for courses: explaining the gap between the theory and practice of green supply. *Greener Management International, Autumn*, 41-60.
3. Fiksel, J. (1996). *Design for Environment: Creating Eco-Efficient Products and Processes*. New York, NY: McGraw-Hill.
4. Hall, J. (2003). *Environmental supply chain innovation*. Sheffield: Greening of the Supply Chain, Greenleaf.
5. Min, H., Galle, W. (1997). Green purchasing strategies: trends and implications. *International Journal of Purchasing and Materials Management, 4*, 10-17.
6. Rao, P. (2002). Greening of the supply chain: a new initiative in South East Asia. *International Journal of Operations & Production Management, 22, 6*, 632-55.
7. Rao, P., Holt, D. (2005). Do green supply chains lead to competitiveness and economic performance? *International Journal of Operations & Production Management, 25, 9*, 898-916.
8. Sroufe, R. (2003). *A framework for strategic environmental sourcing*. Sheffield: Greening the Supply Chain, Greenleaf.
9. Walton, S.V., Handfield, R.B., Melnyk, S.T. (1998). The green supply chain: integrating suppliers into environmental management process. *International Journal of Purchasing and Materials Management, Spring*, 2-11.
10. Wu, H.J., Dunn, S.C. (1995). Environmentally responsible logistics systems. *International Journal of Physical Distribution & Logistics Management, 25, 2*, 20-38.

THE IMPORTANCE OF RFID TECHNOLOGY IN LOGISTICS 4.0 IN THE AUTOMOTIVE COMPANY

Ryszard BARCIK

University of Bielsko-Biala; rbarcik@ath.bielsko.pl, ORCID: 0000-0002-8825-7251

Abstract: The article provides the reader with information on the role of automatic radio frequency identification technology – RFID in improving work in an automotive company's warehouse. The evolution of the RFID method is described and the system construction is characterized. Moreover, the areas in which RFID is applied are expounded upon. The benefits of the RFID technology in the automotive company's warehouse are also pointed out. as well as its importance for improvement of warehouse operations.

Keywords: RFID Technology, Logistics 4.0, Automotive Industry.

1. Introduction

The complexity of the tasks facing modern logistics resulting from the growing competition on the market and the constantly expanding customer requirements, as well as the internationalization of business are just some of the challenges that almost all enterprises face today. However, no company can stay in business if it does not overcome potential and actual logistics problems.

The condition for success in modern logistics is the implementation of modern technologies. There is, therefore, a need to advance the introduction of comprehensive and innovative solutions ahead of time, not as a remedial action. Sometimes such changes are revolutionary and not evolutionary. One of such solutions is applying the technology of automatic radio identification – RFID. The implementation of RFID in the automotive industry has brought a number of benefits and greatly facilitated warehouse work through the speed of reading data, thereby saving time and eliminating human error.

The aim of the article is inform the reader of the characteristics and background of RFID technology.

2. The evolution of RFID system

The idea of automatic identification of goods was brought to life in the 1930s, but it was necessary to wait around 40 years for its dissemination, when the growing need for improving trade have accelerated standardization work. Indeed, the first goods marked with an individual code appeared in American supermarkets in 1974.

Although the history of RFID began in 1948 with the development of the concept of passive RFID systems, in the 1980s, the technology developed to the point of being extensively used in the areas of personal access, animal identification, regulation of tolls and identification of luggage at airports. The 90s of the twentieth century was the period in which RFID became part of everyday life and a business commonality. Standardization activities, ensuring wider use of RFID, were, however, taken only in 2000. Well-known global companies that now implement RFID technology for electronic product labeling include: Wal-Mart, Target, Albertsons, Metro, Tesco, Max & Spencer, Procter & Gamble and Gilette (Niemojewski, 2007). Currently, RFID finds wider and wider applications in logistics, public transport and security systems, as well as in the electronic payments market. RFID technology will replace in the near future the bar code system for marking goods, which will increase the efficiency of transport, storage and the process of selling goods. The huge potential that this technique can give is quickly noticed.

Modern radio frequency identification (*Radio Frequency IDentification*) technology is used to automate numerous processes in various areas of the economy – in public administration, in industry, commerce, science and medicine, for example (Gotfryd, Jankowski-Mihułowicz, Kalita, 2011). Accordingly, this technology will redefine the entire existing supply chain by including 'intelligence'. If products are equipped with RFID tags and there are readers at every stage of the supply chain, the paths of these products through this can be mapped out and bottlenecks removed.

Radio frequency identification technology is a cross-cutting technology that is considered the next wave of IT revolution. RFID supports innovation, economic growth and global trade in the same way as IT. However, RFID technology is still in the initial implementation phase. Researchers agree that the adoption and dissemination of RFID is not yet fully understood and understood.

3. RFID construction

The central element in RFID technology that accelerates its further rapid development and use is the electronic product code EPC (Electronic Product Code). The Electronic Product Code is a kind of serial number, unique on a global scale, which can be described as the successor of

the standard bar code. It is used in conjunction with an RFID system and it is a coding scheme that allows unique identification of individual objects, such as individual goods, pallets, packages and boxes. By marking the product with a number (which usually takes place in the form of a sticky label, the so-called 'tag'), it is possible to identify the location of each product within the supply chain. RFID tags are microchips that store and send data. Such a tag consists of three parts: a chip, an antenna and a packaging (a paper label, a glass capsule or a piece of plastic) that connects the other elements. The information is read in a wireless way, at a distance of several centimeters, to even meters from the reader (Bucharski, 2005).
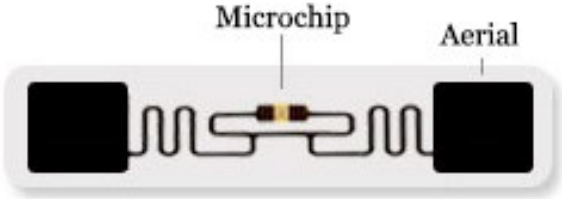
Figure 1. Construction of RFID chip. Adapted from: http://rfid.zone/.

The microchip is equipped with several hundred bits of memory potential and the data saved, includes above all, a unique number that refers to a specific user's database. To read this data from the RFID tag, an RFID reader is needed. When the antenna receives the signal (electromagnetic energy) from the reader's antenna, it sends a feedback signal in the form of radio waves containing information on the content of the microchip memory. The electronic reading and writing of data using radio technology is carried out by means of data exchange between the label and the tag (otherwise known as a 'transponder'). The reader then transfers the data obtained in this way to the device in which they will be stored. This device can be, for example, a system computer (Palonka, 2007). The structure of the RFID system consists of several basic elements. They are presented in the figure below.

Figure 2. Elements of RFID system. Adapted from: Milanowicz, 2012.

The crucial element of RFID is the tag, i.e. the transponder. It has a miniature form and is placed on individual products or packaging. The tag contains a reference to the manufacturer's database or the distributor of a specific product. The information about the product and its

routing can be supplement and edited. The transponder can transmit this information on coded demand. Each tag is built from memory (so-called memory tags) or from memory and processor (tag tags), and includes an antenna that allows data transmission and which is usually placed on the tag isolator layer (Juszka, Janosz, Tomasik, Lis, 2013).
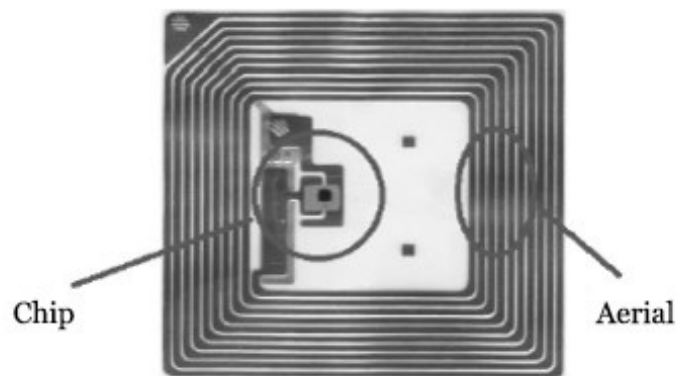
Figure 3. Construction of the tag identifier in the RFID system. Adapted from: Juszka, Janosz, Tomasik, Lis, 2013.

The data acquired through the transponder is transferred to the reader. In turn, the reader also performs a number of tasks, which include, first of all, issuing various commands related to the collection and storage of data to transponders. The principle of operation of the reader is that it receives data sent by the transponder, and then decodes it and transmits it to the system computer. It should be added that there are both fixed readers, for example, placed in the warehouse gate, mobile readers on forklifts, as well as those held by employees (Kanicki, 2012). The last element of the RFID system is a computer with software that contains the operating system necessary to run an application related to the functioning of the RFID system and the reception of data transferred by the tag via the reader. Such communication between individual RFID elements and the computer is possible thanks to special controllers.
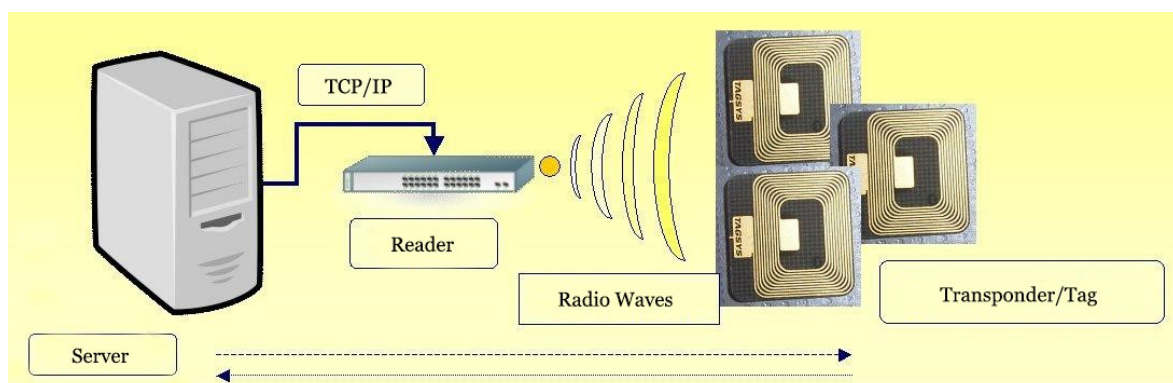
Figure 4. The method of data transfer in RFID technology. Adapted from: https://www.bankier.pl/ wiadomosc/Historia-i-dzialanie-technologii-RFID-1985822.html.

4. Areas of RFID Applications

RFID technology can be used to identify and to track movements, as well as to enable detection and the counting and sorting of various products and objects. RFID tags are placed in contactless entry cards, e.g. to the premises of some company, in all kinds of access cards to specific rooms, e.g. in hospitals or in systems recording work time. In many hypermarkets (e.g. Empik), very small RFID tags are hidden in products so that when the product is illegally removed, hence, bypassing the cash register, they inform the control gate, and as a result act as security against theft.

Logistics is one of the most important applications of RFID technology. This results from many premises, which include, above all, the ever-growing information needs of logistics supply chains. This information is one of the most important elements of managing individual operations and logistics processes, because efficient flows of this information enable establishing connections between the company and suppliers, as well as integrating activities undertaken by the sphere of supply, production and distribution.

RFID systems are already widely used in security and access control in industrial logistics, in the identification of measuring samples or materials in research processes. Due to the multiplicity, diversity and complexity of factors affecting the operation of the RFID system, "the area of correctness of routing and activity are the most useful parameters that determines the possibility of widespread use of radio identification of objects in automated processes" (Gotfryd, Jankowski-Mihułowicz, Kalita, 2013).

The new technology also arouses great interest in trade. Indeed, retail chains use the technology on a large scale and are the main driver of its development. For example, one of the biggest American retail chains, Wal-Mart, has committed its suppliers to implement RFID codes in items supplied. For a company whose employees read codes per annum from over 5 billion packages, even the minimum reduction of time required for this operation means millions of dollars saved for the company (Ochab, 2004). This technology is also used to improve the flow of traffic. For example, in New York, there is an RFID based system that transmits data on vehicle speed to the Traffic Management Center and when it is too low, traffic lights are adjusted to eliminate congestion (Jakubski, Życiak, 2009).

The largest global carriers and logistic companies have also been working on projects using the discussed system. Delta Airlines has become interested in it, and in the Delta Airline system, travel luggage is marked and routed by electronic tags in order to completely eliminate the risk of loss or misplacement.

RFID is also recently been implemented in the aviation manufacturing industry. One aircraft manufacturer is working on an RFID system to identify components. These may include information on when and why it was repaired and how long it has been used. During routine reviews, these data will be read and updated by ground staff. This will improve the maintenance

process of components and reduce errors that occur when analogous information is registered manually.

While RFID technology has been known for several decades, its use on a larger scale began only when electronics were developed to the point of sufficient miniaturization and affordable cost (to the point of throw-away cheapness). Currently, RFID is the fastest growing technique in automatic identification. In addition, its wide application in everyday life makes it one of the most important trends in global IT (Bucharski, 2005).

Using it logistically primarily leads to improved deliveries. This is due to the fact that the automation of the process of obtaining data on products located in warehouses or on store shelves allows to eliminate any discrepancies in deliveries. In addition, it positively affects the reduction of mistakes when planning these deliveries, which in turn significantly translates into a reduction in financial losses, as well as the time needed to implement them. In the planning process, RFID contributes to ensuring the continuous availability of the assortment, which is achieved due to the constant control of the level of inventory in warehouses. As a result, it is much easier to find out which products are running out, and, therefore, which should be ordered, and which are in sufficient quantity to meet customer demand (Orłowski, Kaczan, Staszak, Tomaszuk, 2008).

5. Implementation of RFID technology in the motorization company

The company under study is a production company in the automotive industry. TI Poland is part of the TI Automotive group and specializes in the production of brake and fuel metal tubing, pumps and fuel pump modules and the assembly of plastic fuel tanks.

Due to the specifics of the performed activity, storage-type warehouses have become an indispensable part of the production system. The warehouse space of TI Poland amounts to a total of 10,300 sq m. It consists of two external warehouses with an area of 3,200 sq m, where molds for the production of tubing and castings, as well as parts needed for machine maintenance are held. Three internal warehouses hold component and raw materials, and finished assemblies. The warehouse structure is as follows: pipe warehouse, packaging warehouse, mold and parts warehouse, component warehouse, finished goods warehouse.

From the start materials warehouse, packaging and forms, as well as from the technical warehouse, materials are transferred for further production. The finished product warehouse fulfills the function of accepting, storing and dispatching final products to potential recipients. The logistics department oversees both warehouses. The staff consists of fifteen people involved in picking, unloading and loading pallets, securing products ready for shipment and moving packages. The warehouse manager is the direct warehouse management body.

The positive influence of RFID on the storage process is visible primarily in the way of loading and transporting containers and palleted goods to and from the warehouses, which are done through RFID gateways. Thanks to these gates, all tags that are on individual packages are read, which significantly shortens the time of the storage operations. Previously, it was necessary to introduce each item separately into the system. Interestingly, in the most advanced RFID technologies, it is possible to scan up to 400 transponders simultaneously, which can undoubtedly improve the work of the warehouse, because a few seconds are saved on scanning each pallet. It follows that RFID impact on a large scale of activity can reclaim up to several days within a year.
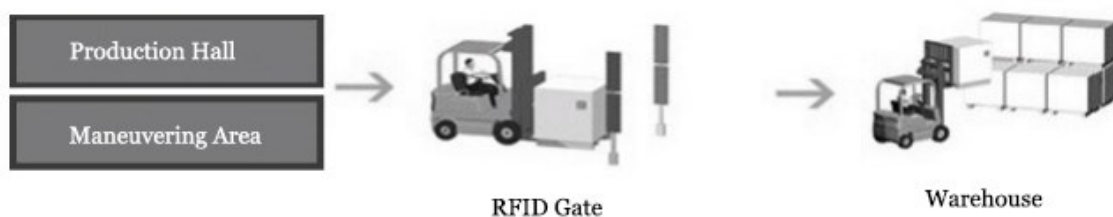
Figure 5. Application of RFID in the storage process. Adapted from: Milanowicz, 2012.

Companies commonly use a defective control system, or do not have it at all. What system is used is most often based on manual counting of all elements, using paper forms or Excel, input being manual, and date gained by scanning barcodes with a mobile reader (at best). The lack of automation of these processes leads to poor record-keeping and, as a consequence, to losses. This situation also took place in the discussed company (TI Poland). Before the implementation of the current technology, items were bar-coded and manually scanned. Often, discrepancies occurred, notably in the transfer of raw material - especially in that information was manually loaded into the computer. This also wasted time, and it is known that in order for the warehouse to work well, all documentation must be dealt with efficiently. The situation was similar when taking delivering of raw material. During unloading, the warehouseman was tasked with accurately counting containers, covers, pallets and palleted goods, filling-out shipping forms when doing so. The data was then cross-referenced with the shipper and the delivery documentation. Unfortunately, there were lots of discrepancies and delays in this area. It turned out that, to counter delay, with large deliveries, warehouse workers did not always count all packages or approximated. Containers were often returned not fully unloaded, and palleted boxed materials were unpacked and repacked. A frequent problem was delays on the warehouse dock, delays in the forwarding of items, and delays in return of pallets and shipping containers. This loss of control generated more and more costs for the company, hence the problem was researched and RFID technology implemented – firstly as a trial. Herein, only goods to be shipped to three selected customers were tagged, those with whom there was always the biggest problem when it comes to returning pallets and containers. In comparison with the process used with other clients and with previous activity, the trial proved successful.

The process is as follows. The tag (chip) mounted on a given item, in this case on the returnable packaging, is picked up by a reader located in the data collector or in the RFID gateway, and stored in the system. This process takes place remotely. There is no need to scan or manually input data. The readers can detect up to several hundred objects in their environment and immediately transfer data to a computer via Wi-Fi or LAN, hence palleted goods need not be broken open. A well-constructed database of a warehouse program and an RFID system coupled with it will indicate if there is anything missing or even the ownership of pallets or containers. By way of RFID systems, it is possible to control not only the inventory, but also the location and return dates of borrowed/returned returnable packaging. In the case of non-compliance with contracts, it is exactly known which of the contractors is responsible for losses. Thanks to such a solution in the system, it is clearly evident of what products are at which stage of transport, while admission and issue processes are accelerated, labor consumption is minimized, the number of mistakes is limited and data is verified at the initial stage of the supply chain. The identification process is therefore instant, which greatly affects the warehouse, as it speeds up its efficiency.

The replaced process did not perform well due to lack of detailed identification of entries and exits. The discussed program combined with the RFID system introduces to the company orderly transaction and a clear and detailed database of all material and container movements taking place in the company. Hence, bottlenecks or breakdowns can be quickly identified and remediated. Although the exact effects of full implementation of the new system in the organization will have to wait a bit longer due to the fact that the project is still in the experimental stage, great benefits are already noticeable.

References

1. Bucharski, P. (2005). RFID w 2005 r. – największe problemy stojące przed technologią jutra. *Gospodarka Materiałowa i Logistyka, 2,* 19.
2. Gotfryd, M., Jankowski-Mihułowicz, P., Kalita, W. (2011). *Zagadnienia bezpieczeństwa we współczesnych systemach RFID. Nowoczesne systemy łączności i transmisji danych. Szanse i zagrożenia.* Warszawa: Wolters Kluwer Polska, 136.
3. Gotfryd, M., Jankowski-Mihułowicz, P., Kalita, W. (2013). *Zagadnienia bezpieczeństwa we współczesnych systemach RFID. Nowoczesne systemy łączności i transmisji danych na rzecz bezpieczeństwa. Szanse i zagrożenia. Część I.* Warszawa: Wolters Kluwer Polska, 135.
4. *Historia i działanie technologii RFID.* Available online https://www.bankier.pl/ wiadomosc/Historia-i-dzialanie-technologii-RFID-1985822.html, 05.05.2019.

5. Jakubski, B., Życiak, M. (2009). Rozwój oraz obszary zastosowań technologii RFID. *Pomiary, Automatyka, Kontrola, 7*.

6. Juszka, H., Janosz, R., Tomasik, M., Lis, S. (2013). Stanowisko do badania efektywności automatycznej identyfikacji towarów w technologiach EAN oraz RFID. *Inżynieria Rolnicza, 4,* 18.

7. Kanicki, T. (2012). Wykorzystanie technologii RFID w transporcie. *Logistyka, 54*.

8. *Konstrukcja chipa RFID*. Available online http://rfid.zone/, 05.05.2019.

9. Milanowicz, M. (2012). Szanse i zagrożenia społeczne stosowania technologii RFID. *Zeszyty Naukowe Uniwersytetu Szczecińskiego, 27*.

10. Niemojewski, P. (2007). *Wprowadzenie do technologii RFID*. Konferencja „Płatności bezstykowe – dziś i jutro". Warszawa: Medien Service, 18.05.2007.

11. Ochab, J. (2009), *Elektroniczne metki*. Available online www.networld.pl, 05.05.2019.

12. Orłowski, A., Kaczan, K., Staszak, A., Tomaszuk, E. (2008). *Analiza tendencji rozwoju technik RFID oraz laboratorium badawcze technik RFID*. Warszawa: Instytut Łączności, 38.

13. Palonka, J. (2007). Wykorzystanie technologii RFID w logistyce. In T. Porębska-Miąc, H. Sroka (Eds.), *Systemy Wspomagania Organizacji SWO 2007* (p. 8). Katowice: Wydawnictwo Akademii Ekonomicznej.

CONFLICTS IN PROCESS MANAGEMENT IN ENTERPRISES

Jolanta BIJAŃSKA

Silesian University of Technology, Faculty of Organization and Management; jolanta.bijanska@polsl.pl,
ORCID: 0000-0002-2247-0623

Abstract: The publication shows the research results in the field of conflicts arising within the framework of process management in selected manufacturing enterprises. The purpose of the research was to find answers to two questions: 1) what are the most frequent conflicts in process management? 2) when conflicts are the cause of success and when process management fails? In the course of the research, methods were used, which included the literature studies, surveys, analysis and synthesis. The findings of the research were used to formulate recommendations on how to resolve conflicts in process management.

Keywords: types and causes of conflicts, conflict management, process management.

1. Introduction

Process management is currently one of the most extensively discussed concepts in theory and in practice. The implementation and use of such a concept requires complex changes to be made, including many elements of the process management system, focused on improving the efficiency and effectiveness of business activities in today's dynamic and competitive environment.

The application of the process management concept is also related to chances for improving the operations of Polish hard coal mining enterprises. For this reason, a model of a process management system for these enterprises has been developed (Bijańska, and Wodarski, 2019). For the development of guidelines for its implementation and use, research was conducted in other manufacturing enterprises, characterized by knowledge and experience in the field of process management. In the course of these studies it was observed that the management of these enterprises emphasised the issue of conflicts. It was noticed that managers indicated different types and causes of conflicts, and that the appearance of conflicts was perceived and treated differently by them, which resulted in defining the conflict as a source of successes or failures in process management. This was the basis for an in depth research on conflicts in process management aimed to address the following two research questions:

  1) Which conflicts are most frequent in process management?
  2) When conflicts are the cause of success and when process management fails?
 This publication summarizes the most significant research findings in this area.

2. Research methods

The research was conducted in three stages, in which different research methods were used.

In the stage I, the literature study was conducted on the types and causes of conflicts, as well as views on conflicts and ways of responding to their occurrence.

In the stage II, a questionnaire was prepared and a questionnaire survey was conducted with the management of selected production enterprises.

In the stage III, based on analysis and synthesis of research results obtained in stages I and II, recommendations on how to cope with conflicts in process management in order to achieve effectiveness and efficiency of the application of this management concept were presented.

3. Results of the research

Stage I of the research

The literature on process management so far has shown that the implementation and functioning of this concept in enterprises encounters many issues and barriers, including conflicts (Bitkowska, 2013; Bitkowska, et al., 2011; Grajewski, 2007, 2009, 2012; Kraśniak, 2009; Maciejczyk, 2011). It should be emphasized, however, that no detailed and comprehensive considerations were presented concerning types and causes of conflicts in process management, as well as views on conflicts and ways of responding to them by management. This is why the literature on the occurrence of conflicts has been reviewed.

In the search for answers to the first research question, it was concluded that there are many types of conflicts presented in the literature, depending on the criterion chosen. In the context of the process management concept, the dimensional criterion, taking into consideration the parties to conflicts, is of major importance (Cowling, and Mailer, 1990; Karney, 1998; Retter, 2005; Wojtoszek, 2014; Omisore, and Abiodun, 2014). The following conflicts can be distinguished here:

- individual, caused by internal tension in the employee,
- interpersonal, caused by tension between two or more employees,
- inter-group, caused by the competition of groups in the enterprise.

These conflicts can take various forms (Stoner, and Wankel, 1997), including:

- evident, when employees openly manifest the causes and objectives of conflicts,
- hidden, when the causes of conflicts are not revealed or are indirectly revealed,
- organised, when conflicts take place according to accepted rules,
- not organised, when conflicts are spontaneous.

Christopher Moor's 'Circle of Conflict' (Moor, 2012) is also crucial in considering the types of conflicts that may be related to the implementation and application of process management. It distinguishes between five types of conflict, which are caused by specific causes. Especially these are:

1. Data conflicts that arise as a result of the lack, limitation or discrepancy of information available to the parties (conflict participants), which may be due to different methods of data collection, processing or interpretation. These conflicts are usually accompanied by mutual accusations of concealment, manipulation of information or intentional misrepresentation;

2. Relationship conflicts which are associated with the negative attitude of employees, especially with negative emotions arising in situations of disagreement or misunderstanding. They often have no objective reasons and may be triggered by misperceptions, stereotypes, bad communication, revengeful behavior and clashes of opposing personalities, and temperaments. These conflicts are usually characterized by unfriendly atmosphere and disturbances in cooperation;

3. Values conflicts which are caused by different behaviors and attitudes of employees, resulting from the system of values adopted by them: ideology, ethical and religious principles, but also habits and preferences. The strength of these conflicts is enhanced by the exposure of one's own values without any attitude of tolerance towards values respected by the other party. These conflicts are among the most problematic to resolve in practice;

4. Conflicts of interest, which are associated with an impediment of the ability to meet specific needs. They concern interests:
   - material (e.g. unequal distribution of resources, money or goods),
   - procedural (e.g. rules defining the allocation of promotions, awards),
   - psychological (e.g. trust, respect, security, justice);

5. Structural conflicts that arise from the structure of the situation in which employees are placed. They often occur as a result of organizational changes, improper coordination of teams, new or unclear tasks, duties and competences for particular positions, time pressure (a barrage of tasks or problems), or poor communication. These conflicts may be the starting point for conflicts of relations, data or values.

In search of answers to the second research question, it was found that in the literature views on conflicts and ways of responding to their occurrence by management are most often described in evolutionary terms (Robbins, and DeCenzo, 2002; Kisielnicki, 2005; Robbins, and Judge, 2012).

The first view is related to the classical school of management. It implies that conflicts are bad because they only have a negative impact on the organization and are a sign of insufficient communication, lack of openness and trust between people and managers' inability to manage. In this view, managers should avoid conflicts and prevent their arising and disclosure.

The second view is associated with the school of interpersonal relations. It is based on the full acceptance of conflict as an unavoidable and not necessarily harmful occurrence, as conflict can be a source of change and a solution to problems. In this view, managers should reduce the negative effects of conflicts and strengthen the positive ones.

The third view is connected with modern management theory. It stipulates that conflicts are a positive force and are essential for the enterprise to function efficiently. Within this view it is recommended to apply the concept of conflict management, under which managers should skillfully stimulate conflicts in order to force employees to take a specific attitude, creativity, innovation and initiative (Rummel-Syska, 1990; Buhler, 2002; Ratajczak, 2007; Bieniok, 2011). According to this view, the role of the managerial staff is to ensure that an appropriate level of conflict is maintained, at which the enterprise functions best. It is thought that too low a level (intensity) of conflict in an enterprise inhibits its effectiveness as a result of stagnation, while too high a level leads to chaos, distraction, antipathy and thus contributes to a decrease in effectiveness (Pocztowski, 1998; Penc, 2000; Hatch, 2002). Maintaining an appropriate level of conflict requires conflict management skills with particular emphasis on constructive conflict resolution.

It must be highlighted that although the views presented were dominant in the literature at various times, all of them still occur in real enterprise situations. It is thought that regardless of the recommendations presented in the management science, each person presents a specific, relatively stable attitude to conflict and a corresponding way of responding to its occurrence, which is related to his or her personality. In psychology, personality is a theoretical construction that enables one to assess the functioning of a person from the point of view of his or her ability to adapt to the environment. In considerations of personality, its traits are accentuated: extroversion, kindness, conscientiousness, emotional stability, and openness to experience. It has been proven that these traits are of a vital role in explaining individual human behaviors such as control placement, Machiavellianism, self-esteem, self-control and risk taking (Bolton, 1986; Witkowski, 1999; Robbins, and DeCenzo, 2002). The way people behave is also influenced by their temperament. It is described as a set of relatively constant characteristics of behavior and action, enabling qualification of people to types such as: 1) sanguine, balanced and active type, 2) phlegmatic, strong, balanced and slow type, 3) choleric, unbalanced and stimulated type, violent, 4) melancholic, weak, passive type. The indicated personality traits

have an influence on the behavior of people in conflict situations. As a result of research conducted in this field, five basic ways of responding to conflicts were identified (Dąbrowski, 1991; Chełpa, and Witkowski, 1999; Munduate, et al., 1999; Quinn, et al., 2007). These methods, called styles of behavior, were determined in relation to the assertiveness of people and their attitude towards cooperation. It is assumed that assertive people are characterized by self-confidence, decisiveness, striving to achieve their goals, determined behavior, without fear and hesitation or aggression. However, cooperation is manifested in the cooperation for accomplishing outcomes that are beneficial for both sides, despite the fact that in a given situation one can accomplish outcomes that are beneficial only for one's self. Assertiveness and cooperation are independent traits, each person can be characterised as more or less assertive and more or less cooperative. The combination of these qualities determines the specific ways people react to conflicts. In particular:

1) Low assertiveness and low cooperativeness lead to a reaction called *avoidance*. People with such traits withdraw from conflicts, consciously fail to notice their existence (e.g. by deliberately dealing with other issues), diminish the importance of conflicts (e.g. convincing themselves and others that it is not a problem), try to wait it out, avoid confrontation, ignore conflicts in silence because they do not want to prove their own reasons or consider the views of the other party. This type of reaction derives from the belief that conflicts are a threat and that fear and emotional tension connected with it are so strong that they decide to withdraw from the conflict;

2) Low assertiveness and high cooperativeness lead to a reaction known as *submission*. People with such traits are able to give up their own views, objectives and interests. Conflicts are treated as a threat to the harmony and stability of the desired cooperation, so they give way to the other party, adapt to their views, objectives and interests and neglect their own;

3) Average assertiveness and average cooperativeness lead to a *compromise* reaction. People with such traits accept the possibility of giving up part of their interests to others, while at the same time trying to gain some benefit by giving the other party the right to part of them. Compromise is then based on the belief that agreement is feasible if everyone is satisfied with achieving only part of their own needs and goals and giving up part of it;

4) High assertiveness and high cooperativeness result in a reaction called *cooperation*. People with such traits cooperate with each other. They look for constructive solutions to build good relations and cooperation, while at the same time seeking to satisfy their own interests and those of the other side to the fullest. The cooperation aims to find the best solution for each of the parties. People who solve conflicts in this way usually strengthen their relationships and are able to achieve their goals and high performance;

5) High assertiveness and low cooperativeness result in a reaction called *competition*. People with such traits fight, compete with each other, are ambitious in resolving the conflict to their advantage, have a strong desire to prove the superiority of their own interests over those of the other party, strive to achieve all their own goals and needs, but at the expense of the other party.

The way in which people respond to conflict can be identified through research based on appropriate tests, the most famous of which is the ThomasKilmann questionnaire [https://kilmanndiagnostics.com/].

In short, on the basis of the presented considerations with regard to views on conflicts and ways of responding to their occurrence, a thesis can be formulated that conflicts can be a cause of success when the management treats them as a natural and necessary occurrence, which contributes, among other things, to solving organizational problems and stimulates the activity, involvement and creativity of employees. In order for conflicts to be a cause of success, management must have knowledge of how employees react to conflicts. This knowledge should be the basis for conflict management, the essence of which is the active influence of the management on conflicts, particularly the identification of conflict situations, as well as the selection and application of appropriate strategies and methods of conflict resolution. The literature includes many of them, indicating the conditions of application depending on the level of conflict intensity (Kłusek-Wojciszke, 2012). The author of this publication first and foremost considered those strategies and methods that may be used to constructively resolve conflicts, so that they can be a cause of success. Hence, on the basis of the analysis and synthesis of the considerations presented in the literature, a thesis can be formulated that conflicts can be a cause of success when employees treat them as a problem to be solved in the course of compromise, cooperation or competition. With regard to such employees, three strategies can be applied within the framework of conflict management, supported by methods of negotiation, mediation, arbitration (Mastenbroek, 1996; Chełpa, and Witkowski, 1999; Kłusek-Wojciszke, 2012). In particular, with regard to employees who respond to a conflict in a manner defined as:

1) *Compromise* a strategy called *lose-lose* can be applied. This strategy should not be seen in a negative light, as its name is derived solely from the fact that, when it is applied, the parties involved in the conflict give up some of their expectations they make concessions, but in order to reach an agreement and the resulting benefits for both parties. This strategy can use negotiations aimed at reaching an agreement between the parties to the conflict, which requires sacrificing by both sides, because both sides are losing something in order to gain something;

2) *Cooperation* a strategy called *win-win* can be applied. The idea behind this strategy is to bring about an exchange of views and information in order to find the best integrating solutions, which both sides of the conflict are content with. Mediation can be used in this strategy (Posthuma, at al., 2002; Wood, 2004; Bercovitch, 2006). The mediator is

an intermediary whose role in conflict resolution is to create favourable conditions for reaching a consensus. Consensus determines the agreement between the parties to the conflict it is therefore a generalized, common position and the best conflict solution achieved in the course of communication;

3) *Competition* a strategy called *win-lose* can be applied. The essence of this strategy is to lead to the resolution of a conflict in favor of one side. In this strategy, arbitration can be used, as long as the chosen arbitrator (e.g. specialist, expert) is an authority for the parties and they respect his or her opinion. An arbitrator, on the basis of the information obtained, without the participation and possibility of influencing the parties, resolves a conflict for the benefit of one of them.

Correct use of the indicated strategies and methods should have a positive impact on the functioning of the enterprise, and in the context of the process management concept, on its effectiveness and efficiency. This impact should be defined as an impact:

– motivational, because conflicts force the parties involved in them to be active, engaged in the implementation of tasks set before them, counteracting apathy and routine,

– innovative, because conflicts call for change and the confrontation of different opinions can bring new, often better solutions,

– identification, because employees in conflict situations are conscious of their own attitudes, values recognised by them, and also observe differences in the attitudes of others, which enables rational management of their behavior (Kisielnicki, 2005).

The abovementioned strategies shall not be effective when employees react to conflicts in a way defined as avoiding or submitting to them. In such situations, conflicts can be a cause of failure, so conflict management should be based on extinction and adjustment strategies that support the use of traditional methods, such as ignoring, reorienting and separating (Kłusek-Wojciszke, 2012), directed at reducing the level of emotional tension associated with conflict.

Stage II of the research

Based on the results of the literature study, a questionnaire was prepared for the survey (Table 1). It consists of 12 questions:

– from 1 to 3 are aimed at obtaining answers to the first research question,

– from 4 to 12 are aimed at obtaining answers to the second research question.

Table 1.
Sample of the survey questionnaire

When placing an X, please select one or more answers	
1.	**In what dimension do the most frequent conflicts in process management occur?**
	Individual, caused by the internal tension of one of the members of the process team.
	Interpersonal, caused by tension between at least two members of the process team.
	Intergroup, caused by tension between at least two process teams.

Cont. table 1.

2.	**What are the most frequent forms of conflicts in process management?**
	Evident the causes of conflict are openly manifested (e.g. by complaints).
	Hidden the causes of conflict are not revealed, they are revealed indirectly (e.g. through gossip).
	Organised conflicts take place according to accepted rules (e.g. as part of a strike).
	Un-organised conflicts are spontaneous.
3.	**Which types of conflicts are most common in process management?**
	Data conflicts caused by lack of access or unequal access to information, misinterpretation of information by parties, false information.
	Relationship conflicts caused by the negative attitude of the members of the process team related mainly to negative emotions appearing in the situation of disagreement, unwillingness to cooperate, ignoring or destroying the ideas of others, prejudices, indifference, favoring selected employees, lack of mutual trust.
	Values conflicts caused by different behaviors and attitudes of people, resulting from the system of values adopted by them — ideology, ethical and religious principles, but also habits and preferences.
	Conflicts of interest caused by lack of ability to meet needs: - material (e.g. unequal distribution of resources money, goods), - procedural rules (e.g. lack of rules defining the allocation of promotions, awards), - psychological (e.g. lack of respect, security, justice).
	Structural conflicts caused by organizational disorder, defective coordination of the work of the process team members, organizational changes implemented as part of the implementation and application of process management implying increased requirements for employees, new or unclear tasks, duties and responsibilities for individual positions, improper communication, moving decisions to higher organizational levels.
4.	**What is your view on conflicts?**
	Conflicts are bad and always have a negative impact. They destroy relationships, disorganize process management. They are the source of failure. If they arise, avoid them, do not participate in them.
	Conflicts are a natural and inevitable occurrence in process management. They do not have to be harmful. If they occur, they should be used to bring about positive changes and new solutions to problems. Properly managed, they can be a source of success.
	Conflicts are a source of success and are essential to keep employees engaged and to stimulate innovation. They must be stimulated and maintained at a certain level. Properly managed, they strengthen the position of the managers/process owners.
5.	**How would you rate your knowledge in the field of conflict management?**
	None or very low level.
	Average level.
	High level.
6.	**What is your source of knowledge in the field of conflict management?**
	None. I have never heard of it.
	Higher education, courses, training.
	Own interests and experiences work experience.
7.	**How do you assess your effectiveness of conflict management in the process team?**
	Low. I am not achieving my objectives.
	Average. I sometimes achieve my objectives.
	High. I always achieve my objectives.
8.	**How would you rate your knowledge of how the members of the process team react to a conflict?**
	None or low level. I have never been interested in it.
	Average level resulting from observation.
	High level resulting from observation and research (e.g. using appropriate tests).
9.	**Do you adjust your conflict management strategies to the way your team members respond to conflicts?**
	No. I think it does not matter.
	Sometimes. However, it is more important to choose the strategy that I prefer and know well.
	Always. I believe that only then can conflicts be resolved constructively and be a source of success.

Cont. table 1.

10.	*Please skip if the first answer in question 9 is answered with 'No'.* **What conflict resolution strategies are used by you according to the behavioral style of the members of the process team?**				
Strategies/*Behavioral style*	*Avoidance*	*Submission*	*Compromise*	*Cooperation*	*Competition*
extinction					
adaptation					
lose-lose					
win-win					
win-lose					
11.	**In what situations can conflicts be a source of success in process management?**				
	When members of the process team withdraw from conflicts, avoid confrontation, weaken conflicts, give up their own ideas, views and interests to maintain good relations.				
	When members of the process team are open to different, not only their own solutions, they share their knowledge and experience to obtain constructive ideas, cooperate and engage in the search for the best solutions satisfying all parties to the conflict.				
	When members of the process team compete against each other, they are ambitious in resolving the conflict to their advantage, they become strongly involved because they want the best possible solution for themselves.				
12.	**In your opinion, what is the importance of conflict management knowledge for effective and efficient process management?**				
	None or little meaning. Over time, conflicts disappear by themselves.				
	It is important, but experience and intuition are more important than theory.				
	It's very important. It gives guidance on how to deal with conflicts, depending on the specific situation. Combined with experience and intuition, it supports constructive conflict resolution and therefore contributes to effective and efficient process management.				

Source: own elaboration.

The research covered 9 large and 25 medium manufacturing enterprises[1] operating in the Silesian Voivodeship, which declared the use of process management concepts for at least four years and agreed to conduct a survey research among managers - process owners, who have been performing this role for at least two years. A total of 204 correctly completed questionnaires were collected.

The conducted research shows that (Table 1, part. I):

1. 77.9%, i.e. 159 respondents believe that in process management in enterprises the most frequent conflicts are interpersonal ones, which usually take the form of open (69.2% - 110 people)[2] and un-organised (93.1% - 148 people), and in terms of causes they can be described as structural (42.1% - 67 people), interests (30.2% - 48 people), relations (13.2% - 21 people), data (8.8% - 14 people), values (5.7% - 9 people).

2. 15.2%, i.e. 31 respondents believe that in process management in enterprises the most frequent conflicts are intergroup ones, which usually have an open form (90.3% - 28 people) and un-organised form (64.5% - 20 people), and in terms of causes they can be described as structural (41.9% - 13 people), interests (38.7% - 12 people), relations (9.7% - 3 people), data (6.5% - 2 people), values (3.2% - 1 person).

---

[1] The undertaken research is representative for the studied population of medium and large enterprises of the Silesian Voivodeship. The surveyed enterprises were selected from a group of 300 business entities due to the use of the process management concept.

[2] The percentage of responses received and the number of people who responded are given in brackets.

3. 6.9%, i.e. 14 respondents believe that in process management in enterprises the most frequent conflicts are individual ones, which usually have a hidden form (78.6% - 11 people) and un-organised form (92.9% - 13 people), and in terms of causes they can be described as conflicts of interest (35.7% - 5 people), relations (28.6% - 4 people), structural (21.4% - 3 people), data (7.1% - 1 person), values (7.1% - 1 person). Moreover, the conducted research shows that (Table 1, part. II).

4. 69.6%, i.e. 142 respondents believe that conflicts in process management are natural and inherent, and not necessarily a source of failure because they can be used to bring about positive change, meaning that properly managed conflicts can be a cause of success. Among the respondents:
   - 47.2%, i.e. 67 people declared the average level and 40.8%, i.e. 58 people declared a high level of knowledge on conflict management, acquired in the course of higher education, courses and training (62.7% - 89 people), also in their own scope and during work experience (37.3% - 53 people),
   - 62%, i.e. 88 people stated that sometimes and 38%, i.e. 54 people stated that always when managing conflicts, they achieve their objectives.

5. 21.6%, i.e. 44 respondents believe that conflicts occurring in process management are a source of success and are necessary to keep employees engaged, stimulate innovation, and therefore it is important to stimulate conflicts and keep them at a certain level. Among the respondents:
   - 88.6%, i.e. 39 people declared a high level and 11.4%, i.e. 5 people declared an average level of knowledge on conflict management acquired during higher education, courses and training (52.3% - 23 people), and also in their own scope and during work experience (47.7% - 21 people),
   - 72.7%, i.e. 32 people stated that always and 27.3%, i.e. 12 people stated that sometimes when managing conflicts, they achieve their objectives.

6. 8.8%, i.e. 18 respondents believe that conflicts occurring in process management are a source of failure, because they always cause adverse effects, destroy relationships, disorganize process management, and when they arise, they should be avoided and not participated in. Among the respondents:
   - 72.2%, i.e. 13 people declared none or low level and 27.8%, i.e. 5 people declared an average level of knowledge on conflict management acquired during higher education, courses and training (61.1% - 11 people), also in their own scope and during work experience (38.9% - 7 people),
   - 88.9%, i.e. 16 people stated that never and 11.1%, i.e. 2 people stated that sometimes when managing conflicts, they achieve their objectives.

The research also shows that (Table 1, part III):

7. 68.1%, i.e. 139 respondents believe that their knowledge of how their process team members react to conflict is at an average level and is the result of observations. Among the respondents:
   - 63.3%, i.e. 88 people declared that they always adjust their conflict management strategies to the way their process team members react to conflicts, because only then can conflicts be constructively settled and be a cause of success,
   - 36.7%, i.e. 51 people declared that they sometimes adjust their conflict management strategies to the ways the members of the process team react to conflicts, because their preferences are more crucial.

8. 18.1%, i.e. 37 respondents believe that their knowledge of how their process team members react to conflict is high and is the result of observations and research (e.g. using appropriate tests). Among the respondents:
   - 67.6%, i.e. 25 people declared that they always adjust their conflict management strategies to the way the members of the process team react to conflicts, because only then can conflicts be constructively settled and be a cause of success,
   - 32.4%, i.e. 12 people declared that they sometimes adjust their conflict management strategies to the ways the members of the process team react to conflicts, because their preferences are more crucial.

9. 13.7%, i.e. 28 respondents believe that their knowledge of how the members of the process team react to conflict is low or none at all, because it was not of interest to them. These respondents do not adjust their conflict management strategies to the way the process team members react to conflicts, believing that this is not significant. Moreover (Table 1, part IV).

10. Among 86.2%, i.e. 176 respondents who stated that their knowledge of how the members of the process team reacted to conflict was at a medium or high level:
    - 98.3%, i.e. 173 people declared that they use *extinction* (90.3% - 159 people) and *adaptation* (8% - 14 people) strategies in conflict resolution in relation to the behavioral style of members of the process team defined as *avoidance*,
    - 98.8%, i.e. 174 people declared that in conflict resolution, in relation to the style of behavior of members of the process team defined as *submission*, they use strategies of *adaptation* (84.1% - 148 people), *extinction* (10.2%, 18 people) and *lose-lose* 4.5% - 8 people),
    - 98.3%, i.e. 173 people declared that they used *win-win* (86.4% - 152 people) and *lose-lose* (11.9% - 21 people) strategies to solve conflicts in relation to the style of behavior of members of the process team defined as a *compromise*,
    - 98.9%, i.e. 174 people declared that they use *win-win* (88.1% - 155 people), *lose-lose* (10.8% - 19 people) strategies to solve conflicts in relation to the behavioral style of members of the process team defined as *cooperation*,

- 99.4%, i.e. 175 people declared that in solving conflicts in relation to the style of behavior of members of the process team defined as *competition*, they use strategies of *lose-win* (44.9% - 79 people), *win-win* (40.9% - 72 people), *lose-lose* (13.6% - 24 people). It should also be noted, that (Table 1, part V).

11. 76.5%, i.e. 156 respondents believe that conflicts can be a cause of success in the process management, when members of the process team are open to different, not only their own solutions, share knowledge and experience to obtain constructive ideas, cooperate and engage in the search for the best solutions, satisfying all parties of the conflict.

12. 15.2%, i.e. 31 respondents believe that the conflicts can be a cause of success in the process management when members of the process team compete with each other, are ambitious in the resolution of the conflict to their advantage, are strongly committed because they want to achieve the best possible solution for themselves.

13. 8.3%, i.e. 17 respondents believe that conflicts can be a cause of success in the process management, when members of the process team withdraw from them, avoid confrontation, weaken conflicts, give up their own ideas, views and interests to maintain good interpersonal relations.

14. 77.9%, i.e. 159 respondents consider that the knowledge of conflict management is very crucial because it provides guidance on how to deal with conflicts, depending on the specific situations, and in combination with experience and intuition it supports constructive conflict resolution and therefore contributes to the successful and efficient management of processes. 14.2%, i.e. 29 respondents believe that the knowledge of conflict management is vital, but not as important as experience and intuition. On the other hand, 7.8%, i.e. 16 respondents believe that the knowledge of conflict management is either not important at all or is of little significance, because conflicts disappear on their own.

Table 2.
Results of the research (100% = 204 respondents)

Part I. based on the answers to questions 1-3		
Dimensions of conflicts in process management	**Forms of conflicts**	**Types of conflicts**
Individual: 6.9% - 14 people	evident: 21.4% - 3 people hidden: 78,6% - 11 people	data: 7.1% - 1 person relationship: 28,6% - 4 people values: 7.1% - 1 person interest: 35.7% - 5 people structural: 21.4% - 3 people
	organized: 7.1% - 1 person unorganized: 92.9% - 13 people	
Interpersonal: **77.9% - 159 people**	evident: **69.2% - 110 people** hidden:30.8% - 49 people	data: 8.8% - 14 people relationship: 13.2% - 21 people values: 5.7% - 9 people interest: 30.2% - 48 people **structural: 42.1% - 67 people**
	organized: 6.9% - 11 people unorganized: **93.1%, 148 people**	
Intergroup: 15.2% - 31 people	evident: 90.3% - 28 people hidden: 9.7% - people	data: 6,5% - 2 people relationship: 9.7% - 3 people values: 3.2% - 1 person interest: 38.7% - 12 people structural: 41.9% - 13 people
	organized: 35.5% - people unorganized: 64.5% - 20 people	

Cont. table 2.

Part II. based on the answers to questions 4-7			
View on conflicts of respondents	**Level of knowledge of respondents in the field of conflict management**	**Source of knowledge of respondents in the field of conflict management**	**Self - assessment of effectiveness of conflict management**
Conflicts are the source of failure: 8.8%-18 people	none or very low: 72.2% - 13 people average: 27.8% - 5 people high: -	none: - higher education: 61.1% - 11 people own scope, work experience: 38.9% - 7 people	low: 88.9% - 16 people average: 11.1% - 2 people high: -
Conflicts should be used to bring about positive changes - can be a cause of success: **69.6%, 142 people**	none or very low: 12% - 17 people average: **47.2% - 67 people** high: 40.8% - 58 people	none: - higher education: **62.7% - 89 people** own scope, work experience: 37.3% - 53 people	low: - average: **62% - 88 people** high: 38% - 54 people
Conflicts are a source of success - they must be stimulated and maintained at a certain level 21.6% - 44 people	none or very low: - average: 11.4% - 5 people high: 88.6% - 39 people	none: - higher education: 52.3% - 23 people own scope, work experience: 47.7% - 21 people	low: - average: 27.3% - 12 people high: 72.7% - 32 people
Part III. based on the answers to questions 8-9			
The level of knowledge of how the members of the process team react to a conflict		**Adjustment of the conflict management strategies to the way of team members respond to conflicts?**	
none or very low: 13.7% - 28 people		never: 100% - 28 people sometimes: - always: -	
average: **68.1% - 139 people**		never: - sometimes: 36.7% - 51 people always: **63.3% - 88 people**	
high: 18.1% - 37 people		never: - sometimes: 32.4% - 12 people always: 67.6% - 25 people	

Part IV. based on the answers to question 10 (100%=176 respondents)					
Conflict strategies used according to the behavioral style of the members of the process team	**Avoidance**	**Submission**	**Compromise**	**Cooperation**	**Competition**
extinction	**90.3% 159 people**	10.2% 18 people	0.6% 1person	-	-
adaptation	8% 14 people	**84.1% 148 people**	0.6% 1person	0.6% 1person	0.6% 1person
lose-lose	0.6% 1person	4.5% 8 people	11.9% 21 people	10.8% 19 people	13.6% 24 people
win-win	0.6% 1person	0.6% 1person	**86.4% 152 people**	**88.1% 155 people**	40.9% 72 people
win-lose	0.6% 1person	0.6% 1person	0.6% 1person	0.6% 1person	**44.9% 79 people**

Cont. table 2.

Part V. based on the answers to questions 11-12	
Conflicts can be a source of success in process management	**when members of the process team:**
	withdraw from conflicts, give up their own ideas, views and interests to maintain good relations: 8.3% - 17 people
	are open to different, not only their own solutions, cooperate and engage in the search for the best solutions satisfying all parties to the conflict: **76.5% - 156 people**
	compete against each other, they get strongly involved because they want the best possible solution for themselves: 15.2% - 31 people
The importance of conflict management knowledge for effective and efficient process management	none or little meaning - over time, conflicts disappear on their own: 7.9% - 16 people
	it is important, but experience and intuition are more important than theory: 14.2% - 29 people
	it's very important - combined with experience and intuition, it supports constructive conflict resolution**: 77.9% - 159 people**

Source: own elaboration.

Stage III of the research

Based on the analysis and synthesis of the results achieved during the Stages I and II of the research, conclusions were formulated that provide answers to the defined research questions.

Question 1: Which conflicts are most frequent in process management?

In process management in manufacturing enterprises, interpersonal, open and un-organized conflicts occur most often, caused by:

- the structure of the situation in which employees find themselves, including organizational disorder, defective work coordination, organizational changes implying increased requirements for employees, new or unclear tasks, duties and responsibilities for individual positions, poor communication, moving decisions to higher organisational levels,
- interests, in particular obstacles or inability to fulfill material and procedural interests or psychological needs.

Question 2: When conflicts are the cause of success and when process management fails?

Conflicts are a cause of success, if:

1) Managerial staff – process owners have a positive view on the occurrence of conflicts and consider them as necessary situations, which have to be properly managed in order to achieve the assumed objectives;

2) Managerial staff – process owners have at least medium, and preferably high level of knowledge (both theoretical and acquired in work experience) in the field of conflict management. The level of this knowledge is closely linked with:

- views on conflicts a high level of knowledge very often implies treating conflicts as a cause of success,
- achieving goals a high level of knowledge very often implies a high effectiveness of achieving the assumed objectives;

3) Managerial staff – process owners have at least an average, or preferably high level of knowledge about how the process team members react to a conflict and when this knowledge is applied by them when selecting a conflict management strategy. It is worth noting that the vast majority of managers who use their knowledge of how the members of the process team react to conflicts apply:

- an *extinction* strategy for a behavioral style defined as *avoidance,*
- an *adaptation* strategy for a behavioral style defined as *submission,*
- a *win-win* strategy for a behavioral style defined as *compromise,*
- a *win-win* strategy for a behavioral style defined as *cooperation,*
- a *win-win* strategy and a *win-lose* strategy for a behavioral style defined as *competition.*

The indicated choices of strategies in practice are not equivalent to the guidelines presented in the literature on the subject, in relation to

- a *compromise* style of behavior for which a *lose-lose* strategy is recommended,
- a *cooperation* style of behavior for which a *win-win* strategy is recommended,
- a *competition* style of behavior for which a *win-lose* strategy is recommended;

4) Employees – members of process teams are very open to different, not only their own solutions, sharing knowledge and experience to obtain constructive ideas, cooperating and engaging in the search for the best solutions satisfying all parties of the conflict. The indicated traits determine the behavioral styles defined as *compromise* and *cooperation*. Only a small group of managers believe that conflicts can be a source of success in the process management when members of the process team compete with each other, are ambitious in resolving conflicts to their advantage, are strongly committed to achieving the best possible solution for themselves. These traits determine the behavioral style defined as *competition*.

Conflicts are the cause of failure, if:

1) Managerial staff – process owners are very negative about conflicts and they treat them as a bad, unnecessary, destructive occurrence resulting only in adverse effects, destroying relations, disorganizing process management. Such a view results in the fact that process owners avoid conflicts, and if they occur on their own, they try not to participate in them hoping that they will disappear on their own;

2) Managerial staff, process owners are known for their lack or low level of knowledge (both theoretical and acquired in work experience) in the field of conflict management. Lack of knowledge or low level of knowledge directly affects:

- views on conflicts this often implies that conflicts are treated as a cause of failure,
- achieving objectives this often implies a lack or low effectiveness in achieving objectives;

3) Managerial staff, process owners have no or low level of knowledge about how to react to a conflict by members of the process team, and as a result, they do not take it into account in conflict management;

4) Employees, members of process teams withdraw from conflicts, avoid confrontation, weaken conflicts, give up their own ideas, views and interests to maintain good relations.

Based on the presented research results, the following recommendations on how to tackle conflicts in process management have been developed:

1. Conflicts that occur in process management should be considered as a potential cause of success, which means that if they occur, they should not be avoided, but utilized to increase the level of activity and involvement of process team members in the search for new, innovative solutions or improvements to existing problems, which is essential in the context of process improvement.

2. In order to properly handle conflict situations and use them to achieve specific objectives, managerial staff must possess knowledge of conflict management. A proper level of such knowledge enhances positive thinking about conflicts and also influences the achievement of assumed objectives. For this reason, it is essential to allow managers to gain this knowledge, both during their studies, courses or training, and also during work experience, which involves, among other things, the need to accept the possibility of committing mistakes.

3. Effective conflict management demands that managerial staff have knowledge of how to respond to a conflict by members of the process team, based not only on observations but also on specific tests. This knowledge should be properly utilized in the selection of conflict management strategies.

4. A strategy described as *win-win* seems to be the most appropriate for effective conflict management. In practice, it is used in reference to behavioral styles defined as *compromise*, *cooperation* and *competition*. When it comes to the latter, the *win-lose* strategy is also used, but only few managers believe that this style of behavior towards conflicts should be developed because it is not beneficial for enhancing interpersonal relations.

5. Organizational culture is of crucial importance, which should be targeted at the participation of process team members in the development of change concepts. Among employees' members of process teams, it is necessary to build an atmosphere of openness to changes and new and constructive solutions developed by them, as well as to share knowledge, engage, be creative and innovative, so that they adopt attitudes appropriate for searching for compromises, cooperation and (to a lesser extent) for competition.

Conclusions

Conflicts in process management are a typical occurrence and they are frequently used by managerial staff to increase the level of activity and involvement of process team members in searching for new, innovative solutions or improvements to existing problems. The conducted research has shown that the vast majority of managers perceive conflicts as a potential cause of success in process management. These managers have knowledge of conflict management, which they use in a proper way, for instance, by choosing a conflict management strategy to react to conflicts among members of process teams. It is worth emphasizing that in practice, conflict management strategies defined as *win-win*, *compromise* and *cooperation* strategies that enhance interpersonal relationships are preferred. Only few managers believe that conflicts can be a cause of success when process team members are strongly *competitive*, so they seldom use a strategy called *win-win*. This is perhaps due to the fact that in process management, integration and good interpersonal relations are crucial, especially among members of the process team and therefore the application of the *win-lose* strategy seems to be justified only between process teams. The presented findings show that treating conflicts as an opportunity to make improvements, high competence of the managerial staff in conflict management, as well as building an appropriate organizational culture focused on the participation of process team members in the development and implementation of improvements, all contribute to the effectiveness and efficiency of process management.

References

1. Bercovitch, J. (2006). Is There Method in the Madness of Mediation? Some Lessons for Mediators from Quantitative Studies of Mediation. *International Interactions*, *32,* 329-354.
2. Bieniok, H. (2011). *Metody sprawnego zarządzania*. Warszawa: Placet.
3. Bijańska, J., and Wodarski, K. (2019.10.04). *Model of process management system in enterprises of the hard coal mining industry*. Paper presented at V International Conference on Management – Economics – Ethics Technology (MEET 2019), Zabrze.
4. Bitkowska, A. (2013). *Zarządzanie procesowe we współczesnych organizacjach*. Warszawa: Difin.
5. Bitkowska, A., Kolterman, K., Wójcik, G., and Wójcik, K. (2011). *Zarządzanie procesami w przedsiębiorstwie. Aspekty teoretycznopraktyczne*. Warszawa: Difin.
6. Bolton, R. (1986). *People skills: how to assert yourself, listen to others and resolve conflicts*. New York: Simon § Schuster.
7. Buhler, P. (2002). *Zarządzanie*. Gliwice: Helion.

8. Chełpa, S., and Witkowski, T. (1999). *Psychologia konfliktów praktyka radzenia sobie ze sporami.* Wrocław, Taszów: Oficyna Wydawnicza UNUS.

9. Cowling, A., and Mailer, Ch. (1990). *Managing Human Resources.* London: Edward Arnold A division of Hodder & Stoughton Ltd.

10. Dąbrowski, P. (1991). *Praktyczna teoria negocjacji.* Warszawa: Przedsiębiorstwo Wielobranżowe Produkcyjno-Usługowe „SORBOG" Sp. z o.o.

11. Grajewski, P. (2007). *Organizacja procesowa.* Warszawa: PWE.

12. Grajewski, P. (2009). Uwarunkowania implementacji procesów do organizacji. In S. Nowosielski (Eds.), *Podejście procesowe w organizacjach* (pp. 381-395). Wrocław: Wydawnictwo Uniwersytetu Ekonomicznego.

13. Grajewski, P. (2012). *Procesowe zarządzanie organizacją.* Warszawa: PWE.

14. Hatch, M.J. (2002). *Teoria organizacji.* Warszawa: PWN.

15. Karney, J.E. (1998). *Psychologia w zarządzaniu.* Warszawa: Międzynarodowa Szkoła Menadżerów.

16. Kisielnicki, J. (2005). *Zarządzanie organizacją.* Warszawa: Oficyna Wydawnicza Wyższej Szkoły Handlu i Prawa im. Ryszarda Łazarskiego.

17. Kłusek-Wojciszke (2012). Metody zarządzania konfliktami w organizacjach. *Zeszyty Naukowe Instytutu Transportu i Handlu Morskiego*, 113.

18. Kraśniak, J. (2009). Uwarunkowania sytuacyjno-organizacyjne wdrażania organizacji procesowej. *Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu, 52,* 389.

19. Maciejczak, M. (2011). *Zarządzanie procesami biznesowymi w teorii i praktyce.* Warszawa: Wydawnictwo PJWSTK.

20. Mastenbroek, W. (1996). *Negocjowanie.* Warszawa: PWN.

21. Moore, W.Ch., (2012). *Mediacje. Praktyczne strategie rozwiązywania konfliktów.* Warszawa: Oficyna Wolters Kluwer business.

22. Munduate, L., Ganaza, J., Peiro, J., and Euwema, M. (1999). Patterns of styles in conflict management and effectiveness. *The International Journal of Conflict Management, 10(1),* 5-24.

23. Omisore, B.O., and Abiodun, A.R. (2014). Organizational Conflicts: Causes, Effects and Remedies. *International Journal of Academic Research in Economics and Management Sciences, 3, 6,* 118-136.

24. Penc, J. (2000). *Kreatywne kierowanie. Organizacja i kierownik jutra.* Rozwiązywanie problemów kadrowych. Warszawa: Agencja Wydawnicza Placet.

25. Pocztowski, A. (1998). *Zarządzanie zasobami ludzkimi.* Warszawa: PWE.

26. Posthuma, R., Dworkin, J., Swift M., (2002). Mediator Tactics and Sources of Conflict: Facilitating and Inhibiting Effects. *Industrial Relations,* No 41(1), pp. 94-109.

27. Quinn, R.T., Faerman, S.R., Thompson, M.P., and McGrath, M.R. (2007). *Profesjonalne zarządzanie. Kluczowe kompetencje kierownicze.* Warszawa: PWE.

28. Ratajczak, Z. (2007). *Psychologia pracy i organizacji.* Warszawa: PWN.

29. Retter, H. (2005). *Komunikacja codzienna w pigułce*. Gdańsk: Gdańskie Wydawnictwo Psychologiczne.

30. Robbins, S.P., and DeCenzo, D.A. (2002). *Podstawy zarządzania*. Warszawa: PWE.

31. Robbins, S.P., and Judge, T.A. (2012). *Zachowania w organizacji*. Warszawa: PWE.

32. Rummel-Syska, Z. (1990). *Konflikty organizacyjne. Ujęcie mikrospołeczne.* Warszawa: PWN.

33. Stoner J.A.F., and Wankel, Ch. (1997). *Kierowanie*. Warszawa: PWE.

34. Wojtoszek, K. (2014). Zarządzanie przez konflikt. Teoria przeciwko praktyce. *Prace Naukowe Wałbrzyskiej Wyższej Szkoły Zarządzania i Przedsiębiorczości, 26 (1),* 53-64.

35. Wood, J. (2004). Mediation Styles: Subjective Description of Mediators. *Conflict Resolution Quarterly, 21,* 437-452.

THE INFLUENCE OF SELECTED FACTORS ON PROJECT PERFORMANCE IN PROJECT-BASED ORGANIZATIONS: A QUALITATIVE COMPARATIVE ANALYSIS

Magdalena GĘBCZYŃSKA

Silesian University of Technology, Faculty of Organization and Management, Gliwice;
Magdalena.Gebczynska@polsl.pl, ORCID: 0000-0002-0463-0144

Abstract: Previous research demonstrates the importance of social capital, environmental complexity, goal orientation, and project performance. However, the influence of these factors on project performance is unclear and was examined singly, i.e., each factor was studied separately in connection with project performance. The aim of this paper is to examine which configurations of selected factors, such as goal orientation, social capital, and environmental complexity, affect project performance in project-based organizations. This paper argues that these factors simultaneously affect project performance, in different configurations. This study applies fuzzy set Qualitative Comparative Analysis (fs/QCA), which points to three configurations of conditions that influence project performance in project-based organizations. These findings help complement some of the results of previous studies on project performance.

Keywords: project performance, project-based organization, fuzzy-set qualitative comparative analysis.

1. Introduction

Today, organizations operate on a market where technological development is progressing faster and faster. Huge — often global — competition, shorter product life cycles and constant reorganization of business put increasing demands on companies. As a result of globalization, the application of new technologies, and a turbulent, complex environment, organizations must cope with the ongoing transformational process. In this context, the project-based organization (PBO) emerges as an ideal type of organizational structure to deal with the emerging features of the temporary and unique demands within a complex market.

The literature has several names for a project-based organization (Sydow et al., 2004; (Turner, Keegan, 2000, 2001): a project-based company (Jerbrant, 2013; Lundin et al., 2015), a project-based firm (Lindkvist, 2004; Prencipe and Tell, 2001), a project-oriented organization (Huemann, 2015), a project-oriented company (Gareis and Huemann, 2007), a multi-project

firm (Geraldi, 2009), a multi-project organization (Canonico and Söderlund, 2010), and a projectified matrix organization (Arvidsson, 2009).

Turner and Keegan (2001) defined a project-based organization as one in which the majority of the products or services delivered are against bespoke designs for customers. A project-based organization, also referred to as a project organizational structure, is a collection of diverse project participants (individual and team participants and organizations), and by combining their cooperation they can effectively implement projects (Trocki, 2014). The PBO is an organizational form in which the project is the primary unit for production organization, innovation, and competition (Hobday, 2000). Miterev et al. (2017) define a project-based organization as one which makes the strategic decision to adopt project, program, and project portfolio management as business processes to manage its work, and one which views itself as being project-oriented.

Despite the fact that the project-based or project-oriented organization has been recognized in the literature for almost 30 years (Gareis, 1991; Hobday, 2000; Lindkvist, 2004; Whitley, 2006; Cattani et al., 2011, Bocean, 2011; Pemsel and Wiewiora, 2013; Trocki, 2014; Kaczorowska, 2017), there has been no global view to indicate how different factors simultaneously affect project performance. Previous research has provided a broad view on single determinants or factors which affect project performance in project-based organizations. The purpose of this paper is to investigate what configurations of selected factors — such as goal orientation, social capital, and environmental complexity — influence project performance in project-based organizations, specifically Polish consulting firms. Achievement goal orientations are commonly measured in two ways: by mastery goal orientation and by performance goal orientation (Elliot and Church, 1997; Gong et al., 2013); therefore, further in the discussion goal orientations will be analyzed and divided into mastery goal orientation and performance goal orientation.

In this empirical study, a qualitative comparative analysis using fuzzy sets (fs/QCA) was adopted to examine the links between project results and selected conditions, such as mastery goal orientation, performance goal orientation, social capital, and the complexity of the environment. These factors were selected on the basis of a critical literature analysis. The first section of this paper is a brief review of the literature on a set of factors, namely variables affecting project performance. Then, the research methodology (qualitative comparative analysis of fuzzy sets) is presented. Finally, the results of the analysis and the application are discussed in the last section.

2. Theoretical background

There are many factors that affect project performance. These factors are connected with the project team, the resources and conditions of a particular organization, goal complexity, the environment of the organization and the project, and the complexity of a particular project, among other things. Based on an extensive review of the interdisciplinary literature, the following factors were selected: goal orientation, social capital, and environmental complexity. These factors will be discussed below.

The three basic constraints (called "the golden triangle") in project management — which are found in every project — are time, budget, and scope (Spałek, 2014). The success of a project is indicated by project performance. According to previous studies, it is not possible to design a single set of typical criteria for project success and performance, because every project has its own criteria based on the project's complexity, size, and unique features (Westerveld, 2003). Mainly, project success is based on the golden triangle, which includes cost, time, and quality (Drury-Grogan, 2014). If a project is completed within the expected budget and duration while maintaining the desired quality level, then that project is considered successful.

Project performance within an organization is a measure of how well the project has achieved its objective. A conceptual critical success factor model for projects suggested by Gudiene et al. (2013) organizes factors in seven major groups, namely external factors, institutional factors, project-related factors, project management/team member-related factors, project manager-related factors, client-related factors, and contractor-related factors. The performance of a project will be dependent on various factors, including project complexity, contractual arrangements, relationships between participants in the project, the competence of the project manager, and the abilities of the key members in the project (Leong, et al., 2014). Project performance is related to the outcome or perceived success of the project team in meeting project goals, budget, schedule, and operational efficiency considerations.

Goal orientation is a predisposition to adopt and pursue certain goals in achievement contexts (Dweck and Leggett, 1988; Van de Walle, 1997). In the achievement goal literature, two types of goals have by far received the most attention: mastery goals and performance goals. A performance goal has been also called an ego goal (Duda, 2001), an ability-focused goal (Ames, 1992), a relative ability goal (Midgley, et al., 1998), an extrinsic goal (Pintrich and Garcia, 1991), and a competitive goal (Roberts, and Ommundsen, 1996). A mastery goal has also been called a task goal (Duda, 2001), a learning goal (Dweck, 1999), and an intrinsic goal (Pintrich and Garcia, 1991). Mastery goals involve the aim of improving one's own performance and gaining task mastery, whereas performance goals reflect the pursuit of outperforming others and displaying superior performance (Ames, 1992; Dweck, 1986).

Research on the impact of achievement goal orientations in the context of the project primarily focuses on exploring how achievement goal orientations affect work engagement and performance in terms of team performance, rather than the overall performance of the project (Chi and Huang, 2014; Gong et al., 2013). Achievement goal orientations are usually measured in two ways: by mastery goal orientation and by performance goal orientation (Elliot and Church, 1997; Gong et al., 2013).

Team goal orientation captures the shared understanding of the extent to which a team emphasizes learning or performance goals and, consequently, helps to facilitate group decision-making, collaborative problem-solving, and intragroup coordination, which maintains the group's emphasis on learning or performance goals (Bunderson and Sutcliffe, 2003). A team-mastery goal orientation is a state when team members perceive themselves as working towards learning goals and having challenging tasks, whereas a team-performance goal orientation occurs when team members work toward favorable evaluations and promotions (Mehta et al., 2009). A team-mastery goal orientation is generally positively associated with commitment within teams, which in turn is expected to generate positive team and project performance. A team-performance goal orientation is a focus on demonstrating competence by receiving positive evaluations and outperforming others (Colquitt and Simmering, 1998; Dweck, 1999). Intrinsically motivated individuals desire to learn new things, to stretch their possibilities, and to strive to perform better in their work (Shalley et al., 2009), resulting in team-performance goal orientations being positively associated with team performance. Patanakul et al. (2016) state that a mastery goal orientation drives teams to perform assigned tasks better and more efficiently. Therefore, in a project context, it is expected that overall project performance is positively associated with team goal orientations.

Social capital provides information and controls benefits by creating relationships between people who could otherwise be disconnected in the social structure (Lang, 2004). It provides an opportunity to gain access to the resources embedded within and derived through actors' social network ties supporting the attainment of goals (Bartsch, et al., 2013). Di Vincenzo and Mascia (2012) suggest that through an appropriate management of social capital, project units can increase coordination and knowledge integration, in turn producing high levels of performance at the project level. More specifically, the social capital is useful not only in improving the performance of the project, but also in reducing the number of quality problems, which are some of the main causes of additional costs in construction projects (Vincenzo and Mascia, 2012). Project-based organizations thus need to mobilize their inner social capital to access distributed knowledge about their internal processes. Project researchers are aware of the importance of social interactions within and between organizations and their role as determinants of the project's performance. Bhandar et al. (2007) insist on the importance of intra-organizational social capital as a motivator to launch projects realization, as an integrator of diverse knowledge during project realization, and as a facilitator to achieve changes when the project affects the whole organization. Social capital, reflected in the intra-organizational

social connections of project team members, has been positively linked to learning (Bartsch et al., 2013) and to the integration of knowledge and project performance (Di Vincenzo and Mascia, 2012; Prencipe and Tell, 2001). Social capital has been conceptualized as a multidimensional construct (Nahapiet and Ghoshal, 1998) composed of three dimensions: structural capital (which is manifested in social interaction ties), relational capital (which is manifested in trust), and cognitive capital (which is manifested in a shared vision).

Many organizations have to deal with the dynamics, hostility and complexity of the environment in which they operate, trying to survive and be as competitive as possible. Environmental factors have a significant impact on the execution and performance of projects. The factors identified by Walker (1989) and Hughes (1989) that constitute the environment of projects are political, legal, institutional, cultural, sociological, technological (resources), economic, financial, and physical (infrastructure). The authors paid attention to some factors within the environment, that pose greater than others challenges to project's realization, management and organizational structure and suggested that these factors should form the main component of the management of the project's environment. Akanni et al. (2015) explored the impact of environmental factors on project performance, and they concluded that environmental factors have a positive impact on project success.

Complexity increases the perception of the comprehensiveness of the strategic decision-making process (Dess, and Beard, 1984) and hinders organizations from maintaining and meeting customer needs. Complexity in the business environment is generally defined as the proliferation and diversity of factors and issues in that environment. The greater the number of factors in the general business environment a manager perceives and must cope with, the greater the differences among those factors and the more complex the business environment (Aragon-Correa and Sharma, 2003). Complexity is a multidimensional construct that has been overly narrowly operationalized in many cases (Cannon and John, 2007). Complexity indicates the degree of perceptible diversity and the comprehensiveness of the environment of the organization (Miller and Friesen, 1982). The environment influences the operating conditions of the organization (Aldrich and Wiedenmayer, 1993; Baum et al. 2001), defines the rules of the game as well as development opportunities, and creates opportunities — but also barriers and threats. Organizational theory and strategic management have conceptualized environment as one of the key constructs for understanding performance (Kwiotkowska, 2018).

3. Methodology of research

To examine the association between combinations of selected factors and project performance, this paper applies fuzzy set Qualitative Comparative Analysis (fs/QCA), which is particularly suitable for comparing a small number of cases: 10-50 (Rihoux and Ragin, 2009).

Fs/QCA offers the unique opportunity to identify configurations of conditions which are difficult to identify by means of other methods. Contrary to correlational methods, which estimate the net effect of an independent variable on a dependent variable, fs/QCA identifies the conditions that lead to a given outcome (Cheng et al., 2013; Schneider et al., 2010; Stokke, 2007). In this way, fs/QCA supplements conventional correlational analyses thanks to its three main advantages: 1) asymmetry (i.e., the relationships between independent and dependent variables are treated as asymmetric), 2) equifinality (i.e., multiple pathways lead to the same outcome), and 3) causal complexity (the focus is not on net effects, but on combinatorial effects) (Fiss, 2011; Ganter and Hecker, 2014; Skarmeas et al., 2014).

The fs/QCA 2.5 software developed by Ragin and Fiss (2008) was used to analyze the data. fs/QCA is based on a set-theory approach that develops causal claims by means of supersets and subsets (Ragin and Fiss, 2008). The first stage of the analysis is to identify the various factors that work in combination to influence project performance in project-based organizations. The raw data was then calibrated into fuzzy sets (Ragin and Fiss, 2008). Fuzzy sets allow researchers to account for the varying degree of membership of cases to a particular set by using the anchors of 1 to designate "fully in" a particular set, 0 for non-membership (fully out), and 0.5 as the point of maximum ambiguity to mean neither in nor out of a particular set. The point of maximum ambiguity (or the crossover point) designates when a case is more in or more out of the set. The next stage includes the analysis of the truth table, which consists of all logically possible combinations of condition sets (Ragin and Fiss, 2008). After that, using Boolean algebra, fs/QCA computes the commonalities among the configurations that lead to a given outcome. Finally, the Quine-McCluskey algorithm provides a logical reduction of statements (Ragin and Fiss, 2008). Reduction of the truth table provides several useful statistics. Overall solution consistency indicates the degree to which the subset relationship holds for sufficiency. The overall solution coverage refers to the joint importance of all causal paths. Unique coverage of causal conditions is similar to unique R-square calculations in regression analysis in that it illustrates the relative weight of each path by measuring the degree of empirical relevance of a certain cause or causal combination to explain the outcome.

A necessity test was executed to examine whether there is a single condition for project performance in all configurations. A condition is necessary when its consistency is above 0.9 (Skaaning, 2011), which indicates the degree to which a condition is present in all cases with the same outcome. In this study no necessary conditions were found.

Data on the 17 cases of Polish consulting firms were collected by a series of surveys (January 2018–January 2019). Most project-based organizations are service firms, and the findings of the literature on service development apply to project-based firms (Sundbo, 1997). Project-based organizations are companies that are set up around projects and that produce complex services for their clients (Gann and Salter, 2000). Consulting firms are a well-suited research subject for this study because they rely on project organizing to deliver professional services to their clients; thus, they constitute the pure form of project-based organizations. The survey includes five scales (goal orientations — mastery goal orientation and performance

goal orientation — social capital, environmental complexity, and project performance) in the form of statements to which respondents indicate their level of agreement/disagreement on a five-point Likert scale. All item loadings are higher than 0.7. An extensive review of the relevant literature supports the validity of the scales.

Project performance was measured by a 6-item form (Jones and Harrison, 1996; Huang and Li, 2012) (Cronbach's Alpha = 0.87). The project performance measure concerns the outcome or perceived success of the project team in meeting project goals, budget, schedule, and operational efficiency considerations (Jones and Harrison, 1996; Huang and Li, 2012). Respondents assess the project performance with six items (Jones and Harrison, 1996; Huang and Li, 2012), namely, the ability to meet project goals, adherence to schedule, adherence to budget, expected amount of work completed, quality of work completed, and efficient task operations.

Team goal orientation was measured by multi-item scales from Sujan et al. (1994) and Van Yperen and Janssen (2002). Team goal orientation was measured as team-mastery goal orientation and team-performance goal orientation. The former was measured by a 4-item scale (Cronbach's Alpha = 0.84). The latter was measured by a 3-item scale (Cronbach's Alpha = 0.82).

Social capital was measured through each of its three dimensions according to Nahapiet and Ghoshal (1998): the existence of social interaction ties among researches (structural dimension of social capital), the existence of trust (relational dimension of social capital), and the existence of a shared vision (cognitive dimension of social capital). First, social interaction ties were measured by a 4-item scale based on Levin and Cross (2004), Kang et al. (2012), and Prieto-Pastor et. al (2018) (Cronbach's Alpha = 0.79). Trust was measured through a 5-item scale based on Lee and Choi (2003) and Kang et al. (2012) (Prieto-Pastor et al. [2018]) (Cronbach's Alpha = 0.91). Finally, the shared vision was measured by a 6-item scale from Prieto-Pastor et al. (2018) (Cronbach's Alpha = 0.87).

Environmental complexity was measured with a 2-item scale from Kwiotkowska (2018) in reference to project performance in project-based organizations (Cronbach's Alpha = 0.84).

The research model is presented in Figure 1, and it is verified in the process of scientific research.
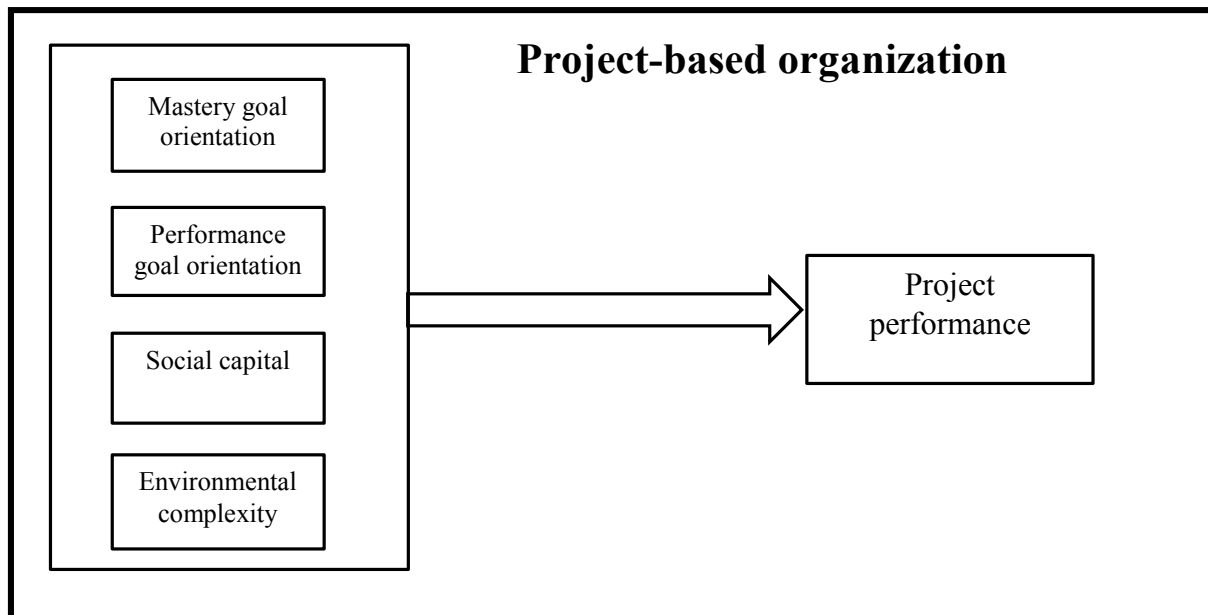
Figure 1. Conceptual model. Source: author's own work.

4. Results and discussion

After the hypothetical model was developed, a questionnaire-based survey was carried out for data collection relative to project performance and chosen factors in project-based organizations. The results are presented in Table 1. In this table, each column represents a constellation of causal conditions with their corresponding raw coverage, unique coverage, and solution consistency. The numbers at the bottom of the table represent the coverage and consistency of the solution as a whole. In brief, consistency measures the degree to which cases sharing a given condition agree in displaying an outcome. Raw coverage measures the overall coverage of a combination that may overlap with other combinations. Unique coverage refers to coverage uniquely due to a combination. Solution consistency measures the degree to which membership in the solution (the set of solution terms) is a subset of membership in the outcome. Lastly, solution coverage refers to the combined coverage of all combinations leading to the outcome (Ragin, 2008). The parsimonious and intermediate solutions were presented and analyzed (Ragin and Fiss, 2008). Full circles (●) indicate the presence of a condition, while barred circles (⊖) indicate the absence of a condition. Each panel represents the alternative causal combinations or recipes for the outcome (Ragin, 2008). These are consecutively numbered C1, C2, and C3.

Table 1.
Configurations of conditions

Condition (factors)	Configurations		
	C1	C2	C3
Team-mastery goal orientation		●	●
Team-performance goal orientation	●		●
Social capital	●	●	
Environmental complexity	⊖		●
Consistency	0,74	0,96	0,86
Raw coverage	0,48	0,24	0,42
Unique coverage	0,38	0,13	0,32
Solution consistency	0,78		
Solution coverage	0,63		

Source: own study.

According to the results of the analysis, the solution yields a coverage close to 63% and a consistency of 78%. The first configuration of conditions, C1, combines team-goal performance and social capital, but not environmental complexity. This configuration indicates that the focus on demonstrating competence by receiving positive evaluations and outperforming others, on structural capital (which is manifested in social interaction ties), relational capital (which is manifested in trust), and cognitive capital (which is manifested in a shared vision, without the proliferation and diversity of factors and issues in that environment) affect project performance in project-based organizations. The second configuration of conditions, C2, combines team-mastery goal orientation and social capital. This configuration indicates that teams' performing tasks better and more efficiently along with the opportunity access the resources embedded within and derived from the actors' social network ties supporting the attainment of goals influence project performance in PBOs. The third configuration, C3, combines team-mastery goal orientation, team-performance goal orientation, and environmental complexity. This configuration indicates that when team members perceive themselves as working towards learning goals and having challenging tasks, and when occurs working toward favorable evaluations and promotions, when competence is demonstrated by receiving positive evaluations and outperforming others, and the degree of perceptible diversity and comprehensiveness of the environment of the organization are indicated, these lead to project performance in project-based organizations.

5. Conclusion

Numerous benefits have been associated with the adoption of a PBO. They refer to better processes, control and lead-time reduction, higher output quality (Bresnen, 1990), and an improved ability to respond quickly and flexibly to each customer's needs (Hobday, 2000) and

to innovate in collaboration with clients and suppliers (Pinto and Rouhiainen, 2001). Examining the factors within configurations in order to explain and understand project performance is important from the organizational point of view of a project-based organization because it can indicate the future directions of activities that can help achieve project performance. The use of fs/QCA is an original contribution to the wide range of research on project performance in PBOs which studies the effect of all selected factors simultaneously. Specially, team-goal performance and social capital without environmental complexity (C1), and team-mastery goal orientation and social capital (C2) influence project performance. Another configuration which affects project performance in project-based organizations combines team-mastery goal orientation, team-performance goal orientation, and environmental complexity (C3). The practical implication of the results is that project performance is influenced by the three configurations of conditions of selected factors mentioned above. These results provide project-based organizations with a more holistic understanding of the paths that lead to project performance, and they can be implemented in order to achieve project performance and project success.

There are several limitations to this study that might indicate opportunities for future research. Because the empirical study is based on project-based organizations — Polish consulting firms — research in other project-based organizations from different industries is needed to examine whether the findings hold true in those contexts. Also, it might be fruitful to examine other variables affecting project performance, for example, innovative strategy or organizational size.

References

1. Akanni, P., Oke, A., and Akpomiemie, O. (2015). Impact of environmental factors on building project performance in Delta State, Nigeria. *HBRC Journal, 11(1),* 91-97.
2. Aldrich, H.E., and Wiedenmayer, G. (1993). From traits to rates: An ecological perspective on organizational foundings. In J.A. Katz, R.H. Brockhaus (Eds.), *Advances in Entrepreneurship, Firm Emergence, and Growth, 1,*145-195.
3. Ames, C. (1992). Classrooms: Goals, structures, and student motivation. *Journal of Educational Psychology, 84,* 261-271.
4. Aragón-Correa, J.A., and Sharma, S. (2003). A contingent resource based view of proactive corporate environmental strategy. *Academy of Management Review, 28, 1*, 71-88.
5. Arvidsson, N. (2009). Exploring tensions in projectified matrix organisations. *Scandinavian Journal of Management 25*, 97-107.

6. Bartsch, V., Ebers, M., and Maurer, I. (2013). Learning in project-based organizations: the role of project teams' social Capital for overcoming barriers to learning. *International Journal of Project Management, 31(2*), 239-251.

7. Baum, J.R., Locke, E.A., and Smith, K.G. (2001). A multidimensional model of venture growth. *Academy of Management Journal, 44*, 292-303.

8. Bhandar, M., Pan, S.L., and Tan, B. (2007). Towards understanding the roles of social Capital in knowledge integration: a case study of a collaborative information system project", *Journal of the American Society for Information Science and Technology, 58(2)*, 263-274.

9. Bocean, C. (2011). Project Based Organization – An Integrated Approach. *Management and Marketing Journal, IX(2),* 265-273.

10. Bresnen, M. (1990). *Organizing Construction: Project Organization and Matrix Management.* London: Routledge.

11. Bunderson, S., and Sutcliffe, K.M. (2003). Management team learning orientation and business unit performance. *Journal of Applied Psychology, 88(3*), 552-60.

12. Cannon A.R., and John, C.H.St (2007). Measuring environmental complexity: a theoretical and empirical assessment. *Organizational Research Method, 10(2),* 296-321.

13. Canonico, P., and Söderlund, J. (2010). Getting control of multi-project organizations: Combining contingent control mechanisms. *International Journal of Project Management 28*, 796-806.

14. Cattani, G., Ferriani, S., Frederiksen, L., and Täube, F. (2011). Project-Based Organizing and Strategic Management: A Long-Term Research Agenda on Temporary Organizational Forms (Editorial). *Advances in Strategic Management, 28*.

15. Cheng, C.F., Chang, M.L., and Li, C.S. (2013). Configural paths to successful product innovation. *Journal of Business Research, 66(12*), 2561-2573.

16. Chi, N.W., and Huang, J.C. (2014). Mechanisms linking transformational leadership and team performance: the mediating roles of team goal orientation and group affective tone. *Group & Organization Management, 39(3),* 300-325.

17. Colquitt, J.A., and Simmering, M.S. (1998). Conscientiousness, goalorientation, and motivation to learn during the learning process: Alongitudinal study. *Journal of Applied Psychology, 83*, 654-665.

18. Dess, G.G., and Beard, D.W. (1984). Dimensions of organizational task environments. *Administrative Science Quarterly, 29,* 52-73.

19. Di Vincenzo, F., and Mascia, D. (2012). Social capital in project-based organizations: Its role, structure, and impact on project performance. *International Journal of Project Management, 30,* 5-14.

20. Drury-Grogan, M.L. (2014). Performance on agile teams: relating iteration objectives and critical decisions to project management success factors. *Information Software Technology 56*, 506e515. https://doi.org/10.1016/j.infsof.2013.11.003.

21. Duda, J.L. (2001). Achievement goal research in sport: Pushing the boundaries and clarifying some misunderstandings. In G.C. Roberts (ed.), *Advances in motivation in sport and exercise*. Champaign, IL: Human Kinetics Books.

22. Dweck, C.S. (1986). Motivational processes affecting learning. *American Psychologist, 41*, 1040-1048.

23. Dweck, C.S. (1999). *Self-theories: Their role in motivation, personality, and development.* Ann Arbor, MI: Psychology Press, Taylor & Francis Group.

24. Dweck, C.S., and Leggett, E.L. (1988). A social-cognitive approach to motivation and personality. *Psychological Review, 95*, 256-273. doi:10.1037/0033- 295X.95.2.256.

25. Elliot, A.J., Church, M.A. (1997). A hierarchical model of approach and avoidance achievement motivation. *Journal of Personality and Social Psychology, 72(1)*, 218-232.

26. Fiss, P.C. (2011). Building better causal theories: A fuzzy set approach to typologies in organization research. *Academy of Management Journal*, *54(2)*, 393-420. http://dx.doi.org/ 10.5465/AMJ.2011.60263120.

27. Gann, D., Salter, A. (2000). Innovation in project-based, service-enhanced firms: the construction of complex products and systems. *Research Policy, 29*, 955-972.

28. Ganter, A., and Hecker, A. (2014). Configurational paths to organizational innovation: qualitative comparative analyses of antecedents and contingencies. *Journal of Business Research, 676)*, 1285-1292.

29. Gareis, R. (1991). Management by projects: the management strategy of the "new" project-oriented company. *International Journal of Project Management, 9*, 71-76, doi:10.1016/ 0263-7863(91)90062-Z.

30. Gareis, R., and Huemann, M. (2007). Maturity models for the project-oriented company. In J.R. Turner (ed.), *The Gower Handbook of Project Management* (pp. 183-208). Gower, Aldershot.

31. Geraldi, J.G. (2009). Reconciling order and chaos in multi-project firms. International *Journal of Managing Projects in Business, 2,* 149-158. doi:10.1108/1753837091093057.

32. Gong, Y., Kim, T.-Y., Lee, D.-R., and Zhu, J. (2013). A multilevel model of team goal orientation, information exchange, and creativity. *Academy of Management Journal, 56*, 827-851. doi:10.5465/amj.2011.0177.

33. Gudiene, N., Banaitis, A., Banaitienė, N., and Lopes, J. (2013). Development of a conceptual critical success factors model for construction projects: A case of lithuania'. *Procedia Engineering. Elsevier B.V., 57,* 392-397.

34. Hobday, M. (2000). The project-based organisation: an ideal form for managing complex products and systems*? Research Policy, 29*, 871-893. doi:10.1016/S0048-7333(00)00110-4.

35. Huang, J.W., L, Y.H. (2012). Slack resources in team learning and project performance. *Journal of Business Research, 65*, 381-388.

36. Huemann, M. (2015). *Human Resource Management in the Project-oriented Organization: Towards a Viable System for Project Personnel.* Gower, Aldershot.

37. Hughes, W.P. (1989). Identifying environment of construction projects. *Construction Management and Economics, 7(1),* 29-40.

38. Jerbrant, A. (2013). Organising project-based companies: Management, control and execution of project-based industrial operations. *International Journal of Managing Projects in Business, 6,* 365-378. doi:10.1108/17538371311319070.

39. Jones, M., Harrison, A. (1996). IS project performance: an empirical assessment. *Information Management, 31(2),* 57-65.

40. Kaczorowska, A. (2017). Organizacje projektowe oparte na relacja kapitałowych i kontraktowych – wady, zalety, rekomendacje. *Zeszyty Naukowe Politechniki Śląskiej, Seria Organizacja i Zarządzanie, 114,* 179-192.

41. Kang, S., Snell, S.A., and Swart, J. (2012). Options-based HRM, intellectual Capital and exploratory and exploitative learning in law firms' practice groups. *Human Resource Management, 51(4),* 461-486.

42. Kwiotkowska, A. (2018). Dynamism, hostility and complexity of the organisation's environment. Empirical verification of the construct. *Zeszyty Naukowe Politechniki Śląskiej, Seria Organizacja i Zarządzanie, 3,* 69-80.

43. Lee, H., and Choi, B. (2003), Knowledge management enablers, processes, and organizational performance: an integrative view and empirical examination. *Journal of Management Information Systems, 20(1),* 179-228.

44. Leong, T.K., Zakuan, N., Mat Saman, M.Z., Ariff, M.S.M., and Tan, C.S. (2014). Using project performance to measure effectiveness of quality management system maintenance and practices in construction industry. *The Scientific World Journal, 23,* 1-9.

45. Levin, D.Z., and Cross, R. (2004). Mediating role of trust in effective knowledge transfer. *Management Science, 50(11),* 1477-1490.

46. Lindkvist, L. (2004). Governing project-based firms: Promoting market-like processes within hierarchies. *Journal of Management and Governance, 8,* 3-25. doi:10.1023/B:MAGO.0000015392.75507

47. Lundin, R.A., Arvidsson, N., Brady, T., Ekstedt, E., Midler, C., and Sydow, J. (2015). *Managing and Working in Project Society: Institutional Challenges of Temporary Organizations.* Cambridge: Cambridge University Press, UK. doi:10.1007/9781139939454.

48. Mehta, A., Feild, H., Armenakis, A., and Mehta, N. (2009). Team goal orientation and team performance: the mediating role of team planning. *Journal of Management, 35(4),* 1026-1046. doi:10.1177/0149206308326773.

49. Midgley, C., Kaplan, A., Middleton, M., Maehr, M.L., Urdan, T., Anderman, L.H., Anderman, E., and Roeser, R. (1998). The development and validation of scales assessing students' achievement goal orientations. *Contemporary Educational Psychology, 23,* 113-131.

50. Mietrev, M., Mancini, M., and Turner, R. (2017). Towards a design for the project-based organization. *International Journal of Project Management, 35,* 479-491.

51. Miller, D., Friesen, P.H. (1982). Innovation in Conservative and Entrepreneurial Firms: Two Models of Strategic Momentum. *Strategic Management Journal, 3,* 1-25.

52. Nahapiet, J.S., and Ghoshal, S. (1998). Social Capital, intellectual Capital, and the organizational advantage. *Academy of Management Review, 23(2),* 242-266.

53. Patanakul, P., Pinto, J.K., and Pinto, M.B. (2016). Motivation to perform in a multiple-project environment: the impact of autonomy, support, goal clarity, and opportunities for learning. *Journal of Engeneering and Technology Management, 39,* 65-80.

54. Pemsel, S., and Wiewiora, A. (2013). Project management office a knowledge broker in project-based organisations. *International Journal of Project Management, 31,* 31-42.

55. Pinto, J.K., and Rouhiainen, P. (2001). *Building Customer-Based Project Organizations.* John Wiley and Sons.

56. Pintrich, P.R., and Garcia, T. (1991). Student goal orientation and self-regulation in the college classroom. In M.L. Maehr, & P.R. Pintrich (Eds.), *Advances in motivation and achievement: Goals and self-regulatory processes.* 7, 371-402.

57. Prencipe, A., and Tell, F. (2001). Inter-project learning: Processes and outcomes of knowledge codification in project-based firms. *Research Policy, 30,* 1373-1394. doi:10.1016/S0048-7333(01)00157-3.

58. Prencipe, A., Davies, A., and Hobday, M. (Eds.) (2003). *The Business of Systems Integration.* Oxford: Oxford University Press.

59. Prieto-Pastor, I., Martín-Pérez, V., and Natalia Martín-Cruz, N. (2018). Social capital, knowledge integration and learning in project-based organizations: a CEO-based study. *Journal of Knowledge Management, 22(8),* 1803-1825.

60. Ragin, C.C., and Fiss, P. (2008). Net effects versus configurations: an empirical demonstration. In C.C. Ragin (ed.), *Redesigning Social Inquiry, 1,* 190-212. Chicago-London: University of Chicago Press.

61. Rihoux, B., and Ragin, C.C. (Eds.) (2009). *Configurational comparative methods: Qualitative comparative analysis (QCA) and related techniques.* Thousand Oaks, CA: Sage.

62. Roberts, G.C., and Ommundsen, Y. (1996). Effect of goal orientation on achievement beliefs, cognition and strategies in team sport. *Scandinavian Journal of Medicine & Science in Sports, 6(1),* 46-56.

63. Schneider, M.R., Schulze-Bentrop, C., and Paunescu, M. (2010). Mapping the institutional capital of high-tech firms: A fuzzy-set analysis of capitalist variety and export performance. *Journal of International Business Studies, 41(2*), 246-266.

64. Shalley, C.E., Gilson, L.L., and Blum, T.C. (2009). Interactive effects of growth need strength, work context, and job complexity on self-reported creative performance. *Academy of Management Journal, 52(3*), 489-505.

65. Skaaning, S.E. (2011). Assessing the robustness of crisp-set and fuzzy-set QCA results. *Sociological Methods and Research, 40(2),* 1-18.

66. Skarmeas, D., Leonidou, C.N., and Saridakis, C. (2014). Examining the role of CSR skepticism using fuzzy-set qualitative comparative analysis. *Journal of Business Research, 67(9),* 1796-1805.

67. Spalek, S. (2014). Finding a New Way to Increase Project Management Efficiency in Terms of Time Reduction. *Inzinerine Ekonomika – Engineering Economics, 25*, 538-548.

68. Stokke, O.S. (2007). Qualitative comparative analysis, shaming, and international regime effectiveness. *Journal of Business Research, 60(5*), 501-511.

69. Sujan, H., Weitz, B.A., and Kumar, N. (1994). Learning orientation, working smart, and effective selling. *Journal of Marketing 58,* 39-52.

70. Sundbo, J. (1997). Management of innovation in services. *The Service Industries Journal 17(3*), 432-455.

71. Sydow, J., Lindkvist, L., and DeFillippi, R. (2004). Project-Based Organizations, Embeddedness and Repositories of Knowledge: *Editorial. Organization Studies, 25*, 1475-1489. doi:10.1177/0170840604048162.

72. Thiry, M., and Deguire, M. (2007). Recent developments in project-based organisations. *International Journal of Project Management, 25(7),* 649-658.

73. Trocki, M. (2014). *Organizacja projektowa. Podstawy. Modele. Rozwiązania.* Warszawa: PWE.

74. Turner, J.R., and Keegan, A. (2000). The management of operations in the project-based organisation. *Journal of Change Management, 1*, 131-148. doi:10.1080/714042464.

75. Turner, J.R., and Keegan, A. (2001). Mechanisms of governance in the project-based organization: Roles of the broker and steward. *European Management Journal, 19*, 254-267. doi:10.1016/S0263-2373(01)00022-6.

76. Van de Walle, D. (1997). Development and validation of a work domain goal orientation instrument. *Educational and Psychological Measurement, 57*, 995-1015.

77. Van Yperen, N.W., and Janssen, O. (2002). Feeling fatiguedand dissatisfied or feeling fatigued but satisfied? Employees'goal orientations and their responses tohigh job demands. *Academy of Management Journal, 45*, 61-71.

78. Verona, G., and Ravasi, D. (1999).Core competence per sviluppare nuovi prodotti con continuita. *Economia & Management, 3*, 107-126.

79. Walker, A. (1989). *Project Management in Construction.* Oxford: BSP Professional Books.

80. Westerveld, E. (2003). The Project Excellence Model: linking success criteria and critical success factors. *International Journal of Project Management, 21*, 411e418. https://doi.org/ 10.1016/ S0263-7863(02)00112-6.

81. Whitley, R. (2006). Project-based firms: New organizational form or variations on a theme? *Industrial and Corporate Change, 15*, 77-99. doi:10.1093/icc/dtj003.

MANAGER IN THE MUNICIPAL SECTOR – EMPLOYMENT CONDITIONS?

Janusz KARWOT[1], Józef OBER[2*]

[1] Sewage and Water Supply Ltd. Rybnik; Karwotj@interia.pl, ORCID: 0000-0002-5810-7535
[2] Silesian University of Technology, Department of Applied Social Sciences, Faculty of Organization and Management; Jozef.Ober@polsl.pl, ORCID: 0000-0001-6290-381X
* Correspondence author

Abstract: The aim of the article is to characterize the value of various forms of employment for managers in municipal companies in Poland and is an attempt to evaluate them from the point of view of management efficiency and conducting investment processes in connection with the obligation to achieve social objectives. One of the main premises of the article is also the desire to highlight and emphazise the high specificity of the operation of municipal companies in Poland, and thus the requirements regarding the experience and role of managers in the territorial form of economic activity in conjunction with the form of their employment in companies. The Act of 9 June 2016 discussed in the article on the rules of shaping the remuneration of persons managing certain companies constitutes an area of considerations, the intention of which is a general assessment of the substantive functions of managers in relation to economic and financial analysis and the legal form of the adopted solution. The results of these considerations do not confirm the thesis adopted in the construction of the Act of 9 June 2016 that only a managerial contract in its pure form can be an effective tool for corporate governance in municipal companies.

Keywords: municipal sector, public sector, managerial contract, manager, contract of employment.

1. Introduction

Knowledge and skills of managers as well as their methods of reacting and behaving are of key importance for the operation of private and state enterprises (Penc, 2007). In the context of management and quality science, knowledge is usually understood as a strategic resource of an enterprise that guarantees competitive advantage and constitutes a significant source of organizational power (Bieniek, and Pliszka, 2014). In recent years, few peer-reviewed articles on public sector managers have been published. The literature also does not refer to the situation in relation to the country and the area of public services, or to the organizational level (Cregård, Corin, and Skagert, 2017). In view of the above, it seems interesting to consider this topic in

the context of a specific country – Poland. Pursuant to Polish law, until 2017, managers of companies with state capital as well as companies with the participation of local government could conclude standard employment contracts or managerial contracts. Since the entry into force of the provisions of the Act of 9 June 2016 on the rules for shaping the remuneration of persons managing certain companies, the legal environment has changed and since then the company has been obliged to conclude a contract for the provision of management services with members of the management bodies of companies with the participation of the State Treasury or local government units. The main intent behind the changes and the introduction of such a solution was the will to ensure that the company's managers will fully pursue the expectations of stakeholders. Will it be so? Time will tell. There is also some doubt whether a significant element that distinguishes municipal companies from other economic entities has been forgotten about by accident when striving to standardise legal solutions. It is known that municipal companies are established to implement a number of public tasks aimed at satisfying the collective needs of the local government community, i.e. activities that are very cost-intensive, but socially necessary to be performed.

The purpose of the article is to characterize the value of various forms of employment for managers in municipal companies in Poland and to attempt to evaluate them from the point of view of management efficiency and investment processes in connection with the obligation to achieve social goals. One of the main premises of the article is also the desire to highlight and emphasize the great specifics of the functioning of municipal companies in Poland, and thus the requirements for experience and the role of managers in the area of economic activity combined with the form of their employment in companies.

This article is divided into six parts, where the first is an introduction, which presents the general characteristics of the use of employment contracts and managerial contracts in municipal companies in Poland. The second and third parts discuss successively the specifics of management in the municipal sector and the legal aspects of municipal companies in Poland. The fourth part presents the role played by the manager in the companies of Local Government Units (LGUs), while the fifth is the analysis of manager's employment forms in LGUs companies. The article is summarized with conclusions from the analysis and considerations.

2. Specificity of management in the municipal sector

Nowadays, the public sector is facing a serious problem when it comes to retaining management as a result of the growing number of pensions and voluntary resignations from managerial positions. Despite the interest in the subject of managers in the public sector, there that there is still little research and publication on this subject (Cregård and Corin, 2019).

According to literature sources, a huge number of public sector managerial pensions are expected in the next decade in the United States (US) and European Union (EU) (Bright, 2013).

Municipal sector companies are part of the public sector and are subject to similar dependencies in terms of the purposefulness of their operation and connection to the society and the economy as well as the requirements for assessing the effectiveness of the measures implemented. Therefore, managing such a company naturally makes it necessary to adopt a professional approach, use appropriate methods and instruments, and specify standards and indicators for measuring effectiveness. Municipal administration at a local level (municipality, poviat) satisfies the basic, collective needs of the local community. By carrying out these public tasks, the local government became an important and active participant in the economic life of the country. In the light of the applicable regulations, local government units perform a number of public tasks themselves, mainly in the form of a budget unit, local government budget division and commercial law companies. The efficiency of decision-making in the case of a democratic system and the rationality of the decisions aimed at satisfying social needs depend to a large extent on a holistic view of the conditions for the operation and development of local government organizations and the ability to use innovative management methods and techniques in practice. Innovations in management have an increasing impact on the organizational structures of the business sphere and affect the research issues undertaken by scientific institutions (Orbik, 2017). Therefore, one of the important determinants of the success of enterprises operating in the Polish market is their innovativeness (Kochmańska, 2015). The managerial approach, with which one is dealing in such a situation, is considered a new doctrine of public management based on the management process (Szydłowski, 2011). Efficient management affects not only the proper development of a given local government unit but also the efficiency and effectiveness of its organs and bureaucratic apparatus, which are not without significance for residents. In the functional sense, strategic management is an information and decision-making process supported by management functions such as planning, organizing, motivating and controlling, whose main objective is to determine the key problems of the organization's activity, its survival and development, paying particular attention to the impact of the environment and internal development potentials (Stabryła, 2000). Strategic management is enforced by implementing strategies. They are characterized by the fact that they favor better adjustment of the organization to the environment and achievement of strategic objectives (Griffin, 1996). Therefore, the strategy of stimulating management should be a development strategy, defined in the broadest sense as a plan to achieve the organization's objectives. The changing external environment of local government companies, as well as changes inside them, result in a situation where the managers in charge of them need to be fully aware of the social tasks and the necessity to base management on four pillars, i.e. planning, organizing, directing and controlling human resources (Kuc, 2005). The necessity to choose between social objectives and strict market rules causes the state to create legal and organizational solutions,

trying to use them to combine both of these objectives. This is exactly the case in, for example, municipal services (Klimek, 2017).

Municipal companies, in which local government bodies are shareholders or stakeholders, are a very important element on the map of the Polish economy. These entities are intended to fulfill a subservient role in relation to local communities. On the other hand, they are players in the free market and must act in a manner that bears most resemblance to purely private companies. However, the effectiveness of public entities usually does not equal private entities operating under analogous market conditions. Which is why the quality of managing them and the ability to perform acts intended to maintain balance are so important. At this point, a question naturally arises, and it is the one about the status of a manager in such companies.

3. Legal conditions of activities of municipal sector companies

The necessity to provide public services for the population results from the nature of local government (Wojciechowski, 2012). The principles and forms of municipal services of local government units consisting in the performance of their own tasks in order to meet the collective needs of the local government community were defined in the Act of 20 December 1996 on municipal services (consolidated text: Journal of Laws of 2017, item 827). Municipal services can be performed by local government units, in particular in the forms of: a local government budget division or commercial law companies (Article 2). In accord with Art. 1 sec. 2 of the Act, municipal services include, in particular, tasks of a public utility character whose purpose is to provide ongoing and uninterrupted satisfaction of the collective needs of the population through the provision of publicly available services. The wording of the latter provision indicates that public utility tasks have the following characteristics:

- they are part of the tasks of a given local government unit, i.e. they serve to satisfy the needs of the local government community;
- their purpose is to provide ongoing and uninterrupted satisfaction of the collective needs of the population, i.e. they refer to all or most or a significant part of the members of a given community (Jagoda, 2012).

The choice of the form of organization of municipal services leads to a situation where the purpose of the municipality is to meet the collective needs of residents, and at the same time the municipality as an owner is interested in maximizing profit from economic activities carried out by municipal entities (Misterska-Dragan, 2004).

According to Art. 9 sec. 1 of the Act, local government units may establish limited liability companies or joint-stock companies, and may also join such companies. However, Art. 10 sec. 1-3 of the Act of Municipal Services regulates issues of municipalities forming companies outside the public domain and joining them. This is possible if the following conditions are met:

- there are unmet needs of the local government community in the local market,
- unemployment in the municipality has a significant negative impact on the living standard of the local government community, and the application of other measures and legal measures stemming from the applicable provisions did not lead to economic activation, in particular to a significant recovery of the local market or permanent reduction of unemployment, and also when disposal of an item of municipal property able to constitute a non-cash contribution of the municipality to the company or the disposal of it otherwise will cause severe property damage to the municipality.

The overriding principle that determines the superiority of a capital company over other forms of business operation is the principle of the primacy of capital over a person. The influence of owners on the company is determined by the number of votes held, which in turn results from the amount of capital employed in the enterprise. The second feature of a capital company, decisive for its attractiveness, is obtaining, upon its registration, a legal personality separate from the entity of the owners (Bartkowiak and Borkowski, 2013).

Restrictions on the establishment of commercial law companies and joining them by the municipality do not apply to the municipal ownership of shares or stocks of companies involved in banking and insurance activities as well as advisory, promotional, educational and publishing activities for the local government, as well as other companies important for the development of the municipality. Considering the above, two basic cases in which the LGU (local government unit) can establish a company may be distinguished:

- the LGU performs its own tasks within the area of public utility;
- the LGU performs its own tasks outside the area of public utility that meet the requirements specified in Art. 13 sec. 2 of the Act on Voivodship Government and Art. 10 of the Act of Municipal Services. The establishment of a company by a local government unit is also provided for in the Act of 19 December 2008 on Public-Private Partnership (Journal of Laws of 2015, item 696).

Therefore, it is justified to assume that there is a disparity between its own tasks and tasks in the field of public utility, since not all the tasks of the LGU are tasks focused on public utility (Byjoch and Redeł, 2000).

As far as legal conditions of the operation of municipal sector companies are concerned, it is important to mention the fact that the conditions of operation of the municipal sector constantly change in terms of: environmental requirements, climate protection, the use of web techniques in the services offered, the intensification of interregional and international cooperation in terms of the implementation of EU directives as well as raising standards of population service and changes to the nature of services forced by demographic changes. Environmental changes concern the municipal sector mostly in the field of waste management, sewage and their utilization. In the light of the available literature and research it is clear that environmental protection regulations are today one of the most important challenges (Synowiec, 2018). The environmental rigor will require new technologies and a change of

management style with particular focus on the processes of acquiring and implementing innovations. As the direction of these activities is unquestionable, making changes in a shorter or more distant time will be necessary. It should be noted that a managerial staff which has competences in acquiring and implementing innovations is essential in order to implement them. Specific features of municipal companies in almost every field of activity are so prominent that, according to many authors specialized in the field, these features should be a sufficient reason to create separate legal provisions, i.e. the return to the concept from the early 1990s (Bachor, 2009).

4. Role of a manager in the companies of Local Government Units

Managers from the public sector play a key role in the development of their organization because they directly affect employees and indirectly affect work procedures and change processes in enterprises (Whitehead, 2006). There is no doubt that the manager is the main figure in any organization. The rapid development of the company depends on them. In turn, the effectiveness and involvement of the manager in the development of the organization depends mainly on how the basis of their employment is regulated. Therefore, the issue of choosing the proper and, at the same time, the best form of linking the administrator with the entrepreneur (owner) evokes a keen interest not only among managers themselves, but also among entities associated with the organization.

Cities are centers of change based on innovations, the spirit of entrepreneurship, and economic growth. Municipal services constitute a group of services significant to the residents of municipalities. They concern, among others, ensuring the cleanliness and waste disposal of cities, providing public transport, water supply and sewage disposal, managing municipal parks, or providing lighting in municipalities. Therefore, they differ in terms of their type. The municipal services sector is characterized by a fairly inelastic demand, high capital intensity and high costs. The ongoing socio-economic changes in cities begin to affect the operation of companies providing municipal services. They must increasingly build their brand, maintain their good image, and pay attention to the needs of their increasingly demanding and aging consumers. These phenomena cause the necessity of careful development of market strategies by companies providing municipal services based on cooperation with various entities both directly operating within and outside their industry (Spychała, 2013).

It affects the style of business management, where the social factor in relation to local communities and the contact of the local government with the enterprise play a very important role. At the level of a municipal company there is a specific and significant contradiction between economic and social elements (Gralka, 2015). One can therefore say that in the field of municipal services there is a dichotomy of goals: the most important thing for the enterprise

is profit, while municipalities are established to satisfy the collective needs of the residents. It should be emphasized that the main difference between a municipal enterprise and a business activity is their objective. Municipal services have no profit-making objective because municipal sector enterprises are forced to carry out tasks of low profitability and even ones that are unprofitable if the good of the local community requires it. Their main objective is to satisfy the needs of the municipality's residents. A manager in this type of enterprise functions in a strictly defined political system, where the decisions of local politicians can often generate major difficulties for the finances or organizational structures of the company. The external pressure on managers to run the enterprise in a given manner, make imposed decisions, or implement policies of a particular influence group is also a threat. Since enterprises with the participation of local government units performing tasks of a municipality in the form of a commercial law company operate in an environment in which there are other entities attempting to act as its principals, there is a so-called issue of a joint agency (Kozioł, 2008), meaning a need for cooperation between interest groups that often have different preferences (Kozioł and Barwacz, 2008).

Regardless of the above, managers must be able to solve such or other problems regarding management in accordance with the political rationality criteria while taking into account the economic rationality of the adequate market economy (Chmielewiec, 2016) and the ethics of conscience and responsibility, which focus on a personal approach to ethical issues in the business world and emphasizes such important experiences as self-esteem and respect for the dignity of others (Kuzior, 2017). It is also worth paying attention to the important role of soft competences in managers and their role in creating innovation, which becomes very important, especially in the context of significant transformations that have recently occurred in the economy (Kochmańska, 2016) which confirms the analysis of the report regarding the desired competences of employees in the context of the coming technological changes in industry 4.0 (Kuzior, and Sobotka, 2019).

It should also be remembered that the sector of municipal enterprises, which in most cases have few owners, does not fit into the neoclassical theory of corporate behavior due to, for example, the multitude of objectives. In addition, apart from shareholders represented by local government institutions, almost all (social, political, economic) organizations existing and operating on a given local level and, most importantly, the local government unit's residents are interested in the operation of companies with the participation of local government units (LGUs).

It is important to remember that the very essence of every commercial company, as well as a municipal company, is to generate profit. The profit should theoretically be in line with the expectations of the owner, i.e. the residents of the municipality in the case of companies that are the property of a local government unit entirely. Therefore, the generation of high profit is unfavorable from the point of view of residents. The revenues of these entities should only marginally exceed the cost of operations, especially when it concerns public utility tasks,

to which access should be wide such as, for example, water supply and sewage disposal and treatment.

This means that discussions continue to this day regarding the precise meaning of public utility and to what extent it refers to social objectives and to what extent to economic ones. It should also be noted that in Poland there is still no uniformly recognized definition of a municipal company itself (Klimek, 2017). In order to attract the best specialists to join the municipal sector companies, who will be able to skillfully balance these two categories, proper conditions for their operation, i.e. employment and remuneration, need to be developed. But is the managerial contract the only right way? Is it the most appropriate form of securing LGUs?

5. Forms of employment of managers in companies of Local Government Units

The term *form of employment* should be understood relatively narrowly and defined as resulting mainly from the legal basis of connections between contractors/managers and enterprises for which they provide work. Meanwhile, in the case of a managerial contract, a system free of professional relations is developed. The subordination of the manager is, on the one hand, mainly resulting from the control rights vested in the superior body over the manager and, on the other hand, the reporting obligations of the manager.

This was also indicated by the Supreme Court in its judgement of 4 April 2002 (I PKN 776/00 OSNP2004/6/94), rightly stating that the conclusion of a contract for enterprise management (managerial contract) causes the owners of this type of enterprise to transfer the rights to take independent factual and legal actions concerning the entire enterprise management process to the managing person (manager), which means independence in terms of its management, freedom of choice regarding the management method (style), the possibility of using existing business contacts, professional experience, organizational skills, reputation and their own image. These characteristics are not demonstrated in the employment relationship, in which the employing entity is entitled to issue binding instructions to the employee.

Is it therefore necessary to change contracts and which solution will be the most effective one? The legislator suggested that the fixed part of the manager's remuneration in a company, a municipal one among others, be made dependent on the scale of the company's operations, especially on the value of its assets, revenues and staff headcount, in the amount ranging from one to fifteen times the average monthly remuneration in the enterprise sector without payment of bonuses based on profit in the fourth quarter of the previous year, announced by the President of the Central Statistical Office (Art. 4 sec. 2 point 1-5 of the Act of Voivodship Government).

At the same time, the company has the right to set the amount of basic remuneration at a different level if it is justified by exceptional circumstances related to the same company or

the market in which it operates. However, shareholders, when adopting a resolution regarding the remuneration of persons managing companies with the participation of the State Treasury and subordinate to local governments, will have to take into account the statutory salary brackets assigned to companies fulfilling specific criteria, regarding, among others, the number of employees and the size of the company (cf. Art. 4 of the Act on Voivodship Government). The variable part of the remuneration of a member of the management body should be dependent on the level of implementation of management objectives. It cannot exceed 50% of the fixed remuneration, and in public companies 100% of the basic remuneration, of a member of a management body in the previous financial year (Art. 4, sec. 5 of the Act on Voivodship Government). The variable part of the remuneration shall depend, among others, on the achievement of company's objectives such as, for example, attaining or changing the volume of production or sales, reducing losses, reducing the costs of management or the costs of running the enterprise, implementing a strategy or a restructuring plan. The basic differences between a contract based on a civil law contract and an employment contract are presented in Table 1.

Table 1.
Legal status of managers employed under a managerial contract and a leader contract

Distinguishing criterion	Managerial contract form of civil law contract	Leader contract form of employment contract
Legal basis	The Civil Code - civil law provides the manager with an autonomous and independent position, giving them a broad discretion in actions.	The Labor Code - labor law certainly imposes more on the parties to the contract. In this case there is no full discretion in actions or full autonomy of parties.
Reporting line	Lack of reporting lines – a contract generally based on the principle of equality of parties to a legal relationship. In LGU companies, however, it is difficult to talk about full autonomy of the manager, since these companies are the service providers of the so-called basic services for local communities and their activities are not intended to generate profit.	There are clear reporting lines based on the supervisor - subordinate principle.
Performance of tasks	Independently, under the employer's supervision specified in the contract (determining objectives and the level of their implementation, recommendations, tips, coordination, performance control).	The work is carried out under the guidance of the employer as defined in the Labor Code (official orders and their enforcement).
Remuneration	In accordance with the Act of 9 June 2016, the parties may determine the principles of remuneration. Remuneration based on the terms and conditions of the contract and dependent on the results.	Subject to internal regulations (Remuneration regulations and/or a corporate collective labor agreement within a given group of leaders).
Job security	Limited, possibility of not renewing the contract, termination of the contract under the contract's terms and conditions.	Larger, on the principles of the Labor Code, as for an ordinary employee. Labor law protects the interests of the manager.

Cont. table 1.

Provision of services	Flexible working time. The manager is not subject to disciplinary action.	Personal performance of work. Specified working time, during which the leader remains at the disposal of the employer, is subject to disciplinary action.
Social benefits/additional entitlements	Limited, negotiated in a contract (limited use of holiday leave/days off), the period of employment is not included in years of service.	Employee rights are guaranteed under the provisions of the Labor Code (holiday leaves, statutory sickness pay, rewards, disability packages, benefits from the Employee Benefit Fund, duration of child care etc.). Labor law provisions guarantee the manager numerous benefits under the law itself without the need to negotiate, i.e. without the consideration of either good or bad will of the owner.
Liability	Contract based on the principles set out in the managerial contract and the Civil Code Pursuant to Article 471 of the Civil Code, the manager always bears full liability for damage resulting from non-performance or improper performance of official duties. In addition, they are liable for damage caused by persons with whom they perform the obligation under the contract for the provision of services, as well as by persons to whom they entrust this obligation (Art. 474 of the Civil Code).	On the basis of Art. 108-127 of the Labor Code; like an ordinary employee's. Only in the case when the damage is caused intentionally - the manager is obliged to redress it in full (Art. 122 of the Labor Code).
Satisfying claims in respect of remuneration from insolvency assets	In the event that enterprise declares bankruptcy, the receivables due to the manager under the contract are regulated in accordance with the Bankruptcy Law – the fourth category.	Claims in respect of remuneration – the privileged position – the second category.

References: Authors' own study.

Pursuant to the Act of 9 June 2016 on the rules of shaping the remuneration of persons managing certain companies, only managerial contracts should be concluded with the managers of State Treasury companies or local government companies. By introducing the Act of 9 June 2016, the main point that a managerial contract is the only effective tool for corporate governance of municipal enterprises was accepted, and the results of these enterprises should be the reference. But rightly so? The work of managers under a managerial contract in the years to come will probably provide an answer to this question.

6. Conclusion

Undoubtedly, one of the most difficult problems to solve is the situation when it is necessary to combine economic and social objective in business activity, as is currently the case in municipal companies. Then there is the issue of how to manage such entities. It must be

remembered that profit is not the only result of a proper management method adopted by the manager in a company, but the fact that municipal sector companies have been the beneficiary of numerous EU funds in recent years is of considerable importance as well. In addition, their effective and timely use by municipal sector companies is the result of the use of efficient and effective management methods. Effective management can only be guaranteed by effective managers who have the ability to apply liberating management, which results from the organization's vigor and positive attitude towards the efforts of employees performing specific tasks. An effective manager should, therefore, be able to resist the temptations of success and easy profit, be responsible, composed, prudent, courageous, persistent and able to inspire employees (Drucker, 2011). Managers should primarily be enthusiastic about what they do and should be the visionaries of the future for innovation of the industry in which they operate. Apart from the aforementioned features and competencies, the manager should also have the ability to gain the trust, credibility, authority and respect of the employees, because they are supposed to show their colleagues how to achieve the goals that have been set (Różańska-Bińczyk, 2017). Additionally, the manager, while managing the property of a municipal company, also manages municipal property brought to such a company by the municipality, which should automatically result in an increase in management diligence standards (Chyb, 2015). At this point, one returns to the key issue of the form of employment and the amount of remuneration of managers. Pursuant to the Act of 9 June 2016 on the rules of deciding the remuneration of persons managing certain companies, managerial contracts should only be concluded with the managers of State Treasury companies or local government companies. However, the results of these considerations regarding the use of managerial contracts in municipal enterprises do not seem to confirm the thesis adopted when drafting the Act of 9 June 2016 stating that only in its pure form can a managerial contract be an effective tool of ownership supervision in a municipal enterprise and give the owner the sense of having an effective management guarantee.

It should be stated that from the point of view of the employing entity, the managerial contract seems to be more favorable in many aspects, while the employment contract ensures greater job security. The company does not have to apply the provisions of the Labor Code that are uncomfortable for the employer to the manager. In addition, the rules of liability for damage caused to the company (third parties) are clear, and when the manager's performance results are not satisfactory, the contract can simply be terminated without the need to worry about potential interference of the Labor Court. In the case of employment under a managerial contract, inconveniences may be important to many potential managers including: lack of protection of work relationship permanence, much more strict rules of liability for damage to the company's property, or the lack of special procedure for pursuing claims in court. On the other hand, the feeling of insecurity in the opinion of the authors can block the innovation of individual industries of the municipal sector due to the protection of managing persons. At the end of the discussion, it should be emphasized that the protection of shareholders'/owners' interests being

a result of several mechanisms stemming both from the environment and the mechanisms specified by law seems to be the most valid approach.

In the opinion of the authors of the paper the issue of the legal form of managers' employment should always be considered individually: the nature of the unit entrusting the performance of sector/industry obligations, objectives to be achieved, the characteristics of a person accepting to perform such obligations and, above all, the type of such obligations. The main objective of the owner should therefore be to develop such methods of cooperation, procedures, information policy and control structure that will secure their interests on the one hand, while effectively motivating managing persons to act in the interests of the owners on the other. In the opinion of the authors, the most appropriate approach to the discussed issue is to give stakeholders leeway in choosing the form of employment of management board members/managers as given in the Code of Commercial Companies.

According to the authors of the article, it is worth considering in the future conducting research on the perception of the changes introduced by the Act of 9 June 2016 among the management of enterprises in the water and sewage industry. In addition, it seems interesting to conduct a comprehensive assessment of the effectiveness of managerial contracts as an instrument of corporate governance in municipal enterprises.

References

1. Bachor, W. (2009). *Efektywność majątku trwałego w spółkach komunalnych – Wybrane zagadnienia i wyniki badań*. Warsaw: Oficyna Wydawnicza SGH
2. Bartkowiak, P., and Borkowski, M. (2013). Tendencja zmian osobowych w organach spółek z udziałem jednostek samorządu terytorialnego. *Zeszyty Naukowe Uniwersytetu Szczecińskiego, 786(64/1),* 297-307.
3. Bieniek, I., and Pliszka, B. (2014). Identyfikacja najlepszych praktyk w zakresie międzypokoleniowego transferu wiedzy w przedsiębiorstwach przemysłowych. *Zeszyty Naukowe Politechniki Śląskiej. Seria Organizacja i Zarządzanie, 72,* 9-30.
4. Bright, L. (2013). Where Does Public Service Motivation Count the Most in Government Work Environments? A Preliminary Empirical Investigation and Hypotheses. *Public Personnel Management, 42(1),* 5-26. Doi: 10.1177/0091026013484575.
5. Byjoch, K., and Redeł, S. (2000). *Prawo gospodarki komunalnej*. Warsaw: Wydawnictwo Prawnicze PWN.
6. Chmielewiec, B. (2016). Menedżer publiczny jako lider innowacji w zarządzaniu zasobami ludzkimi. In A. Andrzejczak, and J. Furmańczyk (Eds.), *Zmiany ról i uwarunkowań pracy menedżerów w organizacjach publicznych i non profit* (pp. 211-223). Cracow: Wydawnictwo edu-Libri.

7. Chyb, N. (2015). Nieprawidłowości w funkcjonowaniu spółek komunalnych poza sferą użyteczności publicznej – analiza problemu. *Samorząd Terytorialny, 9,* 5-14.

8. Cregård, A., and Corin, L. (2019). Public sector managers: the decision to leave or remain in a job. *Human Resource Development International*, *22(2)*, 158-176, doi: 10.1080/ 13678868.2018.1563749.

9. Cregård, A., Corin, L., and Skagert, K. (2017). Voluntary Turnover among Public Sector Managers: A Review. *Scandinavian Journal of Public Administration, 21(2),* 89-114.

10. Drucker, P.F. (2011). *Menedżer skuteczny*. Warsaw: Wydawnictwo MT Biznes.

11. Dz.U. z 2009 r., No. 19, Item 100 ze zm. (Dz.U. z 2015 r., poz. 696), dalej: ustawa o partnerstwie publiczno-prywatnym.

12. Dz. of Laws of 2017, poz. 827.

13. Gralka, D. (2015). Spółka miejska w usługach komunalnych. *Zeszyty Naukowe Uniwersytetu Szczecińskiego, 891,* 265-275. Doi: 10.18276/epu.2015.121-16.

14. Griffin, W. (1996). *Podstawy zarządzania organizacjami*. Warsaw: PWN.

15. Jagoda, J. (2012). General provisions. In J. Glumińska-Pawlic, A. Marekwia, R. Cybulska, C. Martysz, B. Dolnicki, A. Wierzbica, J. Jagoda, and A. Faruga (Eds.), *Ustawa o samorządzie województwa. Comment* (pp. 29-124). Warsaw: Wolters Kluwer Polska.

16. Klimek, D. (2017). Spółka komunalna – Ekonomiczne i społeczne aspekty zarządzania. *Studia Ekonomiczne. Zeszyty Naukowe Uniwersytetu Ekonomicznego w Katowicach, 322,* 32-41.

17. Kochmańska, A. (2015). Elementy decydujące o efektywności procesu wdrażania innowacji w organizacjach na przykładzie przedsiębiorstwa z branży usługowej. *Zeszyty Naukowe Politechniki Śląskiej. Seria Organizacja i Zarządzanie, 80,* 151-162.

18. Kochmańska, A. (2016). Kompetencje miękkie w innowacyjnym przedsiębiorstwie. *Zeszyty Naukowe Politechniki Śląskiej. Seria Organizacja i Zarządzanie, 95,* 189-199.

19. Kozioł, L. (2008). Relacje agencji w spółkach kapitałowych sektora publicznego. *Zeszyty Naukowe Uniwersytetu Ekonomicznego w Krakowie, 772,* 23-36.

20. Kozioł, L., Barwacz, K. (2008). Model systemu nadzoru korporacyjnego spółek kapitałowych sektora komunalnego. In S. Rudolf (Eds.), *Rola nadzoru korporacyjnego w kreowaniu wartości przedsiębiorstwa* (pp. 370-384). Łódź: Wydawnictwo Uniwersytetu Łódzkiego.

21. Kuc, B. (2005). *Zarządzanie doskonałe*. Warsaw: Wydawnictwo Menedżerskie PTM.

22. Kuzior, A., Sobotka, B. (2019). Key competencies in the modern business services sector. *Organization & Management Scientific Quarterly, 2*, 64-74. Doi: 10.29119/1899-6116.2019.46.5.

23. Kuzior, A. (2017). Etyka zarządzania i etyka biznesu. Zagadnienia podstawowe. In A. Kuzior (Eds.), *Wokół podstawowych zagadnień współczesności* (pp. 69-85). Zabrze: Śląskie Centrum Etyki Biznesu i Zrównoważonego Rozwoju.

24. Misterska-Dragan, B. (2004). Czy Skarb Państwa to dobry wzór? – nadzór właścicielski nad spółkami z udziałem jednostek samorządu terytorialnego. *Zeszyty Naukowe Wyższej Szkoły Ekonomicznej w Bochni, 2*, 77-90.

25. Orbik, Z. (2017). Próba analizy pojęcia innowacji. *Zeszyty Naukowe Politechniki Śląskiej. Seria Organizacja i Zarządzanie, 105,* 307-319. Doi: 10.29119/1641-3466.2017.105.23.

26. Penc, J. (2007). *Nowoczesne kierowanie ludźmi – Wywieranie wpływu i współdziałanie w organizacji*. Warsaw: Difin.

27. Różańska-Bińczyk, I. (2017). Menedżer publiczny i jego rola w zarządzaniu zasobami ludzkimi w wybranych jednostkach samorządu terytorialnego. *E-mentor, 4,* 45-49. Doi: 10.15219/em71.1314.

28. Spychała, M. (2013). Kompetencje zawodowe menedżera przyszłości w wielkopolskim sektorze komunalnym. *Acta Universitatis Lodziensis. Folia Oeconomica. Kierunki ewolucji zachowań organizacyjnych, 283,* 185-198.

29. Stabryła, A. (2000). *Zarządzanie strategiczne w teorii i praktyce firmy*. Warsaw-Cracow: PWN.

30. Synowiec, A. (2018). Perspektywy i zagrożenia dla zrównoważonego rozwoju obszarów wiejskich na Ukrainie w świetle badań terenowych w obwodzie chmielnickim. *Zeszyty Naukowe Politechniki Śląskiej. Seria Organizacja i Zarządzanie, 129,* 581-594. Doi: 10.29119/1641-3466.2018.129.42.

31. Szydłowski, C. (2011). Metody zarządzania organizacjami administracji publicznej. In D. Stawasz, D. Drzazga, and C. Szydłowski (Eds.), *Wybrane aspekty sprawności zarządzania w administracji publicznej* (pp. 61-110). Łódź: Wydawnictwo Uniwersytetu Łódzkiego.

32. Whitehead, D. (2006). Workplace Health Promotion: The Role and Responsibility of Health Care Managers. *Journal of Nursing Management, 14(1)*, 59-68. Doi: 10.1111/JNM.2006.14.issue-1.

33. Wojciechowski, E. (2012). *Gospodarka samorządu terytorialnego*. Warsaw: Difin.

POLISH AGRITOURISM FARM WEBSITE QUALITY
AND THE NATURE OF SERVICES PROVIDED

Karol KRÓL[1], Agnieszka ZIERNICKA-WOJTASZEK[2], Dariusz ZDONEK[3*]

[1] University of Agriculture in Krakow, Faculty of Environmental Engineering and Land Surveying;
k.krol@onet.com.pl, ORCID: 0000-0003-0534-8471
[2] University of Agriculture in Krakow, Faculty of Environmental Engineering and Land Surveying;
agnieszka.ziernicka-wojtaszek@urk.edu.pl, ORCID: 0000-0002-9928-1468
[3] Silesian University of Technology in Gliwice, Faculty of Organization and Management
dariusz.zdonek@polsl.pl, ORCID: 0000-0002-6190-9643
* Correspondence author

Abstract: The presented study is aimed at solving the following problems: what product is offered by agritourism farms, what is the typology of agritourism farms in terms of the products offered, and do the specific attributes of a website correspond to the specific attributes of provided services? The present study was conducted for a set of agritourism farm websites. From a total of 574 websites subjected to inspection testing, 287 websites were hosted on a paid server with a ccTLD domain, and 287 websites were hosted on a free server with an assigned free domain. Each website was described using 35 diagnostic variables. The achieved score was subsequently normalised using the zero unitarisation method. Based on the observations made in the present study, it can be concluded that the website development technique translates into the nature of activities conducted by a farm, as the form of the offer presentation online translates into what a tourist can expect directly on the farm. The study revealed that underdeveloped, amateurish websites are used to promote traditionally understood family agricultural farms which offer an opportunity to work on the farm. This knowledge is of importance for tourists worldwide, as tourists should not be afraid of the amateurish websites of agritourism farms, as they advertise genuine rural agricultural farms offering accommodation. Based on the results, a new typology of agritourism farms demonstrated that specialised farms with modern websites typically offer more extensive tourism opportunities and have more available beds at their disposal.

Keywords: agritourism, website quality, tourism supply, quality, typology.

1. Introduction

Rural tourism, which encompasses the entire tourism economy of rural areas, is perceived as an important direction in rural development. Agritourism has evolved from rural tourism, and is considered a form of leisure in rural areas that is based on accommodation facilities and recreational activities related to agricultural farms and their surroundings (Phillip et al., 2010).

Agritourism is one of the most common non-agricultural forms of business activity pursued in the countryside. Notably, it is a method of economic and social activation for rural inhabitants that supports the sales of agricultural products, preserves, and handcrafted articles, while simultaneously affecting public perception of the countryside and agriculture (Tew, and Barbieri, 2012). Agritourism frequently provides an additional source of income, thus contributing to an improved quality of life for rural populations. Moreover, agritourism offers an opportunity for the alternative use of the available resources of agricultural farms, and increases potential for the natural and cultural environment of the countryside (Baum, 2011). Additionally, agritourism helps maintain traditions and the rural lifestyle. An important part of agritourism services involves tourists' intangible benefits that are cost-free, which does affect their price competitiveness. Not only is agritourism a component of the multi-functionality of villages and agriculture. It also represents a multifunctional phenomenon itself. By assumption, it serves a number of functions for reception and emission areas, as it generates income and offers infrastructural, social, and educational benefits. However, agritourism can also potentially lead to adverse consequences. In certain regions, agritourism takes commercialised forms to such an extent that it adversely affects the natural environment and becomes burdensome to local communities, which can lead to local conflicts. These conflicts arise, inter alia, from an increased volume of tourism traffic, including more motor vehicles and pedestrians, noise and vibrations, increased water consumption (particularly in regions with low rainfall and no water supply network), increased volume of generated waste, as well as competitive struggle. Furthermore, rural communities that are attractive to tourists have observed unfavourable landscape changes and the disappearance of traditional ways of rural life (Gao et al., 2014).

Generally, agritourism in Poland is perceived as a panacea for problems in Polish villages, including unemployment and the low incomes of farmers and local governments. Moreover, agritourism development is viewed as creating opportunities to improve the standard of living in the countryside. Since 1989 (i.e. from the political transformation of Poland), all development strategies and programmes have emphasised the need for the economic and social revival of rural areas, as well as the formulation of multifunctional development concepts that promote the development of business activities outside the field of agriculture, such as tourism. In this regard, a special role for regional marketing strategies is assigned to local tourism sectors, and stimulating the development of such activities is prioritised by local government authorities.

Purposes of the study

The attention of researchers investigating websites has often focused on the assessment of website design attributes, development techniques, functionality, and usability. However, solutions that improve website browsing and increase effectiveness are needed, and the role of websites in the promotion and sales of products and services is emphasised. In such studies,

a website can be regarded as a specific "mirror reflection" of the entity it advertises. The presented study is aimed at solving the following problems: what product is offered by agritourism farms, and what is the typology of agritourism farms in terms of the products offered? Do the specific attributes of a website correspond to the specific attributes of provided services? Can the quality of websites, expressed by specific parameters, indicate the type of agritourism farm providing the service? Finally, is there a relationship between the scale and range of services provided by an agritourism farm and the quality of its website? This knowledge may be useful for agritourism farms aiming to create their images by means of appropriate online presentation of services and for customers searching for agritourism facilities online.

An analysis of studies on agritourism farms' websites enabled the formulation of a hypothesis that selected the design attributes of a website indicating the type of agritourism services that can be expected by the customer, and the website development technique translating into the scale and range of conducted agritourism activities. The facilities that conduct commercial activities with a large number of beds while simultaneously offering light catering services, trade, or service provision in the field of mass event organisation typically have professional and extensive websites with numerous functionalities. However, small farms for which tourism represents an additional form of income often have websites built or managed in an amateurish manner. The present study was conducted with the aim of researching the possible relationships between the scale and range of activities pursued by agritourism farms and the quality of their websites.

2. Literature review

Agritourism has received increasing attention in academic literature, and it has been widely promoted both in developed and developing countries. Agritourism is defined as a form of leisure taking place on rural agricultural farms, based on accommodation facilities and activities related to farms and their natural surroundings and production (Flanigan et al. 2015; Streifeneder, 2016).

The development of agritourism brings many benefits to farm owners, villagers and tourists. One of the most important is the possibility of obtaining additional income from offering lodging and selling agricultural products (Barbieri, 2013). The housing resources available in the countryside, coupled with the underutilised workforce, offer many opportunities for providing tourism services (Das, and Rainey, 2010). Furthermore, income generated from tourism enables investment in and upscaling of tourism activities. A consequence of agritourism development in rural areas is a decline in the importance and limitation of agricultural farm production (Flanigan et al., 2015). In extreme cases agriculture

as an economic activity disappears in favour of service (often tourism) activities. Therefore, agritourism contributes to changes in the countryside, and can offer opportunities for development, particularly for small farms that are not specialised in agricultural production (Tew, and Barbieri, 2012). Additionally, agritourism sometimes offers an alternative or additional income source for specialised farms.

Notably, agritourism is also of considerable cultural importance. Agriculture and the people associated with it occupy an important place in national mythologies specific to Central Europe, and the admiration of and affection for the charms of rural life represent an important part of Europe's overall cultural heritage (Bednarek-Szczepańska, 2017). The traditional perception of rural areas is dominated by an image of villagers as people living modestly and in harmony with the nature, who keep traditions alive and are able to act collectively for the benefit of their villages. Agritourism enhances the values of traditional villages and agriculture while reinforcing their social and cultural significance. Simultaneously, a new generation of tourists is growing, for whom the opportunity to spend time in an untypical, fascinating, and innovative manner is becoming increasingly important. Various theme parks and other attractions based on an original idea are enjoying growing popularity (Arroyo et al., 2013). If a provider of agricultural services does not want to be eliminated by competitors, it must think constantly about distinguishing their farm from others, increasing the quality of services provided, and expanding the range of attractions offered to customers (Flanigan et al., 2015; Streifeneder, 2016). Therefore, many farms are currently undergoing a metamorphosis from being typically agricultural, to offering a classic agritourism product, through to specialised farms that remain active in the agricultural sector, and to large-scale farms providing commercial services.

When implemented in a competitive environment, agritourism should consider activities which attract a satisfactory number of customers to farms. After developing an agricultural product and setting a price, relevant information must then be passed on to potential customers. Therefore, many agritourism farm owners seek a way to distinguish their offer and reach out to a wider customer base. To this end they exploit the potential of websites, which enable the creation of both an image and a brand, and help convey an idea of the services provided (Platania, 2014). The interactivity, functionality, and usability of websites may affect the purchasing decisions of their users, including their willingness to shop (Ammirato, 2010; Herrero, and San Martín, 2012). However, website ownership does not guarantee success. A successful website should present valuable content and be created according to design standards, while considering current trends and technological achievements (Oliveira, and Casais, 2019).

Factors determining the quality of a website

The success of a website is primarily determined by its broadly defined quality, the marketing strategies in its environment, and a properly selected internet address (Sanders,

and Galloway, 2013). High usability of a website is perceived as an announcement of the high quality of services presented (San Martín, and Herrero, 2012). However, high quality websites require certain costs to be incurred. In search of savings and budget solutions, agritourism farm owners in Poland frequently face a dilemma between choosing to order the creation of a website and to purchase a hosting package, including the registration of a paid domain, and using a free service. Both paid (subscription) domain websites and free domain websites for agritourism farms can be found online.

The effectiveness of a website is determined by numerous factors. An effective website is a high-quality website, and the quality of a website typically determines its success (Lee, and Kozar, 2012). An effective website achieves specific goals; therefore, it has a satisfactory goal conversion rate (Pierdicca et al., 2019). Moreover, the effectiveness of a website is a result of its usefulness (functionality) and usability (Ali, 2016). This means that when using a website a user can perform specific actions (e.g. leaving a comment, making a booking, ordering a service, or purchasing a product). The usability and usefulness of a website may affect user satisfaction, and could develop the loyalty of users (Belanche et al., 2012). Website effectiveness is significantly affected by the website development technique. An effective website is a high-performance website that loads quickly in a browser window and is responsive (Dickinger, and Stangl, 2013). The effectiveness of a website should not be restricted by the display size of the device on which it is viewed (Schubert, 2016).

An effective website is also aesthetically pleasing. The effectiveness of a website is determined by its graphics and visuals, relating to attractive design and aesthetic value (Luna-Nevarez, and Hyman, 2012). Additionally, an effective website is available to all users, regardless of their limitations and disability. The ergonomics of the user interface, navigation facilitating content search, and its form of presentation are the means by which the impression of a website's professionalism is created, while building trust in the entity the website advertises. Moreover, the effectiveness of a website is also determined by the affordability of its content. The use of simple language increases the likelihood that customers will understand the message in accordance with the author's intentions. The effectiveness of a website is also determined by the appropriate formatting of the textual content, using headers, distinguishing features and bulleted lists. The presented contents should therefore be useful, varied, complete, unique, natural, and formatted appropriately, as well as complemented with graphics, videos, and also virtual tours (Paulo et al. 2018).

Website effectiveness is also determined by the support it receives on social media (Varkaris, and Neuhofer, 2017; Leung, and Jiang, 2018). The effectiveness of a website may be increased by links from high-quality websites. The diversification of traffic sources and synergy of marketing channels may also contribute to increased website traffic, which translates into improved website effectiveness (Danaher, and Rossiter, 2011). Maintaining or achieving specific effectiveness requires website monitoring, continuous modernisation and optimisation, and responding to the changing environment, which includes changes in search

engine algorithms and changes based on competitors' actions (Killoran, 2013). Effective websites are frequently updated and ranked high in search results. An effective website is one that serves specific functions, including the provision of information, marketing, contact, personalisation, booking, and payment functions.

3. Materials and methods

The present study was conducted for a set of agritourism farm websites whose addresses were obtained from the following national website catalogues: onet.pl, agroturystyka.pl, and wp.pl. The inclusion criteria for websites included a clear declaration provided in the website heading or published content indicating that the farm conducts agritourism activities (i.e. clear declarations of agritourism activities). The websites of boarding houses, motels, manor-houses, and other hotel facilities – although placed in directories within the "agritourism" category – were excluded. From a total of 574 websites subjected to inspection testing, 287 websites (the initial set) were hosted on a paid server with the assigned country code top-level domain (ccTLD, an individual name in the .pl domain) and 287 websites (the second set) were hosted on a free server with an assigned free domain (free hosting package). This resulted from the assumption that the scale and range of activities conducted by farms differ between those with free domain websites and those with subscription websites. Moreover, it was also assumed that the quality of subscription websites was higher than that of free domain websites.

The present study was conducted at three levels: 1) economic and marketing, 2) functionality, and 3) website development technique. Variables describing the services offered by a farm were placed on the first level and classified as economic and marketing indicators. It was assumed that the services offered by a farm provide a basis for marketing activities, resulting in this name being adopted for this group of variables. A detailed analysis was performed of the services offered by farms, including: the form and range of their activities, including the number of beds offered in the hosts' family home, in holiday cottages, and stand-alone independent residential buildings; the number of rooms; the price of one night's accommodation for an adult; the cost of full-day catering; the accessibility of rooms for people with disabilities; agricultural activities being conducted by the farm; and the leisure activities offered to holiday-makers on the farm. Tourism facilities guarantee on-site activities for guests both inside and outside buildings (in the open air), as well as outside the premises (frequently in cooperation with other specialised entities). However, only the activities available on the agritourism farm were assessed in the present study. It was assumed that activities such as billiard sports, sauna, hot tub, paintball games, or quad riding are typical of facilities pursuing commercialised activities offering several dozen to over 100 beds,

representing a specific measure of the degree of commercialisation of the services offered. Simultaneously, it was assumed that classic agritourism farms offered such attractions less frequently. An analysis of these attributes enabled an assessment of the scale (how many beds are offered by a farm?) and range of services (what attractions are available to tourists on a farm?) provided by farms (Table 1).

Table 1.
A set of diagnostic variables characterising the agritourism services offered, the functionality, and the website development technique

Group of variables	Diagnostic variables	Range of scores and unit of measurement
Services offered (economic and marketing indicators)	X_1 – total number of beds (including: number of beds in guest rooms; number of beds in year-round or summer tourist cottages)	3-158 beds
	X_2 – organisation of special events	0-1 points
	X_3 – catering offered by the accommodation facility (full-day catering)	0-1 points
	X_4 – adaptation of the offer to the needs of people with disabilities	0-1 points
	X_5 – agricultural or fruit-growing activities	0-1 points
	X_6 – fishponds, an opportunity for fishing	0-1 points
	X_7 – farm animals	0-1 points
	X_8 – an opportunity for organising a bonfire or a barbecue	0-1 points
	X_9 – playground for children	0-1 points
	X_{10} – conducting of workshops	0-1 points
	X_{11} – recreational and sports infrastructure	0-1 points
	X_{12} – billiard sports	0-1 points
	X_{13} – sauna	0-1 points
	X_{14} – swimming pool, hot tub	0-1 points
	X_{15} – an opportunity for riding bicycles	0-1 points
	X_{16} – paintball	0-1 points
	X_{17} – an opportunity for using water sports equipment (i.e. kayaks, boats, etc.)	0-1 points
	X_{18} – an opportunity for horse riding	0-1 points
	X_{19} – access to Wi-Fi	0-1 points
	X_{20} – accessibility of multimedia materials (e.g. films, spherical panoramas, or virtual tours)	0-1 points
	X_{21} – website built in a foreign language	0-1 points
	X_{22} – website built by a marketing agency	0-1 points
Functionality	X_{23} – contact form	0-1 points
	X_{24} – service booking form	0-1 points
	X_{25} – online payment form	0-1 points
Website development technique	X_{26} – code syntax correctness (W3C)	0-1 points
	X_{27} – the use of HTML5 or XHTML Strict specification	0-1 points
	X_{28} – compatibility with mobile devices	0-1 points
	X_{29} – website performance on desktop devices (according to PSI)	0-100 points
	X_{30} – website performance on mobile devices (according to PSI)	0-100 points
	X_{31} – level of search engine optimisation (SEO) (according to ClearSense)	0-100 points
	X_{32} – level of search engine optimisation (SEO) (according to Semtec)	0-100 points
	X_{33} – level of search engine optimisation (SEO) (according to Sunspot)	0-100 points
	X_{34} – content management system (CMS)	0-1 points
	X_{35} – components extending the functionality and interactivity	0-4 points

Source: authors' own elaboration.

The second level includes attributes enabling the assessment of a website's functionality, with the accessibility of contact and booking forms, as well as an opportunity for making electronic payments being noted. The third level included the assessment of attributes characterising the website development technique, which was assessed based on selected engineering criteria, including international W3C (*World Wide Web Consortium*) standards, responsiveness (compatibility with mobile devices), and design criteria, including web performance and the level of search engine optimisation (Pan, 2015). This grouping of attributes enabled the assessment of relationships between the scale and range of services provided by farms (first level indicators – economic and marketing indicators) and the quality of their respective websites (second and third level indicators – functionality and website development technique).

Each website was described using 35 diagnostic variables, of which 22 were economic and marketing characteristics, 3 were related to functionality, and 10 were related to website development technique. It was assumed that the selected variables would be sufficient to assess the range and form of services provided by farms and their website development techniques.

In addition, the technical parameters of websites were tested using selected web-based test automation applications (Table 2). Code syntax correctness was verified using the W3C Markup Validation Service online application. One point was awarded for a lack of code syntax errors. During manual inspection of the code, the specifications in which a website had been built were noted, and one point was awarded for the use of the latest HTML5 specification or one of the XHTML specifications. Website responsiveness was tested using the Opera Mobile Classic Emulator application, which enables browsing websites in the window of a selected mobile device in the Opera Mini browser, with one point being awarded for responsiveness. Website performance was tested using the Google PageSpeed Insights application. The level of search engine optimisation was verified using three web-based applications, namely ClearSense SEO Audit, Semtec SEO Audit, and Sunspot SEO. In addition, the components used to build a website and the content management system (CMS) were verified using the Complex SEO Audit application. One point was awarded for each component noted (components frequently increase the functionality and usability of a website, although they may decrease web performance). One point was also awarded for the use of the content management system (CMS). The achieved score was subsequently normalised using the zero unitarisation method.

Table 2.

Parameters adopted in the assessment of agritourism farm websites and testing applications

Design (qualitative) attributes	Testing application (form of test)
Design standard according to W3C, DTD (document type definition) (X_{26}, X_{27})	W3C Markup Validation Service (readout of the DTD header and validation of HTML code syntax correctness)
Responsiveness – compatibility with mobile devices (X_{28})	Opera Mobile Classic Emulator (simulation of website browsing on mobile devices)
Web performance (X_{29}, X_{30})	PageSpeed Insights (measurement of website performance on desktop and mobile devices)
Search engine optimisation (SEO) (X_{31}, X_{32}, X_{33})	ClearSense SEO Audit, Semtec SEO Audit, and Sunspot SEO Audit (a test on selected website parameters affecting search result position)
Technology of website building, design techniques, and tools used (X_{34}, X_{35})	Complex SEO Audit (identification of the content management system (CMS), identification of components extending functionality and interactivity, e.g. jQuery)

Source: authors' own elaboration.

Zero unitarisation method

Zero unitarisation is a method of normalising diagnostic features (Balcerzak, 2015), and is characterised by a constant reference point (i.e. the range of the normalised variable). Normalisation is an operation aimed at the adaptation of diagnostic variables to the role of partial criteria in the process of complex phenomenon assessment. Diagnostic features are usually expressed in various units of measurement, and have corresponding, different numerical ranges. Normalisation methods are used to transform absolute values into relative values, with transformed variables having no unit, and being unified in terms of the range of values they can take on. Therefore, the normalisation of features enables comparative testing on objects (complex phenomena) described using many variables.

Given that the variables adopted for the present analysis were of a stimulant nature, formula (1) was applied in the unitarisation process in order to replace different ranges of variability with a constant range, and to make them comparable with each other. This enabled the description of each website with a normalised website development index (WDI) and a normalised index of the range of services offered (SOR). The WDI index was the result of adding up normalised variable values from the set of variables characterising the website development technique as well as website functionality (as attributes resulting directly from the website development technique). The SOR index was the result of adding up normalised variable values from the set of variables characterising the services offered.

$$x'_{ij} = \frac{x_{ij} - min_i\{x_{ij}\}}{max_i\{x_{ij}\} - min_i\{x_{ij}\}} \qquad (1)$$

Based on the values of aggregated variables, the website quality index SQI was subsequently determined, which allowed websites to be grouped according to the quality criterion. Moreover, the value of the "accumulated quality index" for each set of websites was calculated. Moreover, the relationships between the website development technique (expressed with the WDI) and the scale and range of services provided (expressed with the

SOR) were assessed using the Pearson correlation coefficient. This correlation coefficient was calculated for both the set of paid domain websites and the set of free domain websites.

4. Study results

On the paid domain websites of agritourism farms (the first set) a total of 5913 beds were noted, including 4688 in 1337 rooms rented in the hosts' homes or in residential buildings only offered to holidaymakers, while 1225 beds were available year-round or in summer tourist cottages. On average, there were 21 beds per facility, with most facilities offering from several to a few dozen beds.

The farms that presented their offers on free websites (the second set) offered approximately 38% fewer beds in 871 rooms (an average of 12.5 beds). In this set, a much greater proportion of farms had a maximum of 10 beds. In addition, these farms offered accommodation in holiday cottages twice as early. Therefore, it can be concluded that the websites of farms targeted at agritourism activities with more beds more frequently had modern, responsive websites.

Every second agritourism farm that presented offers on a paid website demonstrated the infrastructure necessary for organising special events, including wedding receptions (144 farms, over 50%). However, for offers placed on free websites, only 58 such farms were noted (slightly over 20%).

Full-day catering proved to be standard in the farms under study. These services were declared by 80% of farms presenting an offer on a free website (231 cases), with the price indicated only for every fourth farm. Regarding offers placed on paid websites, full-day catering was declared by 171 farms (approx. 60%), of which 108 indicated their price.

Accommodation and catering in facilities presenting offers on paid domain websites were typically more expensive than those using free domain websites. The average price of an overnight stay for an adult in offers placed on paid domain websites ranged from PLN 21.5 (approx. 5 Euro) to PLN 46 (approx. 11 Euro). Furthermore, an overnight stay on farms presenting offers on free domain websites ranged from PLN 16.5 (approx. 4 Euro) to PLN 32 (approx. 7.5 Euro). The average price for full-day catering offered on paid domain websites was PLN 50 (approx. 12 Euro), while it was PLN 40 (approx. 9.5 Euro) for offers placed on free domain websites. In most cases, the costs of stay were negotiable, and depended heavily on the number and type of booked beds, the range of services ordered (accommodation with or without catering, an extra bed, a visit with guests' own animals), and on the length and period of stay (in season or off-season). Notably, the values provided here are approximate, and the final costs were not used for the final assessment of studied farms. Agritourism farms frequently failed to present a service price list on their websites, though farms using free

domain websites were less likely to include this information. Moreover, service price lists were presented for a variety of offer variants and configurations, as farms set their own time periods typical of a particular location, which determined the price for accommodation. For example, selected farms had higher prices during the so-called "natural period" when selected animal or plant species could be observed. Farms also made prices dependent on the holiday period, "from autumn to early spring", or during events (holidays) such as the "May Day Picnic" or Easter.

For the set of paid domain websites, 72 (12%) presented offers in a foreign language or provided automatic translation of the content. In the set of websites hosted on free servers, only 20 such cases were noted. Therefore, it is evident that most of the analysed offers were intended for the national (Polish) market.

A total of 139 (48%) agritourism farms presenting offers on paid domain websites declared agricultural or fruit growing activities (of various scales) and, in 133 cases, kept farm animals. However, these activities were often conducted "for show", and served the role of a specific tourism "attraction". In addition, every third farm (96 websites, 33%) declared that they owned fishing ponds, either used for fish farming or recreation. In agritourism offers presented on free websites, 92 farms declared agricultural activity, 100 owned farm animals, and 83 offered visitors access to fishing ponds. It should be emphasised here that the data obtained from free websites may be underestimated, as offers presented in this group were often described superficially. However, more information could often be read from website photo galleries than from text descriptions. This was different for websites with a paid address, where leisure offers were usually extensively described.

Agritourism farms presenting offers on paid websites more frequently included activities such as billiard sports, sauna, swimming pools, or paintball. The most popular forms of activity offered on farms include outdoor sports such as water sports and horse riding.

Only 10 agritourism farms (all from the first set) declared the adaptation of farm infrastructure to meet the needs of disabled people. A relatively high number (37%) of websites from the first set had been built by IT service companies or marketing agencies whose signature was provided at the bottom of the website (the "footer"), while only one such case was noted in the second set. In the set of paid domain websites, 45% (130 websites) were compatible with mobile devices. Moreover, the content management system (CMS) was identified in 152 cases (53%). Additionally, 60% websites from this set were built in the latest HTML5 specification or in one of the (X)HTML Strict specifications. Among the free domain websites, only 7 responsive websites, 11 websites built based on the content management system (CMS), and 37 (13%) websites built in one of the valid HTML specifications were noted, with most being rated as amateurish and created at the lowest possible cost (Table 3).

Table 3.
Total number of beds offered by agritourism farms in the studied dataset

Offer presentation	3-10	11-20	21-50	51-100	>100	Total
Paid domain websites (ccTLD)	51	152	74	8	2	287
Free domain websites	156	109	21	1	0	287
Total	207	261	95	9	2	574

Source: authors' own study.

On paid domain addresses a contact form was provided in 97 cases. Lodging could be booked using an online form on 25 websites (9%), while only 2 websites offered an opportunity to pay a deposit fee or the costs of stay via PayPal. Among free domain websites a contact form was available in only 3 cases, while the same number of websites offered an accommodation booking form. Moreover, none of the free domain websites had enabled payment options. In addition, viewing free websites was significantly hindered by advertisements in 199 cases (70%), which contained content dependent on the hosting service provider.

A low accumulated website development index (WDI) value of 1.42 characterised the set of paid domain websites, while for free domain websites it was even lower at 0.94. During the study the website performance parameter increased the rating of website development technique for simple, out-dated, free subdomain websites, while decreasing it for mobile websites using modern components to extend their functionality and interactivity. This is due to the fact that websites built in an out-dated manner, which are static and present information primarily using text, are small in size, use a small number of image files, and even fewer external resources. Therefore, they load rapidly in browsers due to their simplicity.

An accumulated, reduced index of the scale and range of agritourism offers (SOR) of 2.08 characterised the set of paid domain websites, while free domain websites exhibited a value of 1.29. For paid domain websites the total value of the accumulated quality index was 3.5, which was higher than the value for free domain websites (2.2).

The paid domain websites of agritourism farms most frequently obtained an SQI index value ranging from 10 to 14.99, with as many as 207 websites (approx. 72%) obtaining a value exceeding 10. Free domain websites were ranked lower (Table 4). Of the set of 287 websites, as many as 208 (approx. 72%) obtained SQI values ranging from 4 to 9.99.

Table 4.
Number of websites according to SQI value

SQI qualitative range	1.9-3.99	4.0-6.99	7.0-9.99	10.0-14.99	15.0-20.4	Total
Paid domain websites	1	20	59	138	69	287
Free domain websites	18	105	103	58	3	287
Total	19	125	162	196	72	574

Source: authors' own study.

Analysis using the Pearson correlation coefficient (r = 0.155) for the set of paid domain websites presented a weak correlation between website development technique (WDI) 0.5 significance level. This implies that a paid website determines a better, more complete

offer presentation. It is evident that farm hosts pay more attention to the offer descriptions and presentation when spending resources on website maintenance. It can be concluded that farms with a professionally built website usually have a more extended offer for tourists. It can also be concluded that improved technical quality (development technique) in a website resulted in an improved presentation of what farms offered to tourists and the range of services offered (SOR), which was statistically significant at $\alpha = 0$.

An analysis of the Pearson correlation coefficient (r = 0.02) in the set of free domain websites demonstrated that the correlation between the website development technique (WDI) and the range of services offered (SOR) was not statistically significant at $\alpha = 0.05$ significance level. This implies that out-dated website development techniques were not an obstacle to providing a full description of the services offered, which are not significantly inferior to those presented on paid websites. However, a distinction should be made between the range of an offer and the form of its presentation – which has not been assessed – as it involves an assessment of graphics. This, in turn, may be the result of the auditor's subjective preferences. This does not change the fact that offers on free websites were usually presented with significant issues (e.g. a service price list being omitted).

5. Typology of agritourism farms

Based on the observations made in the present study, it can be concluded that website development technique translates into the nature of activities conducted by a farm, as the form of offer presentation online translates into what a tourist can expect directly on the farm. An analysis of offers placed on the websites of agritourism farms in Poland reveals four main forms of the services provided:

1. The first type (T1) is "classic" agritourism; an agricultural agritourism farm providing services to tourists on a relatively small scale, offering from a few to several beds in the host's house, and allowing tourists to participate in field work and have contact with farm animals. Agritourism activities are usually regarded as an additional source of income, and farms themselves conduct production activities of various scales. These farms are frequently based on multi-generational traditions. The hosts cultivate the land, sow grains, and grow potatoes. They have a vegetable garden as well as fruit trees and bushes. They also produce food products, and often everyday and ornamental objects (handcrafted articles) as well. These farms' activities are not aimed at the maximisation of occupancy rate;

2. The second type (T2) is "specialised farms" with a specific agricultural activity profile, either cultivation or breeding. These are farms which keep studs, have orchards, nurseries, or fishing ponds, are aimed at providing tourism services such as

rafting and canoeing trips, or frequently organising "green schools" and thematic workshops.

3. The third type (T3) is "para-agritourism farms", being tourism farms located in rural areas. Their owners do not conduct agricultural activities and have no farm animals, only pursuing activities that involve offering beds in facilities such as a boarding house, motel, or guest rooms; however, they do so under the banner of agritourism. There, the agricultural production aspect is reduced to a house garden or a vegetable garden. This is also frequently an activity involving the renting of holiday cottages.

4. The fourth type (T4) represents "neo-agritourism", tourism "in an agritourism style", or "quasi-agritourism" activities provided by extensive farms, agritourism centres, and in modern, often large facilities (on average from several to a few dozen beds), either traditionally built or patterned on a traditional style. This is a form of commercialised tourism. Descriptions of the activities conducted in such facilities present agritourism as "civilised rural tourism", "closeness to nature along with the comfort of leisure", and "convenient accommodation in rural style". Many of these facilities keep farm animals and pursue agricultural (often fruit-growing) activities, but this is not exhibited. A typical rural background with hens and ducks running around is not to be found here. In these farms agricultural activity only provides a background for tourism, and farm animals are frequently kept in "mini zoos". Agricultural machines and equipment are often treated as exhibits, and older ones as museum objects. These farms prefer large organised groups and the organisation of special events. They frequently even have several large rooms at their disposal, which can accommodate up to several dozen people. Offers are targeted at wealthy customers willing to pay a higher price, and requiring more luxury. Such facilities often have a reception and a restaurant, manage a facility servicing offices, and sell gift vouchers, discount cards and vouchers for their services. They frequently offer a myriad of activities, including: paintball games, quad riding, saunas, hot tubs and indoor swimming pools, as well as spa and cosmetic services, organised health camps and slimming holidays with cosmetic treatments, exercise packages, and consultations with a dietitian, while hosting green schools, day camps, and camps with various activities and excursions. This is a specialised tourism activity conducted in rural areas, and often on a large commercialised scale.

Free domain websites with inferior technical parameters, which frequently displayed external advertisements, were more often used by classic agritourism farms (T1) and farms that did not pursue agricultural activities (or these activities were only pursued on a small scale, for their own use) (T3). For the owners of these farms, agritourism was usually an additional source of income. The scale of activities for these farms was mostly small, and amounted to a few or several beds in rooms located in the hosts' home. Free websites were not used by any entities pursuing commercial activities in rural areas (T4). It can also be

concluded that a large number of facilities that invested in paid websites were in a "transitional" phase from agricultural activities to service activities: a total of 124 farms with paid websites were in the "phasing out agricultural operations" phase, while developing offers for tourists. Websites with inferior technical parameters of the "old design" type were characterised by poor content, static layout (800-1000px width), small fonts, no CMS, and static geoinformation (raster map). Such websites were usually used by classic, small, rural farms for which agritourism was an additional activity.

The present study demonstrates that with increasing website quality – expressed by selected attributes of website development techniques (e.g. the HTML version used, responsiveness, performance, level of search engine optimisation, and the functionality range) – the degree of commercialisation of an agritourism farm as well as the scale and range of available activities tends to increase. Agritourism farms pursuing commercialised activities (T4) more often possessed high-quality websites that ranked high in the assessment of parameters (e.g. 89 points out of the 100 that could be obtained in the SEO test). Classic, small agritourism farms more frequently had free domain websites characterised by a static form and a lower level of search engine optimisation (lower goal conversion capabilities).

6. Website quality and the nature of agritourism services

The present study demonstrated that with increasing website quality (expressed, inter alia, by responsiveness, web performance and the level of search engine optimisation), both the number of functionalities offered by the website and the scale and range of services provided by the agritourism farm increase. That is, farms pursuing commercial activities tend to have better quality websites.

Agricultural farms that regard agritourism as an additional source of income (classic agritourism, T1) frequently do not own a website, and tend to use national portal grouping offers of accommodation and social media, or have websites built at the lowest possible cost, which are old-fashioned, amateurish, static, and frequently in the form of online showcases or specific "online information sheets" (i.e. a short text description adorned with a couple of photographs and contact details, with everything included in a single hypertext document). These websites are often maintained on free servers with the assigned free domain. The technique of their development leaves much to be desired, and the offer description is often concise, incomplete, and out-dated, which translates directly into the goal conversion. Such websites do not serve their marketing and information functions, nor do they exploit the internet's full potential. Another important aspect is that such websites are "invisible" on the internet, as they may have low positions in search results. The hosts, however, are not usually

interested in intensive promotion of services online, primarily due to the small scale of the activities carried out, and to the fact that they treat them as an additional source of income.

The websites of the largest agritourism facilities (neo-agritourism, T4) are most frequently built and supported by interactive agencies. These websites are modern, frequently updated, and prepared with mobile devices in mind. Such websites serve a representative and marketing function, and are used to acquire customers. Offers are presented in a dynamic and interactive manner with attractive graphics, frequently using professionally edited photographs. Such websites provide multimedia, which often take the form of interactive spherical panoramas (virtual presentation of the farm's infrastructure). Moreover, contact forms and service booking forms are often provided on these websites, which has been confirmed by other studies. Nieto, Hernández-Maestro, and Muñoz- Gallego (2011) studied 150 rural Spanish tourism facilities and their websites. The authors demonstrated that 42% of entrepreneurs in their study maintained their own website, while the majority hired an external firm to maintain and develop websites for them.

Farms pursuing specialised agricultural or breeding activities, as well as farms that do not conduct agricultural activities only offer beds in rural areas (the third and fourth type), and usually only have online showcases. These farms are typically characterised by a lack of booking and payment functionalities and contact forms. Such websites primarily provide basic information and contact details.

7. Discussion of results

Phillip et al. (2010) presented a typology of agritourism farms that considered the farms' agricultural activities as well as tourism opportunities involving participation in daily farm work (non-working or working farm agritourism, passive, indirect or direct contact agritourism, staged agritourism, or direct contact, authentic agritourism). This typology is focused on agricultural farms and the nature of activities they pursue.

More recently, Flanigan, Blackstock, and Hunter (2014) modified the classification offered by Phillip et al. (2010). Notably, the phrase "a holidaymaker's contact with the agricultural farm" was replaced by "interaction" (i.e. what is the nature of interaction between guests and agriculture?). This phrase more completely reflects the relationship between the holidaymaker and the inhabitants of the agritourism farm, as interaction includes both the tourist's impact on the hosts and the hosts' impact on the tourist. Notably, the nature of the interaction is determined by the type of agritourism farm in question. Differences exist between facilities of the NWF type (non-working farm agritourism) and farms of the WFDCA type (working farm, direct contact, authentic agritourism (Flanigan et al., 2014).

The typology was developed during the research results based on the assessment of agritourism farms' websites. A "reverse" approach was applied to develop the typology, with farm websites, website development techniques, and the presentation of the offered services representing the basis of considerations. It is the website that provides the basis for the typology—an image of a farm emerging from an analysis of its website, resulting in the farm being classified in a particular category.

The present study concludes that agritourism farms can generally be divided into those with modern websites and those with old-fashioned or amateurish websites that are frequently hosted on free domains. The former type usually conducts more or less commercialised activities, with tourism as their main income source. On the other hand, the latter type usually conducts agricultural activities while simultaneously offering accommodation services. For such farms agritourism represents an additional income source. Certainly, "somewhere in between" forms exist, yet the existing regularity holds true. The more commercialised (specialised) a facility, the more modern and developed their website.

8. Recommendations for tourists, practitioners, and policy makers

The present study offers recommendations for tourists, owners of agritourism farms, and website developers. Farms conducting commercialised activities typically offer their services to organised groups and to wealthy customers who are willing to pay more for a service while expecting sophisticated attractions and luxurious amenities such as saunas, hot tubs, spa services, and/or quad riding. A sophisticated website with a modern layout can be associated with a certain type of service and agritourism facility, including the scale of pursued activities. As such, customers searching for small agritourism farms will find them on classic, often rustic websites.

The present study also revealed that underdeveloped, amateurish websites are used to promote traditionally understood family agricultural farms which, instead of hot tubs and spas, offer an opportunity to work on the farm. This knowledge is of importance for tourists worldwide, as tourists should not be afraid of the amateurish (underdeveloped) websites of agritourism farms, as they advertise genuine rural agricultural farms offering accommodation. However, customers searching for leisure in rural areas who are not interested in traditionally understood agritourism should seek offers hosted on modern websites, as it is more plausible to conclude that such websites advertise entities pursuing commercialised activities. Website developers should also be aware of this trend, and should determine the type of customer that the website aims to cater to at the design stage. Therefore, website developers should select website parameters such as graphic design in relation to the customer's profile, or, indirectly, to the scale and range of the activities conducted by the farm.

9. Conclusion

The results of the present study highlight the services provided by agritourism farms in Poland as seen through the eyes of an online user viewing a browser window. A website presents a certain projection or presentation that may either encourage a customer to book a service or discourage them from doing so. Furthermore, it creates an impression of the service in the customer's mind. Notably, it is the hosts who must ensure that the realities of their farm are appropriate to those created in the customer's mind after having read the offer presented online.

The quality of a website may indicate the nature, scale and range of services that an agritourism farm provides. Farms advertised on simple and ordinary, amateurish websites – which are frequently hosted at a free domain – are usually involved in traditional agritourism activities on a small scale, where holidaymakers can experience farm work and get in contact with farm animals. In turn, facilities carrying out activities "in the agritourism style" or through "neo-agritourism" activities – where farm animals and farming hold a specific attraction to visitors – usually have responsive and extensive websites complete with multimedia. Therefore, paradoxically, an offer of traditionally understood agritourism on an agricultural farm can be found on simple web pages or online showcases. This implies that the presentation of an agritourism offer on a web page with inferior technical parameters does not necessarily imply an inferior quality of the services provided.

A certain phenomenon which accompanies the enlargement of agritourism facilities is their gradual transformation into mass tourism facilities in which farm work is replaced by activities such as Nordic walking, yoga exercises, mud baths, massages and spa treatments, and traditional rural vegetable-based meals. All of the aforementioned activities are offered in rural areas, and in facilities that are modernly equipped yet patterned on a traditional, wooden, regional structure. However, such offers are not addressed to every customer, as there remain a group of holidaymakers who prefer to rest in ordinary agricultural farms. This sector is also visible online. An increasing number of entities providing tourism services are advertised by websites created by interactive (marketing) agencies, which demonstrates the specialisation in tourism as well as the commercial nature of the services provided. This is because such websites exist to guarantee the promotion of offers online in the form of a continuous inflow of new customers, since the success of commercial facilities is determined by the number of overnight stays sold.

10. Limitations of the study and further research

The study indicates certain trends. It confirms that agritourism farms which pursue commercial activities on a larger scale usually have websites of better quality. There are, however, small farms with a few beds which have high-quality websites, and large farms with websites of poor quality. Therefore, the study results should not be perceived in absolute terms. They can offer certain suggestions to farm owners as to what website parameters they should take care of for it to be of good quality, and to customers as to what website parameters they should focus on, and what parameters may show the actual picture of a farm as well the range and form of services provided. The research materials were collected in 2017, and their analysis showed the current state of the problem. A repetition of the study in a few years will enable the observation of trends in the information and promotional actions in agritourism, including the indication of changes in the services offered in the fields of agritourism and rural tourism.

References

1. Ali, F. (2016). Hotel website quality, perceived flow, customer satisfaction and purchase intention. *Journal of Hospitality and Tourism* Technology, 7(2), 213-228. DOI: https://doi.org/10.1108/JHTT-02-2016-0010.
2. Ammirato, S. (2010). An empirical study of agritourism evolution and e-commerce adoption challenges. *Information Technology & Tourism, 12(1),* 89-104. DOI: https://doi.org/10.3727/109830510X12747489979664.
3. Arroyo, C.G., Barbieri, C., and Rich, S.R. (2013). Defining agritourism: A comparative study of stakeholders' perceptions in Missouri and North Carolina. *Tourism Management, 37*, 39-47. DOI: https://doi.org/10.1016/j.tourman.2012.12.007.
4. Balcerzak, A.P. (2015). Europe 2020 strategy and structural diversity between old and new member states. Application of zero unitarization method for dynamic analysis in the years 2004-2013. *Economics & Sociology, 8(2)*, 190-210.
5. Barbieri, C. (2013). Assessing the sustainability of agritourism in the US: A comparison between agritourism and other farm entrepreneurial ventures. *Journal of Sustainable Tourism, 21(2)*, 252-270. DOI: https://doi.org/10.1080/09669582.2012.685174.
6. Baum, S. (2011). The tourist potential of rural areas in Poland. *Eastern European Countryside, 17*, 107-135. DOI: https://doi.org/10.2478/v10130-011-0006-z.
7. Bednarek-Szczepańska, M. (2017). Rural tourism – 'an apple of the eye' of rural policy in Poland. *Europa XXI,* 32, 37-50.

8. Belanche, D., Casaló, L.V., and Guinalíu, M. (2012). Website usability, consumer satisfaction and the intention to use a website: The moderating effect of perceived risk. *Journal of Retailing and Consumer Services, 19(1),* 124-132.

9. Danaher, P.J., and Rossiter, J.R. (2011). Comparing perceptions of marketing communication channels. *European Journal of Marketing, 45(1/2),* 6-42.

10. Das, B.R., and Rainey, D.V. (2010). Agritourism in the Arkansas Delta Byways: Assessing the economic impacts. *International Journal of Tourism Research, 12(3)*, 265-280. DOI: https://doi.org/10.1002/jtr.752.

11. Dickinger, A., and Stangl, B. (2013). Website performance and behavioral consequences: A formative measurement approach. *Journal of Business Research, 66(6)*, 771-777. DOI: https://doi.org/10.1016/j.jbusres.2011.09.017.

12. Flanigan, S., Blackstock, K., and Hunter, C. (2014). Agritourism from the perspective of providers and visitors: A typology-based study. *Tourism Management, 40*, 394-405. DOI: https://doi.org/10.1016/j.tourman.2013.07.004.

13. Flanigan, S., Blackstock, K., and Hunter, C. (2015). Generating public and private benefits through understanding what drives different types of agritourism. *Journal of Rural Studies, 41*, 129-141. DOI: https://doi.org/10.1016/j.jrurstud.2015.08.002.

14. Gao, J., Barbieri, C., and Valdivia, C. (2014). Agricultural landscape preferences: Implications for agritourism development. *Journal of Travel Research, 53(3)*, 366-379. DOI: https://doi.org/10.1177/0047287513496471.

15. Herrero, Á., and San Martín, H. (2012). Developing and testing a global model to explain the adoption of websites by users in rural tourism accommodations. *International Journal of Hospitality Management, 31(4)*, 1178-1186. DOI: https://doi.org/10.1016/j.ijhm. 2012.02.005.

16. Killoran, J.B. (2013). How to use search engine optimization techniques to increase website visibility. *IEEE Transactions on professional communication, 56(1)*, 50-66. DOI: https://doi.org/10.1109/TPC.2012.2237255.

17. Lee, Y., and Kozar, K.A. (2012). Understanding of website usability: Specifying and measuring constructs and their relationships. *Decision Support Systems, 52(2)*, 450-463. DOI: https://doi.org/10.1016/j.dss.2011.10.004.

18. Leung, X.Y., and Jiang, L. (2018). How do destination Facebook pages work? An extended TPB model of fans' visit intention. *Journal of Hospitality and Tourism Technology, 9(3),* 397-416. DOI: https://doi.org/10.1108/JHTT-09-2017-0088.

19. Luna-Nevarez, C., and Hyman, M.R. (2012). Common practices in destination website design. *Journal of Destination Marketing & Management, 1(1-2),* 94-106. DOI: https://doi.org/10.1016/j.jdmm.2012.08.002.

20. Nieto, J., Hernández-Maestro, R.M., and Muñoz-Gallego, P.A. (2011). The influence of entrepreneurial talent and website type on business performance by rural tourism

establishments in Spain. *International Journal of Tourism Research, 13(1)*, 17-31. DOI: https://doi.org/10.1002/jtr.794.

21. Oliveira, B., and Casais, B. (2019). The importance of user-generated photos in restaurant selection. *Journal of Hospitality and Tourism Technology*, *10(1),* 2-14. DOI: https://doi.org/10.1108/JHTT-11-2017-0130.

22. Pan, B. (2015). The power of search engine ranking for tourist destinations. *Tourism Management, 47*, 79-87. DOI: https://doi.org/10.1016/j.tourman.2014.08.015.

23. Paulo, M.M., Rita, P., Oliveira, T., and Moro, S. (2018). Understanding mobile augmented reality adoption in a consumer context. *Journal of Hospitality and Tourism Technology*, *9(2),* 142-157. DOI: https://doi.org/10.1108/JHTT-01-2017-0006.

24. Phillip, S., Hunter, C., and Blackstock, K. (2010). A typology for defining agritourism. *Tourism Management, 31*, 754-758. DOI: https://doi.org/10.1016/j.tourman.2009.08.001.

25. Pierdicca, R., Paolanti, M., and Frontoni, E. (2019). eTourism: ICT and its role for tourism management. *Journal of Hospitality and Tourism Technology, 10(1),* 90-106. DOI: https://doi.org/10.1108/JHTT-07-2017-0043.

26. Platania, M. (2014). Agritourism farms and the web. An exploratory evaluation of their websites. *Agris On-line Papers in Economics and Informatics, 6(3)*, 51-58.

27. San Martín, H., and Herrero, Á. (2012). Influence of the user's psychological factors on the online purchase intention in rural tourism: Integrating innovativeness to the UTAUT framework. *Tourism Management, 33(2)*, 341-350. DOI: https://doi.org/10.1016/j.tourman. 2011.04.003.

28. Sanders, J., and Galloway, L. (2013). Rural small firms' website quality in transition and market economies. *Journal of Small Business and Enterprise Development, 20(4)*, 788-806. DOI: https://doi.org/10.1108/JSBED-01-2012-0009.

29. Schubert, D. (2016). Influence of mobile-friendly design to search results on Google search. *Procedia-Social and Behavioral Sciences, 220*, 424-433. DOI: https://doi.org/10.1016/j.sbspro.2016.05.517.

30. Streifeneder, T. (2016). Agriculture first: assessing European policies and scientific typologies to define authentic agritourism and differentiate it from countryside tourism. *Tourism Management Perspectives, 20*, 251-264. DOI: https://doi.org/10.1016/j.tmp. 2016.10.003.

31. Tew, C.H., and Barbieri, C. (2012). The perceived benefits of agritourism: The provider's perspective. *Tourism Management, 33(1)*, 215-224. DOI: https://doi.org/10.1016/j.tourman.2011.02.005.

32. Varkaris, E., and Neuhofer, B. (2017). The influence of social media on the consumers' hotel decision journey. *Journal of Hospitality and Tourism Technology, 8(1),* 101-118. DOI: https://doi.org/10.1108/JHTT-09-2016-0058.

BARRIERS TO SUCCESSFUL REALIZATION OF NEW PRODUCT DEVELOPMENT PROJECTS IN THE IT INDUSTRY

Filip LIEBERT

Silesian University of Technology, Faculty of Organization and Management; filip.liebert@polsl.pl,
ORCID: 0000-0001-8700-2604

Abstract: Software development projects are the essential part of business activity of many IT companies. According to numerous studies and reports, approximately only one-third of IT projects turn out to be successful. Software development projects require unique approach in order to meet customer's requirements. This article provides an in-depth literature review on barriers to IT project launch and implementation. Also, the paper presents key findings of a research that was carried out to identify the most significant barriers to IT projects implementation.

Keywords: new product development, barriers to IT projects, project management.

1. Introduction

Adaptation to fluctuating conditions prevailing on the dynamically developing markets allows enterprises to build their competitive advantage. Companies are continuously searching for new information and communication technology (ICT) systems as a result of an increasing complexity of production systems and the general evolution of technologies on the market. Moreover, the information technology (IT) services market is undergoing a real renaissance due to the ongoing expansion of on-demand services and accelerating growth of sophisticated software solutions, often offered in the cloud. Services of the ICT sector are widely used in business practice. The number of IT projects, especially associated with software development, continues to grow with every year. Project management is currently one of the most essential solutions used by companies focused on new product development (Friis et al., 2014). Hybrid models, which consist of agile methods combined with traditional stage-gate new product development models, have been widely implemented by IT companies in order to accelerate development speed and reinforce product quality (Cooper, Sommer, 2016).

IT products can be defined as services and software solutions (computer programs, websites, systems or applications) that support various business activities of certain companies

or meet unique requirements of individual customers (Liebert, 2018). The growing demand for innovative IT services and software solutions among enterprises and individual customers is a prelude to Industry 4.0, where all production systems, management systems and IT systems are vertically and horizontally integrated, thereby increasing the manufacturing capacity of a certain business entity. Modern approaches, which are being used to launch and implement advanced IT products or services, have a multidimensional nature, namely:

- They are based on permanent and sustainable cooperation with the customer throughout the entire software development cycle (Alvertis et al., 2016).
- They initiate a desire to seek innovation (Reich et al., 2008).
- They strive to increase product's quality (Geraldi, et al., 2011).
- They create optimal conditions for knowledge sharing among development teams (Iden and Bygstad, 2017).
- They create value for both the customer and the company.

However, it turns out that the development of modern software requires a specialized (and often virtual) working environment, well-developed customer relations, appropriate resources, and properly adapted agile software development methods. Agile Project Management (APM) is considerably different in comparison to traditional project management (also known as Waterfall approach in IT industry), due to variable project scope and high flexibility (Palmquist M. S., 2013). Many IT projects tend to fail, exceed their budget, or are unable to meet their goals. Project Management Institute (PMI) emphasizes that there are an infinite number of reasons for project's failure. According to the PMI report from 2017, 37% of projects failed due to the lack of clearly defined project objectives and milestones. Chaos Standish Group Report 2018 shows that agile project success rates are two times higher than success rates of waterfall projects. However, it also states that over 50% of evaluated projects have failed to meet all requirements of project constraints — time, budget and scope. Therefore, there are many barriers to successful implementation of IT projects.

This article discusses the barriers hindering the implementation of software development projects in the IT industry. This paper consist of literature review which focuses on barriers to launch and implementation of IT projects, and a qualitative research which indicates that organizational culture, poor risk management and lack of proper communication are the main issues occurring in companies that run IT projects.

2. Characteristics of IT software development projects

Every project can be defined as a unique endeavor and purposeful activity that has limited resources, scope, and time. Project management is an effective approach commonly used to develop new products and implement changes in the company. Project's work-breakdown

structure and schedule enable companies to develop new solutions in organized stages, which allows them to take better control of every executed task (Trocki, 2013). There are many definitions of a project, namely:

- "A project is a time and cost constrained operation to realize a set of defined deliverables up to quality standards and requirements." (definition by the International Project Management Association)[1].

- "A project is a temporary endeavor undertaken to create a unique product, service, or result. A project is temporary in that it has a defined beginning and end in time, and therefore defined scope and resources. And a project is unique in that it is not a routine operation, but a specific set of operations designed to accomplish a singular goal." (definition by the Project Management Institute — Project Management Body of Knowledge)[2].

- "A project is a temporary organization that is created for the purpose of delivering one or more business products according to an agreed business case. Every project is unique." (definition by PRINCE2 Axelos)[3].

An IT project can be defined as temporary endeavor undertaken to develop or modernize a unique system or software solution, sometimes combined with ICT hardware. The main objective of such project is to implement all features and functions listed in the user's requirements (Liebert, 2017). Projects executed in the ICT sector are highly innovative. Frączkowski describes an IT project as a set of actions which have to be undertaken by developers to define unique architecture, interface, data, hardware, and software required to develop a unique system. Also, he emphasizes that there are many types of IT and ICT projects (Frączkowski, 2003), such as: software development projects, IT system implementation projects, network-related projects, and IT/ICT infrastructure development projects. Software development projects consist in developing software solutions like computer programs, websites, mobile applications or computer games. It should be noted that the scope of an IT project may include implementation of software and also activities associated with computer hardware, infrastructure, networking, or configuration of other types of devices. This article focuses on the barriers to IT software development project implementation.

Software development projects, which are mainly related to software engineering, are of a completely different nature than hardware projects. The main purpose of the latter is to create a tangible product that has a physical form (instead of intangible software). An important element that distinguishes a modern IT software project from a traditional project is the lack of a predetermined scope. Over the years, IT software development companies have moved from a linear waterfall approach to an agile software development approach. Projects that are

---

[1] IPMA Individual Competence Baseline®, ICB version 3, 2015.
[2] A Guide To The Project Management Body of Knowledge. Project Management Institute, Inc., 2013.
[3] AXELOS, PRINCE2 Agile® Guidance Preview, 2015.

being executed in waterfall methodology have a pre-defined scope from the beginning of the project (Szalvay, 2004). Nowadays, each IT project is adjusted to the dynamic requirements of the customer on an ongoing basis throughout the entire production cycle of a certain IT product. Collaboration with the end-user or customer in a project allows for an easier exchange of information between commissioner and the development team. This has a positive impact on the overall quality of the product. This type of approach is the well-known APM (Highsmith, 2005), which uses Adaptive Project Frameworks to enhance the workflow of the development team. Scrum method is one of the most popular frameworks used by agile IT companies (Schwaber, and Beedle, 2001). Agile projects use incremental product development techniques and production cycles, during which the main features of the software are being created and verified on a regular basis (Balaji, Sundararajan, 2012). Team coordinator (called the Scrum Master), development team, and the user of the product (known as the Product Owner), play the key roles in this approach. Product owner is usually a customer or an expert in the certain field (Leffingwell, 2011). Also, it is worth noting that IT companies use a lot of special tools to enhance the collaboration of development teams and provide additional support to project management activities. There are many different types of supportive software solutions, and some of the most popular are: JIRA, Slack, Skype, Wrike, GitHub, Microsoft Project, Trello, Zoho Project, GanttProject, and VMware (Davis, 2013).

The latest concepts that use the elements of agile approach are the so-called teal management (Blikle, 2017) and holacracy (Robertson, 2015). The latter is a method of decentralized management and organizational governance, in which team members have to fill a specific role in the organization, in accordance to their skills and abilities. In addition, all pieces of information are communicated in a transparent way, in an environment that encourages creativity and search for innovation. In other words, this approach is based on creating an optimal environment for self-organizing development teams. Instead of assigning people to specific positions, each member of the organization can play a variety of roles in order to support the company's key objectives. Moreover, every employee is empowered and has the authority to make important business decisions.

More and more companies are starting to use temporary collaboration networks (Bendkowski, 2017). This approach consists in developing new products during a few days period by establishing a temporary network in a virtual environment. Such a network consists of external experts with professional skills and experience in a certain field — several experts and professionals join forces to develop a specific product or service within a short amount of time. Ad-hoc teams of this type are often created dynamically when the project objective is not fully specified, but the basic assumptions of the final product are defined. The greatest advantage of this approach is the rapid execution of a certain order and the use of extensive knowledge provided by experts and contractors in a specified technical field. An additional

advantage is the optimization of costs in relation to the amount of work performed by a certain specialist.

There are many approaches used by companies to develop innovative IT products. Table 1 gives an overview of the most popular approaches and methods commonly used to develop new software in IT companies.

Table 1.
Characteristics of approaches and methods used in the development of a new IT product in the context of project management

Approach or method used to develop a new product	Is project management used?	Characteristics
Waterfall — traditional approach	**Yes** — Prince2, PMBoK PMI	Scope of the project is fixed. All tasks are planned in the beginning of the project. The triple constraints of the project are predetermined — there is very limited ability to apply changes during the implementation phase. It is difficult to implement changes. This approach is not very adaptable to dynamic customer requirements or a dynamic environment.
Agile — flexible approach	**Yes** — AgilePM methodology plus methods such as Scrum or Scrumban	Scope of the project is variable and may change, only the budget and timespan are predetermined. The project is divided into iterations (production cycles also known as increments). Product backlog is being used instead of plans and unnecessary documentation. The whole project and deliverables can be adjusted to meet the updated customer requirements. Every task is flexible.
Hybrid approach	**Yes** — combination of Prince2 or PMBoK at the initiation and planning phases of the project with Agile methods used during the implementation phase; there is also a Prince2 Agile variant	This approach applies waterfall methods and techniques in the project initiation and planning phases. However, Agile Project Management methods are being used in the execution phase of the project. The project is therefore optimally implemented in terms of preparation, documentation, and practice. It is a professional approach that quickly adapts to a certain situation, but requires the development of specific networks, rules, and internal structures within an organization.
Teal Organization — Holacracy	**Yes or no** — a product developed using a self-organizing team which may use project management methods and tools	This approach significantly reduces the overall top-down hierarchy in order to create an environment that encourages teamwork, collaboration, creativity, and self-organization. The project management approach is abandoned in favor of dynamic team management, in which everyone plays a specific role. Knowledge sharing plays a key role in this approach.
Virtual Ad-Hoc Temporary Collaboration Network	**No** — the product is developed virtually in a self-organized team	This is a dynamic, temporary, and swift solution which consists of solving a certain problem or issue as quickly and qualitatively as possible. It is highly adaptable to changes in the scope of the project — members of development team work in a virtual environment from different places around the world and additively develop a certain product with an intensive exchange of knowledge and experience.

3. Barriers to execution and implementation of IT software development projects

3.1. Key barriers to the launch and implementation of IT projects

There are many scientific papers and reports concerning the issue of barriers to launch and implementation of new software development projects. In this section of the paper, an overview of various scientific studies on the barriers to implementation of IT projects has been presented. Individual types of barriers were divided into internal and external barriers.

According to the Standish Group' Chaos Report 2015 on the current status and condition of IT projects, in which the size of the research sample (collected in a period of a few years) reached over 50,000 IT projects, many companies have decided to migrate from waterfall to agile development methods. Despite the fact that modern management solutions are becoming widely popular, they are not perfect yet. In general, only 39% of IT projects that used the agile method were fully successful, and in the case of traditional waterfall methods only 11% of projects concluded successfully[4].

According to the Standish Group, there are 10 key barriers to the implementation of IT projects:

1. Poor communication with product users or product owners.
2. Excessive delay in making key decisions about the project.
3. Poorly specified objectives.
4. Emotional immaturity of the project team and organization.
5. Incorrect optimization of the project scope and problems with setting priorities.
6. Inflexibility of project processes.
7. Excessive complexity of project activities.
8. Lack of specialized staff with key competences for the project.
9. Lack of focus on cooperation — an unfavorable organizational culture.
10. Lack of specialized tools and infrastructure.

Another international study with interesting results is the CollabNet VersionOne 13th State of Agile Report, in which the researchers mainly focused on the general condition and problems of agile software development methods.[5] VersionOne is a company offering a range of services and products in the field of agile software development methods. The corporation also conducts market research related to the use of APM by the IT industry. This report presents the survey results of 1,319 companies which described their experience with agile development methods. It should be noted that in 2018 and 2019, according to the report's annotations, the research was not only conducted on customers of VersionOne software (17% approximately), but it had a much wider range. According to the report, the greatest benefits of using agile team

---

[4] CHAOS Report. CHAOS Standish Group, 2015.
[5] VersionOne 13th Annual State of Agile Report. VersionOne & CollabNet, 2019.

management methods (or product development) are: the ability to manage changing priorities, accelerated production speed, and an increased productivity. Enhanced software quality and business alignment have also been emphasized. The report presents 11 key barriers to the implementation of agile methods in organizations, which can be considered as barriers to the implementation of IT projects:

– Organizational culture issues associated with the proper adaptation of agile values.
– General organizational resistance to change.
– Lack of support from top-management executives.
– Lack of skills/experience with agile methods.
– Inconsistent processes and practices across teams.
– Insufficient training and education.
– Lack of product owner support and availability.
– Pervasiveness of traditional development methods.
– Fragmented tooling and project-related data/measurement.
– Minimal collaboration and knowledge-sharing.
– Regulatory compliance or government issues.

Another study, conducted in Poland in 2015, also identified key barriers to the implementation of IT projects. According to this study, problems in understanding project's scope and improper management of project's schedule are the most significant barriers to implementation of IT projects. Also, a lack of formalized procedures and standards was highlighted — managers often tend to use intuitive management based on a simple action plan instead of tools recommended by professional project management methodologies (Kozarkiewicz, and Wójcik, 2015). The risk factors in IT projects are quite unique and diverse, so it is difficult to predict them and apply appropriate risk response (Bannerman, 2008). Most of the IT project risk factors are highly associated with the scope of the project and customer requirements (Wallace, et al., 2004). A study on the factors which impeded the successful implementation of ICT projects, that was conducted in Poland in 2014 on a sample of 90 IT companies, revealed the following key barriers (Jasińska, 2014) related to IT projects:

– Organizational structure and company procedures are not properly adapted to the implementation of IT projects.
– Lack of support from suppliers.
– Lack of support from customers.
– Negative impact of competition that may obstruct or delay project implementation.

The next stage of the above-mentioned research was the verification of problems directly related to organization and management at executive levels. The following issues have been identified:

– Problems associated with proper allocation of resources in the project.
– Issues related to adjustment of company processes to the project management system.

    – Problems associated with conducting a large number of pointless project meetings.

    – Poor communication among project team members and top management.

Strzelczyk and Skalik have defined the key success factors of an IT project (Strzelczyk and Skalik, 2013). Their scientific research is consistent and identical to the extensive reports of the Standish Group, which outline the wide scale of problems related to the implementation of IT projects. The scientific literature also points out that poor communication between the development team and the customer is a serious threat to a project (Woźniak, 2013). The customer may lack the required commitment, and is often unable to fully specify the scope or functionality of the product. Such issues may cause a drastic decrease in the quality of a product (Redlarski, and Basińska, 2013). Scientists emphasize that the problem of distorted knowledge flow in software development projects is significant (Kukko, 2013). There are many communication-related barriers that impede knowledge sharing activities between project participants and stakeholders. These barriers include such issues as:

    – Lack of trust.

    – Lack of time.

    – High individualism.

    – Lack of developed intra-organizational communities which may create a proper environment for collaboration.

The PARP report from 2017, concerning the development of the Polish ICT sector until 2025, identifies the following barriers to the development of ICT companies, and therefore to the implementation of IT projects[6]:

    – Low level of availability of skilled professionals and engineers on the market.

    – High amount of taxes and fees imposed by law.

    – Strong competition.

    – Limited financial resources.

More barriers have been identified by the European Information Technology Observatory (Wojnicka-Sycz, 2013). These barriers include, in particular, limited investments in research and development and unfavorable environment for modern high-tech activities.

3.2. Barriers to IT projects: A macro- and micro-level approach

Barriers to IT projects can be perceived from the perspective of macro and micro point of view. Macro scale relates to ICT projects and project activities that can be associated with a whole region or area. For example, according to the Innovation Development Strategy of the Silesian Voivodeship for the period of 2013-2020, one of the biggest challenges for SMEs (from the sector of intelligent specializations of Silesia region) is risk management in financing innovative activity. Each implementation, launch, or development of an IT system

---

[6] Report: Perspektywy Rozwoju Polskiej Branży ICT do roku 2025. INVESTIN, Ministerstwo Rozwoju, Polska Agencja Rozwoju Przedsiębiorczości, 2017.

is associated with high development costs and maintenance of both software and hardware. The aforementioned strategy points out how difficult it is to develop markets based on technologies of the future. Digitization and modern hardware make it possible to create complex systems that will allow enterprises to combine their knowledge and solutions into integrated IT networks. Modern products, technologies, and software developed by the ICT sector are usually made in collaboration with clusters and alliances, in which appropriate software components form new system solutions. One example is the initiative to create Smart Cities, as mentioned at the European Congress of Small and Medium-sized Enterprises in Katowice in 2017 (Jankowska, 2015). The Smart City concept consists in achieving sustainable urban and regional development by adapting to the needs of residents (with the use of innovative information technologies). The barriers to such complex projects or project portfolios include:

- Infrastructural deficiencies.
- Bureaucratic and legal problems associated with complex administration.
- Lack of adequate means to implement modern technologies on a mass scale.

The awareness of residents and entrepreneurs about the potential of this type of project (the social aspect) is also important. Residents may reject new IT solutions due to their lack of trust, or even due to resistance to change as many people prefer to use older solutions. An equally important aspect is the issue of licensing and law. Such legal regulations as the General Data Protection Regulation, may have a negative impact on many IT systems and their features. Therefore, the political and economic situation may also have an impact on the life cycle of major IT projects.

From the micro point of view, barriers refer directly to the internal structures of IT companies. Therefore, it is necessary to verify and identify what kind of barriers hinder or delay the implementation of IT projects in enterprises offering software-related services (according to the Polish list of business activity classification, PKD 62.01.Z). A number of serious internal problems has been observed during the implementation of new IT solutions in enterprises, such as (Moś, 2012):

- Problems in understanding dynamic requirements and specifications.
- Unclear goals of the project and utility values of the software.
- Lack of support from users of the system.
- Inaccurate analysis of user needs and poor selection of IT/ICT components.
- Lack of knowledge and skills required to run and operate new software.
- Employees' resistance to change.
- A lack of support from top executives.

During the InfoMEET 2017 IT industry conference (which took place in Katowice, Poland, in 2017), more than 300 IT specialists and experts of the IT industry had to answer a set of questions regarding the biggest problems and challenges associated with successful

implementation of IT projects[7]. It turned out that companies have serious problems in adapting to the principles of agile methods. Due to this issue, most projects are being delayed or become unsuccessful. Employees and top management executives are reluctant to use complex project management methodologies full of pre-imposed procedures and rules.

Some companies try to drastically change their organizational culture and use holacracy, where the traditional hierarchy of positions is abandoned (employees don't have any leader or superior), and each employee or team member fills a specific role in a self-organized development team. This approach is often combined with agile team management frameworks like Scrum. The latter is a framework for developing, delivering, and sustaining complex products that has many benefits in comparison to traditional waterfall approach, namely:

- Quicker release of useable product to customers.
- Higher quality and productivity.
- Lower costs.
- Greater ability to incorporate changes if they occur (due to the daily meetings and variable scope).

Companies also prefer to use so-called collaborative ad-hoc networks, where solutions or products are developed in just a few days through the use of a virtual environment and external experts, who can be considered as professionals in a certain industry. During the InfoMEET 2018 IT industry conference, more than 200 IT experts and programmers have confirmed that the organizational culture and properly scaled agile methods have the highest impact on the successful implementation of new software development projects[8].

Small enterprises quite often have a form of small-scale family businesses with just a few employees. Outdated approaches to product development are being used among those companies due to the high resistance to change. The lack of support from top management only discourages and delays the option of organizational restructuring in order to adapt to the latest technologies and trends that could significantly improve manufacturing processes. Also, the lack of appropriate knowledge and resources that would enable small companies to adapt to new standards is another serious problem. Virtual environments may be hard to implement due to the specific nature of virtual collaboration. Poor level of risk management is also an important issue in the case of very small companies. The latter often renounce detailed risk analysis and prefer to implement projects by using the intuitive 'ad-hoc' mode.

Barriers to implementation of IT projects are related to the organizational, technological, social, and economic layers. Key barriers associated with the successful implementation of IT projects have been presented in Figure 1. The macro barriers have been defined as a set of external barriers, while the micro barriers have been defined as internal barriers occurring within the internal structures of a company.

---

[7] InfoMEET Conference. Katowice, 2017.
[8] InfoMEET Conference. Katowice, 2018.
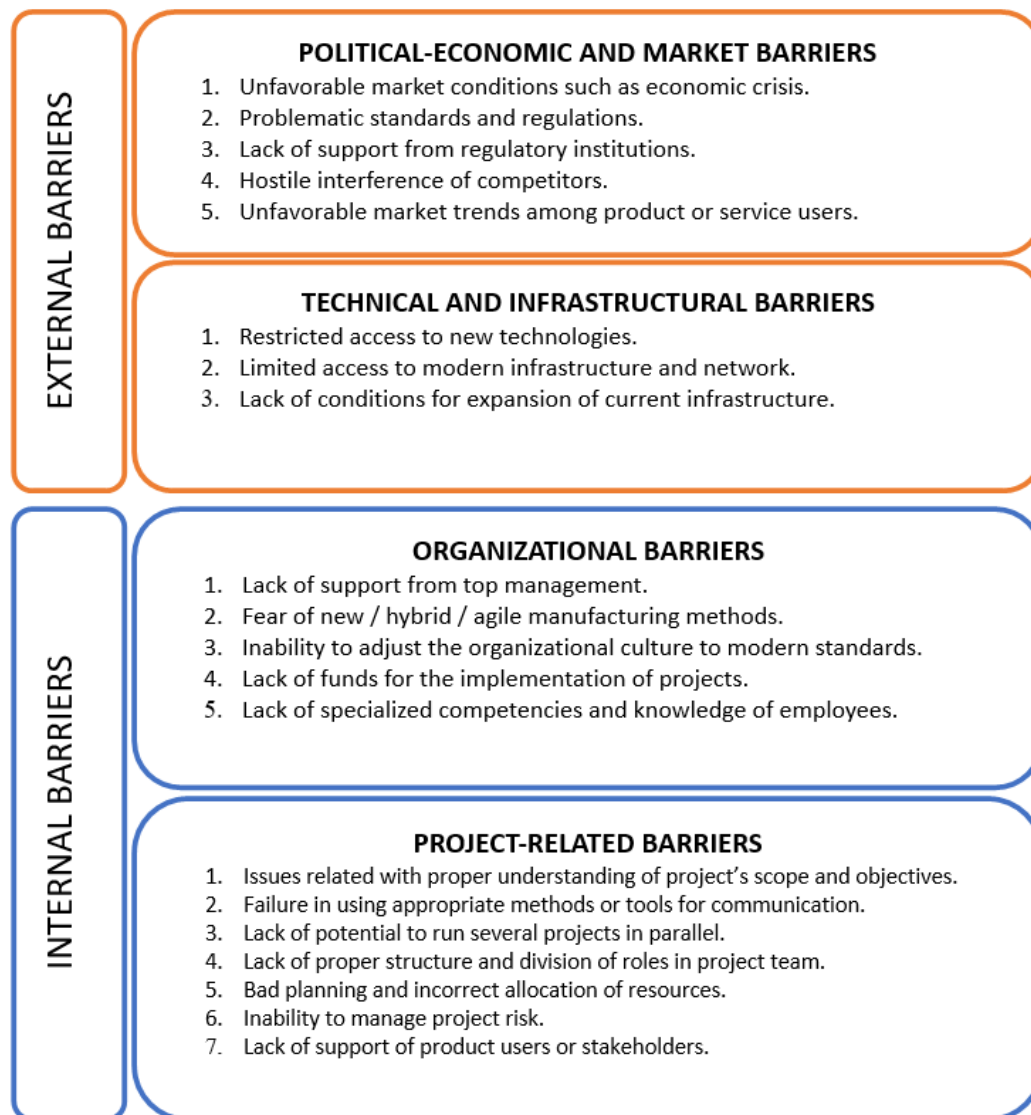
Figure 1. Key barriers to IT project launch and implementation, divided into external (macro) and internal (micro) barriers.

4. Results of qualitative research on barriers to the implementation of IT projects

The main objective of this qualitative study was to identify and verify the barriers hindering the implementation of new software development projects in Polish IT companies. The research was conducted in the period of December 2018 to March 2019 on a group of 71 representatives of SMEs with at least 3 years of experience in the IT industry and expert knowledge in the field of software product development. A research tool in form of a questionnaire has been used to obtain the results. The survey consisted of qualitative and quantitative questions, in which

the respondents had to select key barriers that impede the implementation of software development projects. The answers to qualitative questions have been described below.

- **Is organizational culture a key factor hindering the implementation of software development projects and how can companies overcome this type of barriers?**

Almost all of the respondents (90%) pointed out that organizational culture is one of the main sources of problems in today's software development environments. These issues may derive from the unique and specific nature of every organizational culture. Every company uses its own set of habits, customs, rules and principles. There are many important aspects and factors that may have a huge impact on development teams. Experts indicate that team building should consist of internal training, team integration, and establishment of clear and understandable rules. Transparency, swift communication and an appropriate style of team management are essential values required for building agile teams. In the case of organizational culture, even the language used by team members may have an impact on their ability to understand various tasks. Employees that work in IT industry often tend to use different types of jargon to describe certain parts of the developed product or project elements. Therefore, every company should provide a guidebook with primary rules and objectives that explain all details related to team building and collaboration. This also applies to the definition of done. The best solution that may be used to overcome these barriers is coaching. Every coach (senior team developer) may not only train new team members but also support team integration.

- **Can agile methods, hybrid models, holacracy, or collaborative ad-hoc networks ensure proper prevention of many issues occurring in the IT projects? Can these modern approaches be used as a solution to the most common barriers to software development (in relation to the results of the Standish Group's CHAOS Report and the State of Agile — VersionOne Report)?**

More than half of the experts (62%) indicated that new approaches are much better than traditional waterfall methods. Agile frameworks are regarded as best solution to run software development projects. Furthermore, agile project management seems to be most popular among modern software development companies, because it has an impressive set of useful features like adaptive planning, incremental development or early delivery. Also, it encourages rapid and flexible response to change. Most of the respondents (62%) agree that modern approaches can help companies reduce barriers or even overcome them, especially in the case of poor communication and issues associated with proper understanding of project's objectives. However, latest methods and solutions, like holacracy, require sophisticated resources, in particular, expert knowledge and a technologically advanced working environments. Such environments require expensive assets in form of software solutions and hardware that may provide support in the areas of project management and team collaboration. In other words, the software development model should be adapted to the resources which are currently available in the company.

The key research results have been presented in Figure 2. Respondents had to answer the following question — *What are the key barriers to IT project implementation in small and medium-sized enterprises?*. The respondents had to select 3 out of 12 key barriers to the implementation of software development projects. Twelve key barriers hindering the implementation of new IT product development projects were selected in accordance to the literature review conducted in the previous subsections of this paper. The most critical barriers to IT project implementation (the most common responses), that were indicated by IT experts, have been listed below:

- Problems and issues associated with organizational culture (20%).
- The inability to properly manage risk in an IT project (15%).
- Lack of knowledge of development team members (11%).
- Fear of agile software development and agile methods like Scrum (10%).
- Lack of customer support and issues associated with collaboration (10%).
- Problems associated with proper communication (9%).
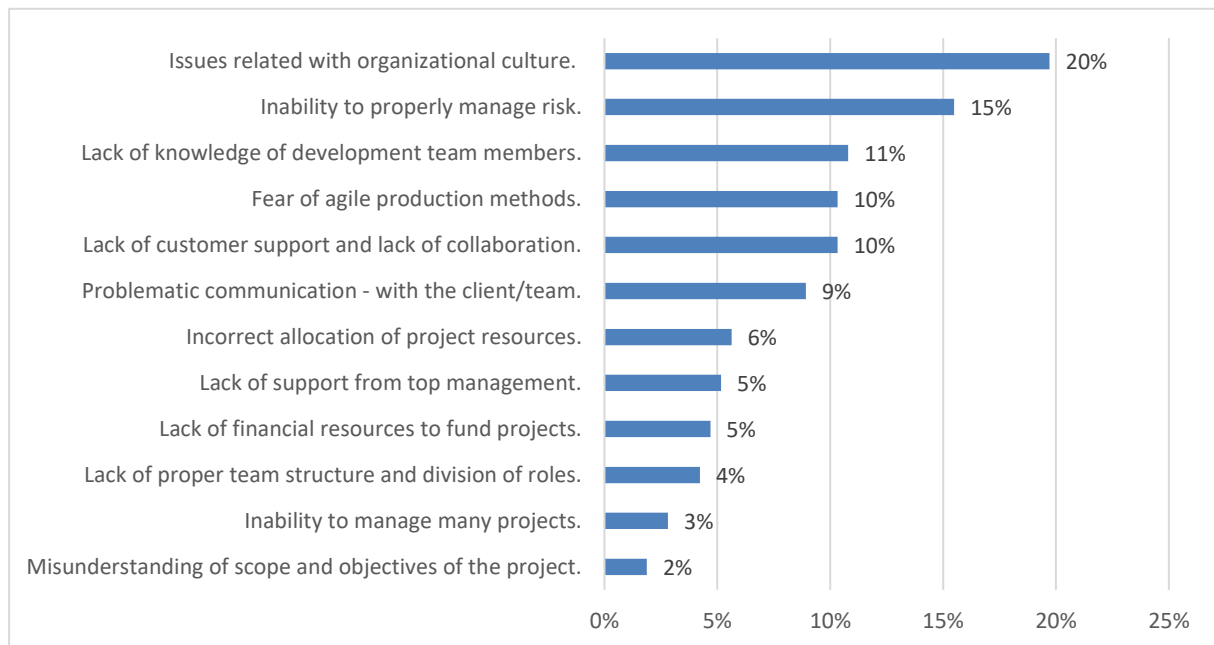
Figure 2. Key barriers to IT project implementation according to the IT experts of SMEs, ranked in order of the most frequent responses.

5. Conclusion

Information technology projects associated with software development deliver real value to customers, thereby allowing business entities to strengthen their position on the market. There are dozens of technical, organizational, social, political, and economic barriers that may have a negative impact on the progress of an IT project. Companies may reduce these barriers

by taking appropriate precautions and implementing organizational changes. Enterprises should use a variety of supportive tools, like project management software solutions, in order to make IT projects more successful. Also, a proper software development method has to be selected — agile software development is slowly becoming a common standard in most IT companies. Enterprises should search for optimal methods of team management, which must be adjusted to the organizational conditions of a certain company. Organizational culture has to be properly managed and configured — it should be understandable to all employees and stakeholders. To overcome the barriers to IT project implementation, the company should verify whether it meets a number of important criteria, which are the key success factors of IT projects. According to the Chaos REPORT 2015 by the Standish Group, the key success factors of an IT project include the following items[9]:

  – Top management support.
  – Emotional maturity (in the context of organizational culture).
  – User involvement.
  – Optimization and specialized resources.

The research results presented in this article indicate that a properly adjusted organizational culture is a key factor that may reduce barriers to IT project implementation. A well-developed organizational culture can provide favorable conditions for the creation of self-organized development teams. Another important aspect is the optimal use of agile team management methods. Companies should develop appropriate procedures, habits, and standards required by agile frameworks in order to enhance the workflow and knowledge sharing among project team members. Proper risk analysis and comprehensive risk management plan will help IT company identify and manage potential problems that could undermine a project. Also, every company has to skillfully manage its resources and provide sophisticated assets in form of software and hardware that can be used to establish a virtual working environment.

There are many barriers to the implementation of NPD projects in the IT industry. This is mainly caused by the uniqueness and complexity of IT projects. The literature review presented in this paper and key findings of the empirical research can only provide a minor overview of this dynamic issue. Therefore, more research should be conducted to explore this issue further.

References

1. Alvertis, I., et. al. (2016). User Involvement in Software Development Processes. Elsevier. *Procedia Computer Science, 97.*

---

[9] CHAOS Report. CHAOS Standish Group 2015.

2. AXELOS, PRINCE2 Agile® Guidance Preview, 2015.

3. Balaji, S., and Sundararajan, M. (2012). WATEERFALL Vs V-MODEL Vs AGILE: A COMPARATIVE STUDYON SDLC. *International Journal of Information Technology and Business Management, 2, 1*, JITBM & ARF.

4. Bannerman, L.P. (2008). Risk and risk management in software projects: A reassessment. Elsevier. *Journal of Systems and Software, 81*.

5. Bendkowski, J. (2017). Zarządzanie procesami rozwoju tymczasowych sieci współpracy. *Zeszyty Naukowe Politechniki Śląskiej. Seria Organizacja i Zarządzanie, 108*. Gliwice: Politechnika Śląska.

6. Blikle, A.J. (2017). *Doktryna Jakości. Wydanie II Turkusowe. Rzecz o turkusowej samoorganizacji*. Gliwice: Helion.

7. CHAOS Report. CHAOS Standish Group, 2015.

8. Cooper, R., Sommer, A. (2016). The Agile–Stage-Gate Hybrid Model: A Promising New Approach and a New Research Opportunity. Journal of Product Innov. Management. 33.

9. Davis, B. (2013). *Agile Practices for Waterfall Projects — Shifting Processes for Competitive Advantage*. USA: J. Ross Publishing.

10. Frączkowski, K. (2003). *Zarządzanie Projektem Informatycznym*. Wrocław: Oficyna Wydawnicza Politechniki Wrocławskiej.

11. Friis, A., Dukovska-Popovska, I., and Steger-Jensen, K. (2014). Barriers towards integrated product development — Challenges from a holistic project management perspective. Elsevier. *International Journal of Project Management, 32*.

12. Geraldi, J.G., Kutsch, E., and Turner, N. (2011). Towards a conceptualisation of quality in information technology projects. Elsevier. *International Journal of Project Management, 29*.

13. Highsmith, J. (2005). *APM: Agile Project Management. Jak tworzyć innowacyjne produkty*. Warszawa: Mikom.

14. Iden, J., and Bygstad, B. (2017). The social interaction of developers and IT operations staff in software development projects. *International Journal of Project Management*.

15. InfoMEET Conference. Katowice, 2017.

16. InfoMEET Conference. Katowice, 2018.

17. IPMA Individual Competence Baseline®, ICB version 3, 2015.

18. Jankowska, M. (2015). Smart City jako koncepcja zrównoważonego rozwoju miasta — przykład Wiednia. *Studia i prace Wydziału Nauk Ekonomicznych i Zarządzania, 42, 2*. Szczecin.

19. Jasińska, K. (2014). Ograniczenia realizacji projektów w sektorze ICT. *Organizacja i Kierowanie, 3*. Warszawa.

20. Kozarkiewicz, A., and Wójcik, P. (2015). Czynniki sukcesu i bariery współpracy międzyorganizacyjnej w realizacji projektów wytwarzania oprogramowania. *Zeszyty Naukowe, 225*. Katowice: Uniwersytet Ekonomiczny.

21. Kukko, M. (2013). Knowledge sharing barriers in organic growth: A case study from a software company. Elsevier. *Journal of High Technology Management Research, 24.*

22. Leffingwell, D. (2011). *Agile software requirements: lean requirements practices for teams, programs, and the enterprise.* Addison-Wesley, Pearson Education.

23. Liebert, F. (2017). Zarządzanie projektami w przedsiębiorstwach branży IT — studium literaturowe. *Zeszyty Naukowe Politechniki Śląskiej — Seria Organizacja i Zarządzanie, 101.* Gliwice: Politechnika Śląska.

24. Liebert, F. (2018). Atrybuty innowacyjnego produktu informatycznego w postaci oprogramowania. *Zeszyty Naukowe Politechniki Śląskiej — Seria Organizacja i Zarządzanie, 118.* Gliwice: Politechnika Śląska.

25. Moś, M. (2012). Analiza przedwdrożeniowa a realizacja projektów IT. *Zarządzanie i Finanse, 10, 1.* Gdańsk: Uniwersytet Gdański.

26. Palmquist S. M. (2013). Parallel Worlds: Agile and Waterfall Differences and Similarities. Software Engineering Institute. Carnegie Mellon University.

27. PMI (2013). *A Guide To The Project Management Body of Knowledge.* Project Management Institute.

28. Redlarski, K., and Basińska, B. (2013). Wpływ udziału użytkownika na jakość użytkową w projektach informatycznych. *Zarządzanie i Finanse, 11, 1.* Uniwersytet Gdański.

29. Reich, B.H., Sauer, Ch., and Wee, Y.S. (2008). Innovative Practices for IT Projects. Taylor & Francis Online. *Journal of Information Systems Management, 25.*

30. Report: Perspektywy Rozwoju Polskiej Branży ICT do roku 2025. INVESTIN, Ministerstwo Rozwoju, Polska Agencja Rozwoju Przedsiębiorczości, 2017.

31. Robertson, B.J. (2015). *Holacracy. The New Management System That Redefines Management.* New York: Henry Holt and Company.

32. Schwaber, K., and Beedle, M. (2001). *Agile Software Development with Scrum.* USA: Pearson.

33. Strzelczyk, A., and Skalik, J. (2013). Kluczowe czynniki sukcesu w zarządzaniu projektami informatycznymi. *Zarządzanie i Finanse, 4, 1.* Gdańsk: Uniwersytet Gdański, Wydział Zarządzania.

34. Szalvay, V. (2004). *An Introduction to Agile Software Development.* Danube Technologies.

35. Trocki, M. (2013). *Nowoczesne zarządzanie projektami.* Warszawa: PWE.

36. VersionOne 13th Annual State of Agile Report. VersionOne & CollabNet, 2019.

37. Wallace, L., Keil, M., and Rai, A. (2004). Understanding software project risk: a cluster analysis. Elsevier. *Information & Management, 42.*

38. Wojnicka-Sycz, E. (2013). Narzędzia ICT wspierające proces innowacyjny. *Zarządzanie i Finanse, 4, 1.* Gdańsk.

39. Woźniak, M. (2013). Problematyka powodzenia przedsięwzięć IT w organizacjach — rola i miejsce klienta. *Studia i Prace Kolegium Zarządzania i Finansów, 125.* Warszawa: Szkoła Główna Handlowa.

CORPORATE REPUTATION AND ASSESSMENT OF COMPANIES BY THE CAPITAL MARKET: EVIDENCE FROM THE POLISH BANKING SECTOR

Tomasz L. NAWROCKI[1*], Danuta SZWAJCA[2]

[1*] Silesian University of Technology, Faculty of Organization and Management, Institute of Economics and Informatics, Zabrze, Poland; tomasz.nawrocki@polsl.pl, ORCID: 0000-0002-2120-3494
[2] Silesian University of Technology, Faculty of Organization and Management, Institute of Economics and Informatics, Zabrze, Poland; danuta.szwajca@polsl.pl, ORCID: 0000-0002-6517-6758
* Correspondence author

Abstract: The importance of reputation in achieving a competitive advantage and creating a company's value is noticed by both theorists and practitioners of management. However, the relationship between the level of corporate reputation and a company's investment characteristics, which determine their investment attractiveness, still has not been systematically and comprehensively verified. The variety of previously used methods for assessing and measuring corporate reputation means that the results are not quite reliable and cannot be used for intra-sectoral, cross-sectoral and over time comparisons and makes it difficult — or even impossible — to examine the relevant relationship between reputation and market value or the investment risk of different entities. Therefore, the main purpose of the paper is to attempt to determine the relationship between the assessment of companies by the capital market — based on price multipliers — and their reputation, obtained using an original method, based on information reported by companies and the methodology of fuzzy sets. The research is preliminary in nature and was performed on the Polish banking companies listed on the Warsaw Stock Exchange in the period of 2007-2018.

Keywords: corporate reputation assessment, correlation analysis, stock market indicators.

1. Introduction

Reputation is considered one of a company's most valuable resources in the current era of the knowledge-based economy. Reputation as an intangible strategic resource — valuable, rare, and difficult to imitate — can be a source of long-term strategic advantage (Barney, 1991; Davies, et al., 2003), and as a component of intellectual capital, it is classified as a market asset that builds enterprise value (Dowling, 2006). Although the valuation of reputation is still an open and difficult accountancy challenge, it is estimated that it can represent between 20% and

90% of a firm's value, depending on the industry and measurement method (Black, et al., 2000; Dube, 2009; Burke, et al., 2011; Adamska, and Dąbrowski, 2017).

The studies conducted over many years have revealed a positive relationship between reputation and the company's economic and financial results in most cases (Roberts and Dowling, 2002; Sabate, and Puente, 2003; Choi, and Wang, 2009; Love, and Kraatz, 2009; Vig, et al., 2017). The research on the relationship between reputation and the market ratios of listed companies or their market value is less clear (Dowling, 2006; Smith et al. 2010; Cole, 2012). One of the important dilemmas regarding the reliability of results and the possibility of making cross-sectoral or over time comparisons is the issue of measuring and quantifying reputation. So far, many concepts and methods for measuring reputation have been developed (Helm, 2005), but a single generally accepted methodology has not been developed. The one most often used is Fortune's Most Admired Companies (Flanagan, et al., 2011), although it is criticized for its extensive structure, the need for specialist knowledge, the strong correlation between the attributes studied, and too much impact of financial criteria on final results (Brown, and Perry, 1994; Fryxell, and Wang, 1994; Lewellyn, 2002).

The main purpose of the paper is to determine the relationship between the assessment of companies by the capital market, based on price multipliers, and their reputation. To assess this relationship and its significance, Pearson's correlation coefficient, the coefficient of determination (R^2), and p-value tests were used. To measure corporate reputation, an original method was used, based on information reported by companies and the methodology of fuzzy sets (Nawrocki, and Szwajca, 2017). The research was performed on the Polish bank companies listed on the Warsaw Stock Exchange in the period of 2007-2018.

2. Literature review

Reputation affects a company's economic and financial results because it plays an important role in the decision-making processes of key groups of its stakeholders. The research conducted in this area has shown a significant impact of the company's reputation on the decisions of stakeholder groups such as clients, employees, or business partners (Puncheva, 2008; Wagner, et al., 2011). The key groups of stakeholders of joint-stock companies include investors who, as capital donors, determine their development opportunities. If investors are convinced that the reputation reveals relevant information about the profit, risk level, and development potential of a company, then the "reputation of [the] company will be influenced by the competition" (Chajet, 1997, p. 20). Although these issues have been the subject of interest to investor relations managers for many decades, the research carried out so far has not provided clear results as to the impact of reputation on the assessment of companies in the financial market and investors' decisions.

The majority of the research conducted in the 1980s and 1990s found that companies with the best reputation ratios are able to achieve above-average rates of return in the long run (Antunovich, and Laster, 1999; Roberts, and Dowling, 2002). Fombrun (1996) and Deephouse (1997) note that companies with a better reputation are assigned higher positions in the financial market rankings. The opinions of specialists from the financial market are also formulated on the basis of the company's reputation rating (Return on Reputation, 2006).

However, the practice shows that safe shares and high future profits are not only guaranteed by companies with high reputation rates. As Shefrin (2001) notes, "investors err if they expect safe stocks and high future earnings only from highly reputed companies". In turn, other authors (deBondt, 1998; Goldberg and von Nitzsch, 2001) have noted that a company's reputation and the price of its shares are not necessarily correlated. Blajer-Gołębiewska and Kozłowski (2016), in their research on companies listed on the FEZ showed a lack of strong, short-term relationships between the company's reputation and selected financial variables: profitability, financial stability, and risk.

Another group of studies suggests a significant impact of reputation on investor decisions. It has been shown that investors perceive companies with a good reputation as less risky than companies with comparable financial results but a worse reputation (Shefrin, and Statman, 1995; Srivastava, et al., 1997) and are ready to pay more for shares of more reputable companies (Larsen, 2002). Brown (1998) and Jones et al. (2000) note that investors treat reputation as a reservoir of trust in the company and a form of collateral in the event of unpredictable events that could adversely affect the company's profits and the price of its shares. The analyses carried out have shown that decreases in share prices and the market value of companies during economic downturns are significantly lower in the case of companies with a good reputation. Pfarrer et al. (2010) found in their research that both companies with a good reputation and well-known celebrities gain bigger market prizes for positive surprises and smaller market penalties for negative surprises than other companies.

Reputation also affects the level of satisfaction and loyalty, especially of individual shareholders towards the company, and becomes an important criterion for their investment decisions (Helm, 2007; Pfarrer, et al., 2010). In recent years, reputation — and especially the aspects of corporate social responsibility — are gaining more and more recognition in the eyes of various stakeholder groups, including investors. This applies to both individual and institutional investors (including investment funds), who begin to see the benefits of investing in the activities of enterprises that respect ethical standards and the rules of social coexistence. These benefits can be felt by both society and the company in the form of better financial results (Neville, et al., 2005; Pradhan, 2016; Rodriguez-Fernandez, 2016).

3. Research methodology

Based on a community interview among stock market investors on the Polish capital market and by analyzing the expectations of investors which were presented by Lev (2013), three main aspects which are relevant from the viewpoint of capital market participants were taken into account for the needs of corporate reputation evaluation: informational, financial, and development aspects, as well as social ones.

The general structure of the proposed corporate reputation assessment model, consistent with the approach proposed above and with earlier studies by other authors (Nawrocki, and Szwajca, 2017), is shown in Figure 1.
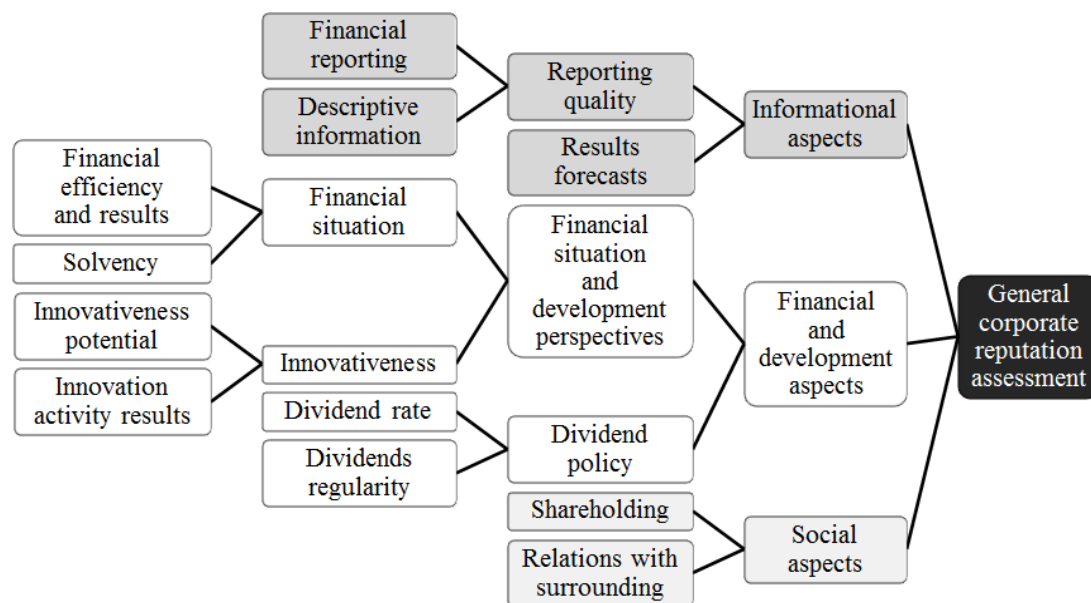

Figure 1. General structure of corporate reputation assessment model (stock market investors' view).

The calculation apparatus in the suggested solution is based on the fuzzy set theory (Zadeh, 1965; Piegat, 2001), which involved developing a fuzzy model. The Mamdani approach was used in its construction (Figure 2) (Mamdani, and Assilian, 1975). There were also some assumptions made regarding individual stages of the fuzzy model construction process (Nawrocki, and Szwajca, 2018):

- For all input variables of the model, the same dictionary of linguistic values was used, and their value space was divided into three fuzzy sets, named {low, medium, high}.
- For output variables of the model, in order to obtain more accurate intermediate assessments, the space of linguistic values was divided into five fuzzy sets, named {low, mid-low, medium, mid-high, high}.
- In the case of all membership functions to particular fuzzy sets, a triangular shape was decided for them.

- The values of the fuzzy sets' characteristic points (x_1, x_2, x_3) for the particular input variables of the model were determined partly based on the literature on companies' financial analysis and partly arbitrarily, based on the distribution of the values of analyzed variables and on the author's experience within the considered field.

- The fuzzification of input variables was carried out with the use of the simple linear interpolation method.

- Fuzzy reasoning in the particular knowledge bases of the model was conducted using the operators *PROD* (fuzzy implication) and *SUM*.

- For defuzzification of fuzzy reasoning results within particular rule bases, the simplified *Canter of Sums* method was used.
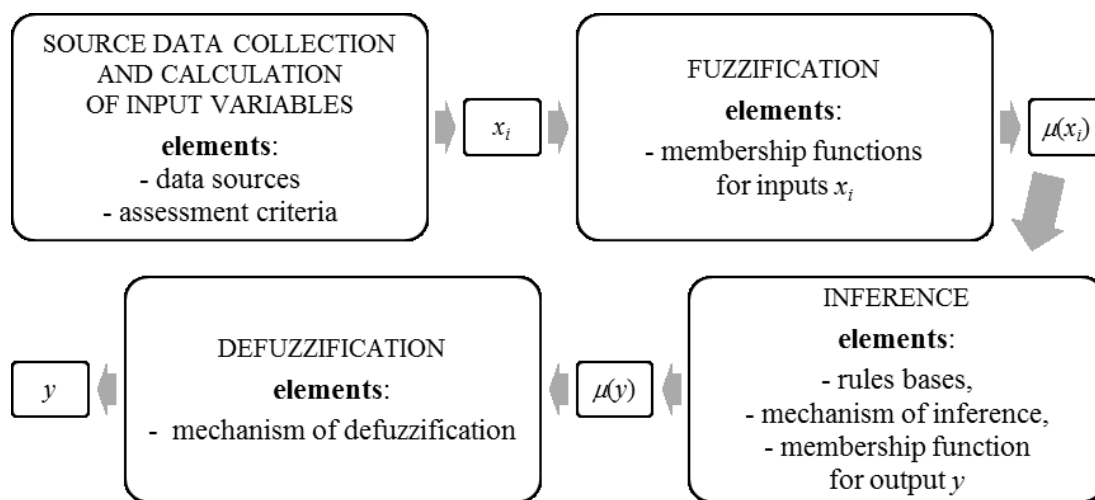
Figure 2. Construction process scheme of corporate potential innovativeness assessment fuzzy model. Source: own work based on Piegat A., *Fuzzy Modeling and Control*, Berlin Heidelberg 2001: Springer-Verlag.

Next, taking into consideration the general structure of the corporate potential innovativeness assessment model presented in Figure 1 and the author's experience in the issue being analyzed, nine rules bases were created in the form of "IF – THEN" statements (eight bases with nine rules and one base with twenty-seven rules); in this way, a "ready-to-use" form of fuzzy model was created. The intermediate and final assessments generated by the model take values in the range of 0-1, where from the viewpoint of the analyzed issue, values closer to 1 mean a very favorable result (better corporate reputation), while values closer to 0 indicate a less favorable result (worse corporate reputation).

It should also be noted that among many assumptions resulting from the characteristics of the applied methodology, one assumption taken into account refers to the long-term nature of corporate reputation: all of the assessment criteria used in the model were calculated or described over a 5-year period in order to consider a probable period of growth and economic downturn. Taking into account the timeframe of the research (2007-2018), seven readings of reputation are produced for the entities being studied.

With reference to the second variable in the dependency analysis — a market assessment of the studied entities — two basic price multipliers for the stock market were adopted: the price-to-book-value ratio (P/BV) and the price-to-earnings ratio (P/E). In order to preserve the comparability of both variables, the price multipliers used in the research were a median of monthly readings from 5 years (the arithmetic mean generated false results, due to the large spread of the readings).

The analysis of the relationship between the reputation of companies and their assessment by the capital market was performed based on Pearson's correlation coefficient (Pcc) and the coefficient of determination ($R2$) with a p-value test at the level of 0.05 to measure the significance of the results obtained.

4. Research results

The dependency analysis between corporate reputation and market assessment was conducted for eight banks listed on the Warsaw Stock Exchange with at least 11 years' history of public reporting and listing: BOŚ Bank – BOS, Bank Zachodni WBK – BZW, Citi Bank Handlowy – BHW, ING Bank Śląski – ING, mBANK – MBK, Bank Millennium – MIL, Bank PEKAO – PEO, and Bank PKOBP – PKO.

According to the adopted methodology, the basis for the corporate reputation assessment of the above-mentioned banks were data acquired from their annual reports published between 2008 and 2018. Therefore, for each of the banks reputation assessments were received for seven consecutive periods, ending in 2011, 2012, 2013, 2014, 2015, 2016, and 2017 (Nawrocki, and Szwajca, 2018).

On the other hand, data regarding the price multipliers P/BV and P/E for the banks under study were obtained from the website, www.stooq.com.

The relationship between corporate reputation and the market assessment of these banks was calculated separately for P/BV and P/E in two dimensions:
- individually for each bank, and
- generally, for all banks (the general homogeneity of the banks was assumed in terms of the banking industry).

In the first case, calculations were made based on seven pairs of variables; in the second one, they were based on 56 (eight bank companies times seven pairs of variables). In the area of reputation, the dependency analysis was performed for general reputation assessment as well as for its main components/aspects: informational, financial and development, and finally, social. The results are presented in Table 1. Significant results (with a p-value of ≤ 0.05) are distinguished by bold font.

Table 1.
Results of dependency analysis for the selected banks listed on the WSE

		P/BV				P/E			
		General Reputation Assessment	Informational Aspects	Financial and Development Aspects	Social Aspects	General Reputation Assessment	Informational Aspects	Financial and Development Aspects	Social Aspects
BOS	Pcc	**-0.969**	**0.770**	**0.771**	**-0.984**	-0.491	**0.937**	0.340	-0.590
	R^2	**0.938**	**0.592**	**0.595**	**0.968**	0.241	**0.879**	0.116	0.348
	p-value	**0.000**	**0.043**	**0.042**	**0.000**	0.263	**0.002**	0.456	0.163
BZW	Pcc	-0.564	-0.563	0.528	**-0.842**	**0.836**	**0.917**	-0.319	**0.816**
	R^2	0.318	0.317	0.279	**0.709**	**0.698**	**0.842**	0.101	**0.665**
	p-value	0.187	0.188	0.223	**0.017**	**0.019**	**0.004**	0.486	**0.025**
BHW	Pcc	0.678	**-0.904**	0.548	**0.914**	0.318	**-0.898**	0.166	0.635
	R^2	0.460	**0.816**	0.300	**0.835**	0.101	**0.806**	0.028	0.403
	p-value	0.094	**0.005**	0.203	**0.004**	0.487	**0.006**	0.722	0.126
ING	Pcc	0.553	-0.557	0.576	0.425	0.734	**-0.915**	**0.809**	**0.786**
	R^2	0.306	0.310	0.332	0.181	0.539	**0.837**	**0.654**	**0.618**
	p-value	0.198	0.194	0.176	0.342	0.060	**0.004**	**0.028**	**0.035**
MBK	Pcc	-0.412	0.433	-0.210	-0.562	-0.349	0.269	-0.178	-0.315
	R^2	0.170	0.188	0.044	0.316	0.122	0.072	0.032	0.099
	p-value	0.358	0.332	0.651	0.189	0.443	0.560	0.703	0.491
MIL	Pcc	0.133	0.261	0.176	-0.442	0.676	0.113	0.710	0.113
	R^2	0.018	0.068	0.031	0.195	0.457	0.013	0.504	0.013
	p-value	0.776	0.572	0.706	0.321	0.096	0.809	0.074	0.809
PEO	Pcc	-0.475	-0.467	-0.497	-0.341	0.600	-0.006	0.550	**0.793**
	R^2	0.225	0.218	0.247	0.116	0.359	0.000	0.302	**0.629**
	p-value	0.281	0.290	0.257	0.454	0.154	0.990	0.201	**0.033**
PKO	Pcc	**0.765**	**-0.914**	**0.934**	**-0.961**	-0.649	0.294	-0.559	0.530
	R^2	**0.585**	**0.835**	**0.872**	**0.923**	0.422	0.086	0.313	0.281
	p-value	**0.045**	**0.004**	**0.002**	**0.001**	0.115	0.522	0.192	0.221
All	Pcc	0.532	0.267	0.545	-0.082	**-0.442**	**-0.385**	**-0.493**	0.210
	R^2	**0.283**	**0.071**	**0.297**	0.007	**0.196**	**0.148**	**0.243**	0.044
	p-value	**0.000**	**0.047**	**0.000**	0.548	**0.001**	**0.003**	**0.000**	0.120

The results are characterized by a significant degree of ambiguity, including both the value of the correlation coefficient and the direction of the investigated dependence. Moreover, only slightly over 1/3 of them can be considered statistically significant at a p-value of 0.05 (due to the larger research sample, this mainly concerns the analysis of dependence for all analyzed banks, All).

In the case of the first — individual — dimension of the research, in the course of different variants of the variable pairs considered (reputation–market assessment), a very large range of values was obtained, including strong positive to strong negative correlations, which makes it impossible to draw valid conclusions.

In turn, in relation to the second — more general — dimension of the study (all banks as a relatively homogeneous sector) it may be only a partial (related to selected pairs of variables), moderate, and statistically significant correlation stated, but with a low coefficient of determination (R^2) and different directions of correlation, depending on whether the multiplier P/BV (positive relationship) or P/E (negative relationship) will be accepted as a measure of the market assessment.

5. Conclusions and discussion

As mentioned at the beginning, the research should be considered preliminary, mainly due to the relatively short time series of data and the limitation to one sector. In addition, the proprietary method based on the fuzzy set theory was used to measure reputation, which makes it difficult to conclude based on the results obtained in relation to the results of research conducted by other authors in this field.

The results of this pilot study (mainly for individual banks) indicate that the correlation between the reputation of businesses and their assessment by the capital market is not as unambiguous as the theoretical premises indicate, or as research published by Fortune magazine suggests. It is not only about the value of correlation coefficients, but above all about their direction, which often indicated a negative relationship. What's more, this applies to both individual entities and their various dimensions of reputation. The findings confirm the opinions of such authors as Shefrin (2001), deBondt (1998), and Goldberg and von Nitzsch (2001), who state that a company's good reputation does not guarantee it good stock quotes and high future profits. In practice, it happens that companies with relatively low reputation ratios or those belonging to industries that are negatively perceived (e.g., oil companies, chemical corporations, or tobacco companies) can achieve better results on the capital market if they are considered financially attractive by investors (Helm, 2007). In addition, as noted by Blajer-Gołębiewska and Kozłowski (2016) in relation to companies listed on the WSE, in the short term it is difficult to observe strong positive relationships between their reputation and the level of risk or profitability.

In summary, it should be said that perhaps broader research, both in terms of subject (intersectoral) and time, would produce more reliable results and show clearer relationships and tendencies. Reputation is a very valuable, but specific resource that is built over many years, and its effects (especially positive ones) are revealed in the long run. This study, therefore, can be treated as a contribution and inspiration to undertake broader and more in-depth analyses in this thematic area.

Acknowledgements

References

1. Adamska, A., Dąbrowski. T.J. (2017). Reputation and its measurement. An institutional approach, *Annales. Etyka w Życiu Gospodarczym*, *20(7),* 51-61.
2. Antunovich, P., Laster, D.R. (1999). Do Investors Mistake a Good Companies for a Good Investments? *Federal Reserve Bank of New York, Staff Report, 60.*
3. Barney, J. (1991). Firm resources and sustainable competitive advantage. *Journal of Management*, *17,* 99-120.
4. Black, E.L., Carnes, T.A., Richardson, V.J. (2000). The Market Valuation of Corporate Reputation. *Corporate Reputation Review*, *3(1),* 31-42.
5. Blajer-Gołębiewska, A., Kozłowski, A. (2016). Financial determinants of corporate reputation: *A short-term approach. Managerial Economics*, *17(2),* 179-201.
6. Brown, B. (1998). Do stock market investors reward companies with reputations for social performance? *Corporate Reputation Review, 1(3),* 271-280.
7. Brown, B., Perry, S. (1994). Removing the financial performance halo from Fortune's "most admired" companies. *Academy of Management Journal, 37(5),* 1347-1360.
8. Burke, R.J., Martin, G., and Cooper, C.L. (2011). *Corporate Reputation. Managing Opportunities and Threats.* England-USA: Gower Publishing Limited.
9. Chajet, C. (1997). Corporate reputation and the bottom line. *Corporate Reputation Review*, *1(1),* 19-23.
10. Choi, J., and Wang, H. (2009). Stakeholder relations and the persistence of corporate financial performance. *Strategic Management Journal, 30(8),* 895-907.
11. Cole, S. (2012). The Impact of Reputation on Market Value, *World Economics*, *13(3),* 47-68.
12. Davies, G., Chun, R., da Silva, R.V., and Roper, S. (2003). *Corporate reputation and competitiveness.* London: Routledge.
13. deBondt, W.F.M. (1998). A portrait of the individual investor. *European Economic Review, 42,* 831-844.
14. Deephouse, D.L. (1997). The effect of financial and media reputations on performance. *Corporate Reputation Review*, *1(1),* 68-72.
15. Dowling, G.R. (2006). How Good Corporate Reputation Create Corporate Value. *Corporate Reputation Review*, *9(2),* 134-143.
16. Dube, S.C. (2009). Good management, sound finances, and social responsibility: Two decades of US corporate insider perspectives on reputation and the bottom line. *Public Relations Review, 3,* 77-78.
17. Flanagan, D.J., O'Shaughnessy, K.C., and Palmer, T.B. (2011). Re-Assessing the Relationship between the Fortune Reputation Data and Financial Performance:

Overwhelming Influence or Just a Part of the Puzzle? *Corporate Reputation Review*, *14(1),* 3-14.

18. Fombrun, C. (1996). *Reputation.* Boston: Harvard Business School Press.

19. Fryxell, G.E., Wang J. (1994). The Fortune corporate "reputation" index: Reputation for what? *Journal of Management*, *20(1),* 1-14.

20. Goldberg, J., and von Nitzsch, R. (2001). *Behavioral Finance.* New York John Wiley.

21. Helm, S. (2005). Developing a formative measure for corporate reputation. *Corporate Reputation Review, 8(2),* 95-109.

22. Helm, S. (2007). The Role of Corporate Reputation in Determining Investor Satisfaction and Loyalty. *Corporate Reputation Review*, *10(1),* 22-37.

23. Jones, G., Jones, B., Little, P. (2000). Reputation as a reservoir. Buffering against loss in times of economic crisis. *Corporate Reputation Review, 3(1),* 21-29.

24. Larsen, D. (2002). Determining the relationship between investor relations and reputation', *6th International Conference on Corporate Reputation, Identity and Competitiveness.* Boston.

25. Lev, B. (2013). Jak zjednać sobie inwestorów. *Harvard Business Review Polska, 5*, 95-107.

26. Lewellyn, P.G. (2002). Corporate reputation: Focusing the Zeitgeist. *Business and Society*, *41(4),* 446-455.

27. Love, G.E., and Kraatz, M. (2009). Character, conformity or the bottom line? How and why downsizing affected corporate reputation. *Academy of Management Journal*, *52,* 314-335.

28. Mamdani, E.H., and Assilian, S. (1975). An experiment in linguistic synthesis with a fuzzy logic controller, *International Journal of Man-Machine Studies*, *7(1),* 1-13.

29. Nawrocki, T.L., and Szwajca, D. (2017). The Concept of Corporate Reputation Assessment Model – the Stock Market Investors Perspective. In A. Kavoura, D.P. Sakas, and P. Tomaras (Eds.). *Strategic Innovative Marketing. Springer Proceedings in Business and Economics*, 165-171.

30. Nawrocki, T.L., and Szwajca, D. (2018). Assessing Corporate Reputation on the Example of Polish Banks Listed on the Warsaw Stock Exchange. *Zbornik vedeckych prac*. Stefan Majtan a kolektiv. Ekonomicka Univerzita v Bratislave. Fakulta Podnikoveho Manazmentu. Katedra Podnikovo-hospodarska. Bratislava: Vydavatel'stvo Ekonom, 795-806.

31. Neville, B.A., Bell, S.J., Mengue, B. (2005). Corporate reputation, stakeholders and the social performance – financial performance relationship. *European Journal of Marketing, 39(9/10),* 1184-1198.

32. Pfarrer, M.D., Pollock, T.G., Rindova, V.P. (2010). A tale of two assets: The effects of firm reputation and celebrity on earnings surprises and investors` reactions. *Academy of Management Journal*, *53(5),* 1131-1152.

33. Piegat, A. (2001). *Fuzzy Modeling and Control*. Berlin-Heidelberg: Springer-Verlag.

34. Pradhan, S. (2016). Impact of corporate social responsibility intensity on corporate reputation and financial performance of Indian firms. *Business*: *Theory and Practice, 17(4),* 371-380.

35. Puncheva, P. (2008). The role of corporate reputation in the stakeholder decision-making process. *Business & Society, 47(3),* 272-290.

36. *Return on reputation. Corporate reputation watch 2006* (2006). Hill & Knowlton Published.

37. Roberts, P.W., and Dowling, G.R. (2002). Corporate reputation and sustained superior financial performance. *Strategic Management Journal*, *23,* 1077-1093.

38. Rodriguez-Fernandez, M. (2016). Social responsibility and financial performance: The role of good corporate governance. *Business Research Quarterly, 19,* 137-151.

39. Sabate, J.M., and Puente, E. (2003). Empirical analysis of the relationship between corporate reputation and financial performance: A survey of the literature, *Corporate Reputation Review, 6(2),* 161-177.

40. Shefrin, H. (2001). Do investors expect higher returns from safer stocks than from riskier stocks? *The Journal of Psychology and Financial Markets, 2,* 176-181.

41. Shefrin, H., and Statman, M. (1995). Making sense of beta, size, and book-to-market. *The Journal of Portfolio Management, 21*, 26-34.

42. Smith, K.T., Smith, M., and Wang, K. (2010). Does brand management of corporate reputation translate into higher market value? *Journal of Strategic Marketing*, *18(3),* 201-221.

43. Srivastava, R.K., McInnish, T.H., Wood, R.A., and Capraro, A.J. (1997). The value of corporate reputation: Evidence from the equity markets. *Corporate Reputation Review*, *1(1),* 62-68.

44. Vig, S., Dumičič, K., and Klopotan, I. (2017). The Impact of Reputation on Corporate Financial Performance: Median Regression Approach. *Business Systems Research*, *8(2),* 40-58.

45. Wagner, S.M., Coley, L.S., Lindemann, E. (2011). Effects of suppliers` reputation on the future of buyer-supplier relationships: the mediating roles of outcome fairness and trust. *Journal of Supply Chain Management, 47(2),* 29-48.

46. Zadeh, L.A. (1965). Fuzzy sets. *Information and Control, 8(3),* 338-335.

CHALLENGES FOR THE BUSINESS MODEL OF A NETWORK OF SMALL AND MEDIUM-SIZED MANUFACTURING ENTERPRISES IN THE ERA OF INDUSTRY 4.0

Sebastian SANIUK[1], Sandra GRABOWSKA[2*]

[1] University of Zielona Góra, Zielona Góra; s.saniuk@wez.uz.zgora.pl, ORCID: 0000-0002-9014-036X
[2] Silesian University of Technology, Katowice; sandra.grabowska@polsl.pl, ORCID: 0000-0002-0478-3466
* Correspondence author

Abstract: After three industrial revolutions, the fourth has come, transferring production to sophisticated networks of companies equipped with intelligent devices, machines, and means of transport, communicating with each other using modern technologies. It creates new challenges for industrial companies; it requires existing business models to be redefined. The development of the Industry 4.0 concept forces modern companies, especially small and medium-sized enterprises, to quickly and flexibly adapt to the changing demand conditions. This is reflected in the creation of new business models, ones that allow for the introduction of innovations, the rapid reorganization of processes, and very flexible adaptation of enterprises to the conditions of a changing environment.
The aim of the article is to present the concept of a business model assuming the creation of a network of small and medium-sized enterprises that are able to generate added value for their clients in the era of Industry 4.0.

Keywords: business model, Industry 4.0, customization, network production companies.

1. Introduction

Technological changes have gained strategic importance in the thinking and actions of many market players, at the same time penetrating into all links of the value chain and the ways they are connected, which changed the range of competition and the way in which the needs of buyers are met. The technical revolution has broadened the boundaries of what businesses can deliver to customers in the form of value. In a modern, highly competitive production environment, enterprises face the challenge of dealing with large amounts of data, the need to make quick decisions, and the need to make production processes flexible (in terms of offering the customer a highly personalized product). The contemporary nature of production is shaped by changes in the paradigm from mass production to production at the customer's request (Gajdzik, 2018).

Industry 4.0 marks the fourth industrial revolution, which is assumed to be a vision of intelligent factories built of cyber–physical systems composed of intelligent manufacturing and logistical resources communicating with each other through information and communication technologies (ICT). In addition, within the framework of the proposed concept of Industry 4.0, there is a close connection of physical objects functioning in geographically dispersed companies with an information network (Grabowska, 2018). Thus, sophisticated networks of companies are created, connected by intelligent resources, communicating via the Internet for the purpose of implementing joint production projects. The functioning of small and medium-sized enterprises in production networks today provides many additional development opportunities, but at the same time raises some concerns and requires many problems to be solved. In the case of SMEs, it means the possibility of offering customers a wide variety of products and services. The effectiveness and efficiency of such functioning requires businesses to create a cooperation network and to apply appropriate business models, as well as making often significant changes to them (Saniuk, 2018).

Almost all existing business systems are built as a way to archive and manage large numbers of transactions related to the company's operations — from sales through purchases and employee benefits to industrial processing. However, in the "modern world," and especially in the concept of Industry 4.0, the task of creating unique, personalized experiences requires systems to capture the essence of interaction, not the transactions themselves.

The aim of the article is to present the concept of a business model assuming the creation of a network of small and medium-sized enterprises that are able to generate added value for the client in the era of Industry 4.0. The article attempts to present the conditions for the development of production networks of small and medium-sized enterprises capable of functioning within the framework of the Industry 4.0 concept and the concept of a business model that takes into account their individual characteristics. The article is based on in-depth literature studies and the previous research of authors in the field of business models, Industry 4.0, and virtual cooperation networks.

2. The Concept of Industry 4.0

Industry 4.0 is currently one of the most interesting and current areas of research for many research centers and businesses, which makes it one of the most frequently discussed topics among practitioners and scientists dealing with production management issues. The growing expectations of customers in the modern market mean that modern enterprises, along with the increased efficiency and production quality, must also meet the high requirements of expected product customization, i.e., manufacturing products where the customer has a decisive influence on the final product. Customization can take various forms depending on the degree

of customer influence on the new product. The highest degree of customer interference, at the same time the most expensive and the most difficult to organize, occurs in the case of "pure customization," where the customer participates in the design phase of the product and thus, having an impact on the manufacturing process, receives a unique product. Certainly, these are the expectations of both the customer and the target creators of the concept of Industry 4.0. A slightly easier way to customize the product, one that is easier to organize and can be used currently in Industry 4.0 networks, would be either "tailored customization" or "customized standardization." In the first case, the customer has an impact on the production phase of standard parts, assemblies, or components, especially in terms of their sizes or shapes. In the second case, the customer influences the final assembly by selecting elements of the product configuration. In all cases, it is important that the price of the product is similar to the price of mass-produced products. The possibility of highly resolved production is guaranteed by the concept of Industry 4.0, which assumes the creation of a fully integrated system of suppliers, producers, and clients operating within cyber–physical systems (CPS), which are open sociotechnical systems capable of mutual communication and exchange of data for the implementation of activities imposed by manufacturing, logistics, or management. The implementation of this idea should allow for the development of intelligent production systems that, in addition to this autonomy, will have the characteristics of self-configuration, self-control, or repair (Wittbrodt, 2018).

The Industry 4.0 concept includes numerous technologies and associated paradigms. The main elements which are closely related to the idea of Industry 4.0, include the Industrial Internet of Things (IIoT) (cloud-based production, intelligent factories, cyber-physical systems, or social product development (Herman, 2015; Lee, 2013, Lasi, et al., 2014).

In this concept, the production process will continue to be an orderly series of actions thanks to which the consumer (user) has the opportunity to obtain the required product or service. It must be designed and organized for specific purposes that can be quickly and flexibly adapted to changing conditions, such as the volatility of quantitative and qualitative characteristics, material, energy, and information. It should be used to maximize corporate profit and customer satisfaction (Kagermann, 2014). Industry 4.0 is the use of mechatronic CPS products such as machines, devices, robots, manipulators, and means of transport throughout the production process, starting from creating a new product concept, designing, creating a product in a virtual environment, conducting necessary tests in a computer environment, and creating a product in a real environment, together with the development of software and computer-aided documentation of production and assembly, organization of logistics, service, and development of the recycling principles of the product offered. This provides the ability to meet customer expectations while maintaining high profitability of the production process, thanks to the dynamic adjustment of autonomous modules of the entire process of preparation, production, and delivery of the product to the customer using the IoT and information stored in Big Data and Cloud Computing (Chui, et al., 2010).

In the age of Industry 4.0 concept, the Industry 4.0 concept, each company is perceived as offering an intelligent module for use in the entire logistics chain, so the size of the enterprise ceases to matter. Meanwhile, the business model of a particular company takes on the significance of the technology used, the level of highly qualified staff employed, and openness to unlimited communication using increasingly common technologies, including Cloud Computing, Big Data, the Internet of Things, and blockchain (Saniuk, 2018).

3. Determinants of the business cooperation model of companies in the era of Industry 4.0

In a turbulent and changing environment, businesses are forced to look for the most effective methods of monitoring and detecting changes in the environment to undertake effective adaptation activities resulting from the Industry 4.0 concept.

The constantly increasing complexity of modern technologies, the progress of information and communication technologies, networking, globalization, social innovations, and the increase in the requirements of customers who increasingly expect a highly personalized product, pose new challenges for managers (Grabowska, 2018). As Z. Malara aptly put it, "all this means that new organizational rules, rules and modalities emerge from the organizational reality, which forces him to think of the future" (Malara, 2006). This means that today's enterprise needs to change its modus operandi — which has worked well in the past — and develop network cooperation. Companies should increase their ability to participate in global networks that use shared resources of partners in order to meet the high requirements of a modern client. This fundamental transformation of business is just taking place. Industry 4.0 will absolutely force enterprises to change their models of operation. One of the most important models of business management which enables flexible, effective, and competitive functioning of the company on the market is a process-based model.

In order to create a business model of a network of manufacturing enterprises operating in the era of Industry 4.0, it is necessary to start with some assumptions:

- The value is determined by experience created at a given time in cooperation with a single consumer (this phenomenon will be called $N = 1$).
- The company is not vertically integrated.
- The company is not able to satisfy the consumer's expectations at a given time due to size and activities.
- Attention is focused on access to resources, not on ownership of resources.
- Resources are derived from various suppliers, and access to them is global (this trend will be marked as $R = G$).
- It is crucial that the supply of products, services, and competences is multi-institutional.

The observed increase in competitiveness and globalization processes, as well as ongoing mergers and acquisitions, affect the search for new methods, techniques, and management instruments. The ongoing development of a knowledge-based economy expressed in the intensive transfer and diffusion of innovation has a significant impact on changes in business models and business processes. New forms of competitiveness and cooperation emerge. New models applying a wide range of different types of innovations are used, business models based on the principles of a "new era of innovation" (Prahalad, Krishnan, 2010).

Using the concept of the "new era of innovation" for the research needs of the work, it was assumed that the business model is a configuration of business processes that combine and develop resources, shaped in the form of the social and technical architecture of the enterprise.

The need to conduct research in the field of business models of enterprise networks can also be proven by the numerous benefits of business cooperation indicated in the literature. Entering enterprises into various cooperative arrangements, including the organization of permanent or temporary networks, is particularly attractive for small and medium-sized enterprises, which in this way can overcome the main competitive advantage of large companies, especially in terms of access to all types of resources (capital, competencies, know-how, etc.).

From the point of view of creating and using the so-called The "new era of innovation" should be treated as one of the most important elements of the company's competitive and innovative potential structure, serving its transformation as shown in Figure 1 (Prahalad, Krishnan, 2010).
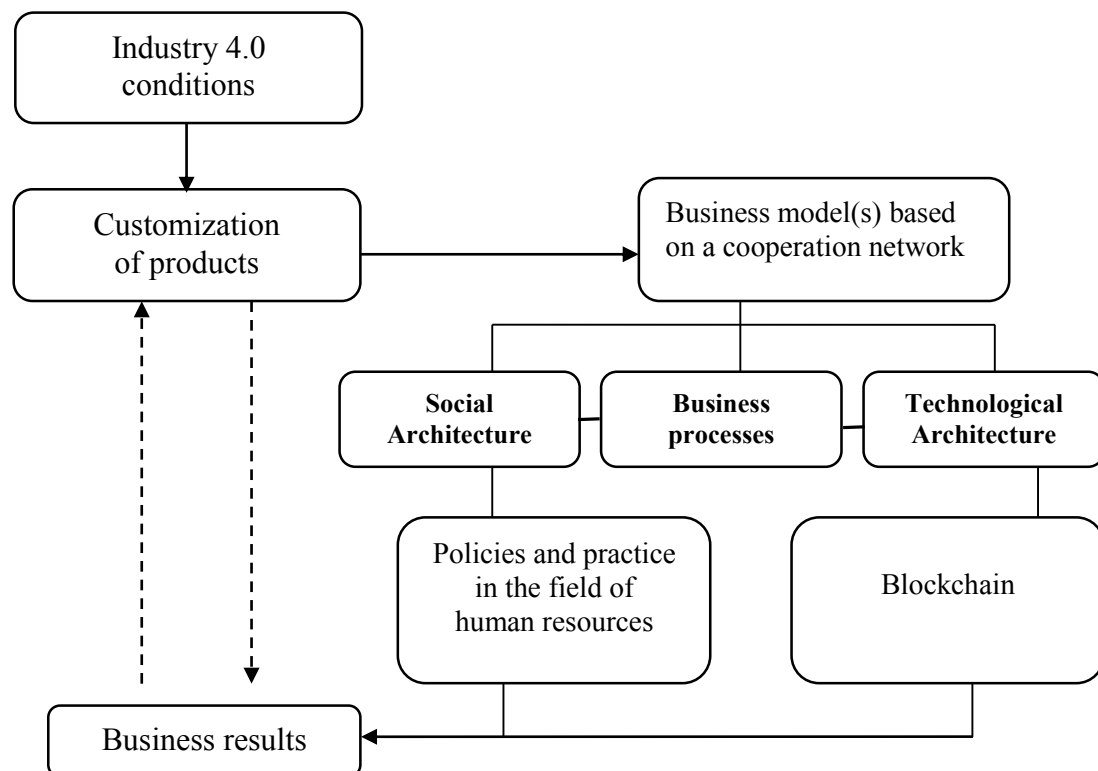
Figure 1. Structure of building the business transformation potential by principles of the new era of innovation (N = 1 and R = G) in Industry 4.0.

The business model, according to the new era of innovation, is based on the configuration of social architecture and technological architecture of interconnected business processes and perfectly meets the requirements of Industry 4.0 (such as product customization, the need to build cooperation networks, digitization, robotization, logistics 4.0, etc.).

In this model, the role of business processes is clearly emphasized. In practice, the elements of such a business model are as follows:

- social architecture (knowledge resources, management systems, competencies, employee development, and motivation),
- technological architecture (IT and telecommunications devices, computers, ICT systems, robots, etc.),
- business processes that combine these databases (essentially infrastructural) and at the same time derive from them the resources necessary for the implementation of appropriate products that create value for the client.

Schematically, such a model is shown in Figure 2.
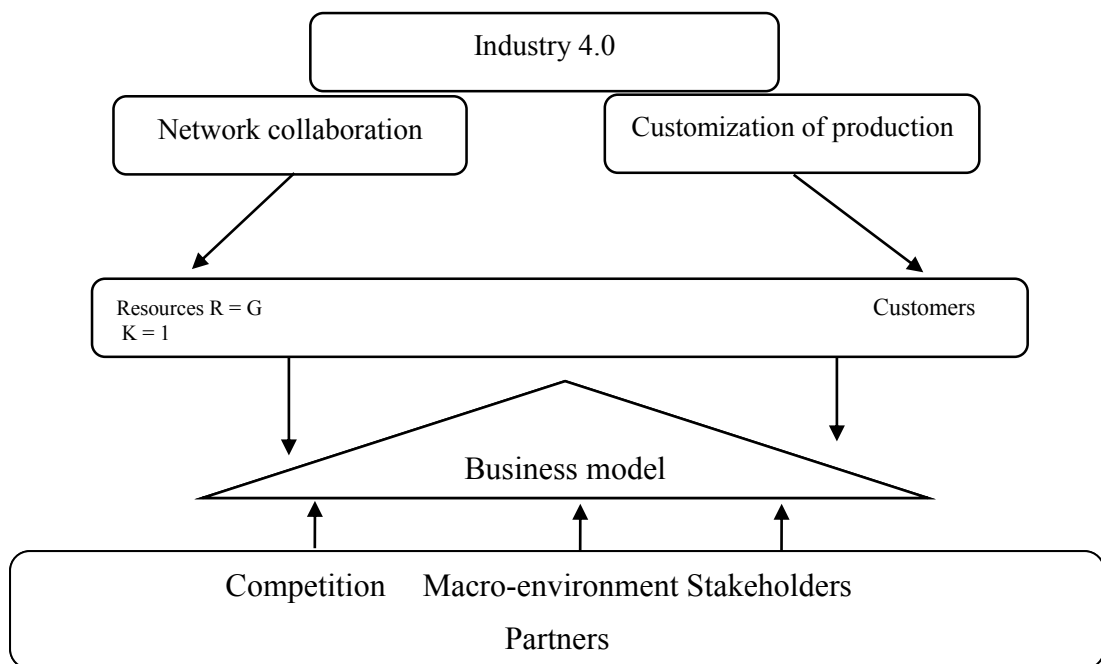
Figure 2. Business model of network enterprises in Industry 4.0.

When analyzing Figure 2, it is worth noting that the transformation potential is highly dependent on human resources and the ability to apply modern ICT systems. In particular, this concerns the competencies and opportunities for employee development, as well as the advancement of digitization processes and efficient communication systems. It is worth noting that in this approach the results of business operations are conditioned by the transparency of the developed strategy and the configuration of business model elements. Only in such conditions will enterprises cooperate effectively within the network.

1. Value is based on exceptional personalized customer experience. Businesses must focus on one customer. Regardless of the number of clients, the focus is on the central position of the unit. This pillar is known as N = 1 (the experience of a single client at one time). By focusing on the needs of an individual customer, it is possible to get his/her feedback or directly materialized product. Such an approach to the customer means treating him/her as an active recipient and a modifier of the product, and thus a prosumer, which is the main assumption of the concept of Industry 4.0. Meeting this assumption requires interaction with SMEs. The level of technology used, the level of highly qualified staff employed, and openness to unlimited communication are becoming increasingly important today. By combining the potential of partners as a network organization, you can offer more complex, innovative products and services tailored to customer needs (Walters, Buchanan, 2001). The company's participation in the network provides new opportunities and enables the use of modern organizational solutions which have a significant impact on the increase in operational efficiency manifested by the process orientation, decentralization of management, professional development of employees, etc. (Perechuda, 2002). In addition, the possibility of being part of many alliances allows one to better use one's resources and increase their use with the benefit of increasing the productivity of the entire company. It is also worth mentioning the positive impact on the learning process of organizations (enterprises operating within the network) of gaining new experiences and know-how from mutual relationships between cooperating enterprises (Urbaniak, 2001).

2. All enterprises have access to a global ecosystem, including resources. Businesses focus their attention on access to resources and not only on possessing them. This pillar is described as R = G (resources are global from many suppliers, often from anywhere around the world).

As can be seen in Figure 2, in the business model business processes must be associated with the relevant qualifications, attitudes, and orientations of managers. Social architecture — organizational structure, measurement methods, training, qualifications, and organizational values — must reflect the new competitive imperatives resulting from the concept of Industry 4.0. The same must be required from the technological architecture of the company — the backbone of its information technology, automation, and robotization of production processes. All of these areas represent the potential that can be offered to partners within the cooperation network.

It can therefore be said that an important advantage of this concept is the treatment of the model as overriding values — innovation and efficiency — which are achieved through appropriately selected and combined elements of the model. The use of innovations that radically change the company's strategy enables the creation of a new market space — a formula of success that allows one to "work around" the existing competition system.

4. Conclusions

With the development of Industry 4.0, there are new opportunities as well as threats to companies and their business models. Building a new industry is not easy because it requires new business resources. Formulating and adapting to change is a long-term activity. The assumptions of the business models of enterprises presented herein should be treated as an overview because the concept of Industry 4.0 is such a new concept that there are many possible scenarios for its development. It is difficult to predict today how enterprises should behave because we do not know exactly what expectations the client will have. On the other hand, to paraphrase Pitcher Drucker, the companies shape the client — his tastes, expectations, and requirements.

However, it can be stated that changes in business models and business processes will play an important role in the area of management systems. The new business concepts will translate into a concrete model constituting a strategic and operational basis for changing the configuration of products and processes in the company, enabling competition on the market determined by the concept of Industry 4.0.

The emerging transformation of business from the ideas of Industry 4.0 is based on trends that cannot be reversed. Consumer activism, ubiquitous communication, the convergence of technologies and industries, globalization of markets, and the global search for and access to resources are trends that are not controlled by any single company — hence, the creation of cooperation networks, especially for SMEs. These changes will inevitably lead to the business world that follows the development of Industry 4.0.

References

1. Chui, M., Löffler, M., and Roberts, R. (2010). The Internet of Things. *The McKinsey Quarterly, 2(47)*, 1-9.
2. Gajdzik, B. (2018). Przemysł 4.0 wyzwaniem dla przedsiębiorstw sektora hutniczego, *Hutnik – Wiadomości Hutnicze, LXXXV(85), 6.* Warszawa: Sigma-Not, 191-195.
3. Grabowska, S. (2018). Dynamizacja modelu biznesu poprzez innowacje – szansa rozwoju przedsiębiorstwa produkcyjnego. *Marketing i Rynek, 25, 12*, dysk optyczny (CD-ROM), 149-157.
4. Grabowska, S. (2018). *Improvement of the production process in the Industry 4.0 context.* MAPE 2018. XV International Conference Multidisciplinary Aspects of Production Engineering, 05-08 September 2018, Zawiercie, Poland. Conference proceedings. Vol. 1, iss. 1. [B.m.]. Wyd. PANOVA, 55-62.

5. Hermann, M., Pentek, T., Otto, B. (2015). *Design Principles for Industrie 4.0 Scenarios. A Literature Review*. Technische Universität Dortmund (1).

6. Lasi, H., Fettke, P., Feld, T., Hoffmann, M. (2014). Industry 4.0. *Business & Information Systems Engineering, 6,* 239-242.

7. Lee, J. (2013). Industry 4.0 in Big Data Environment. *German Harting Magazine,* 8-10.

8. Malara, Z. (2006). *Przedsiębiorstwo w globalnej gospodarce. Wyzwania współczesności*. Warszawa: PWN, 11.

9. Perechuda, K. (2002). *Zarządzanie przedsiębiorstwem przyszłości. Koncepcje, modele, metody*. Warszawa: Agencja Wydawnicza Placet.

10. Prahalad, C.K., Krishnan, M.S. (2010). *Nowa Era Innowacji.* Warszawa: PWN.

11. Saniuk, S., Saniuk, A. (2018). Warunki rozwoju sieci produkcyjnych polskich MŚP w obliczu wyzwań koncepcji Przemysł 4.0. *Zeszyty Naukowe Politechniki Śląskiej. Organizacja i Zarządzanie, 118*, 503-514.

12. Urbaniak, M. (2001). *Wybrane elementy gospodarczych organizacji wirtualnych.* Poznań: Wydawnictwo Akademii Ekonomicznej.

13. Walters, D., Buchanan, J. (2001). The new economy, new opportunities and new structures. *Management Decision, 39/10*, 822-823.

14. Wittbrodt, P., Łapuńka, I. (2018.05.24). Przemysł 4.0 – Wyzwanie dla współczesnych przedsiębiorstw produkcyjnych. Available online http://www.ptzp.org.pl/files/ konferencje/kzz/artyk_pdf_2017/T2/t2_793.pdf**.**

MENTORING IN POLISH NONPROFIT ORGANIZATIONS

Bartosz SEILER[1], Hanna BORTNOWSKA[2*]

[1] University of Zielona Gora, Faculty of Economics and Management; b.seiler@wez.uz.zgora.pl,
ORCID: 0000-0003-0380-746x
[2] University of Zielona Gora, Faculty of Economics and Management; h.bortnowska@wez.uz.zgora.pl,
ORCID: 0000-0002-7327-7524
* Correspondence author

Abstract: Mentoring is used by enterprises as an effective method of developing the competences of their employees. The purpose of the article was to determine the areas of application of mentoring in nonprofit organizations. The authors conducted a systematic review of the issue, which highlighted that there are few publications on this topic. On the basis of this review, a theoretical framework was prepared, which was further verified. Three areas of the application of mentoring in Polish nonprofit organizations were distinguished: staff development, the professionalization of the organization as a whole and the implementation of its stated mission principles or *statutory goals*[1]. Subsequently, 26 nonprofit organizations that use mentoring were selected and an analysis of the words contained on their websites was conducted (supported by IRAMUTEQ program). To triangulate data, a semi-structured interview with one of the surveyed organizations was conducted. An analysis showed that nonprofit entities use mentoring not only as a method of developing employee competences, but also to professionalize the entire organization as well as directly to achieve statutory objectives. In addition, it has been shown that Polish nonprofit organizations use both intra-sectoral and cross-sectoral mentoring. The research results may be the basis for further analyzes of the use of mentoring in nonprofit entities regarding its effectiveness in particular areas, as well as the relationships between various areas.

Keywords: mentoring, nonprofit organizations, professionalization of nonprofit organizations.

1. Introduction

Mentoring[2] in organizations arose as a response to the need to support employees in the pursuit of self-improvement and the achievement of corporate goals (Myjak, 2016). It assumes a partner relationship between the mentor (master) and the mentee (protégé, pupil[3]), in which a

---

[1] In Poland, NGOs operate via a set of stated principles known as statutory goals. This term is used throughout this study since it concerns Polish third-sector entities.

[2] Its genesis has been repeatedly described in the literature (see e.g. Antal, 1993; Ehrich and Hansford, 1999; Hall, 2003; Inzer and Crawford, 2005; Mesjasz, 2013), which is why such considerations were omitted in this article.

[3] In the article, these terms are used interchangeably for stylistic reasons.

more competent and experienced person gives advice, information and guidance to a less experienced person, thus caring for his or her professional and personal development (cf. Luecke, 2006; Mesjasz, 2013; Wanberg et al., 2003)[4]. The individual receives support *to manage their own learning in order to maximize their potential, develop their skills, improve their performance, and become the person they want to be* (Parsloe, 1992, as cited in: Simkins et al., 2006, p. 323; cf. Clutterbuck, 2002). In addition, they discover new opportunities, undertake new challenges, identify their limitations and barriers, and embark on activities that will enable them to overcome them, receive emotional support and help in monitoring their progress (cf. Gambande, in: Guryn, 2013).

Different types of mentoring (individual/team, formal/informal, intra-team/inter-team, traditional/e-mentoring, etc., for more, see e.g.: Brewerton, 2002; Mazur, 2008; Stankiewicz and Bortnowska, 2016) can be effectively implemented in business organizations[5], contributing to: improved knowledge transfer, more effective talent management, increased employee retention rates, improved cultural and diversity management (cf. Beltman and Schaeben, 2012; Ehrich and Hansford, 1999; Garvey and Garrett-Harris, 2008). The benefits of mentoring are also enjoyed by employees in such organizations, and they include better: satisfaction, motivation, self-confidence and commitment, a development of professional competences, and opportunities for promotion (cf.: Beltman and Schaeben, 2012; Ehrich and Hansford, 1999; Garvey, Garrett-Harris, 2008).

A preliminary analysis of issues related to mentoring gave rise to the question about the fields of its use in organizations other than enterprises, namely in nonprofit entities (non-governmental, NGO, the third sector, and voluntary)[6]. The assumptions of mentoring seem to be consistent with the culture of the third sector. The concept of training based on a master-student relationship fits well into the axio-normative aspect of the activities of nonprofit entities, along with the principles of democratic management that they adhere to[7].

Since the literature on the subject has a limited number of scientific publications on the use of mentoring in nonprofit entities, our analyzes were undertaken in that area. The object of the article is to determine the fields in which mentoring can be used in Polish nonprofit organizations. Answers to the following questions were sought: Who is the recipient of mentoring offered to nonprofit organizations? To whom do they then provide mentoring services? In which fields can mentoring be used in Polish nonprofit entities?

---

[4] Such an understanding of mentoring is adopted in this article.

[5] This has been demonstrated by numerous studies on the effectiveness of mentoring (e.g.: Baran, 2017; Jyoti and Sharma, 2017; Neupane, 2015; Tewari and Sharma, 2014; Underhill, 2006). An example may be the quantitative research carried out by Peace and Ofobruk (2015), according to which mentoring (directed at career support, psychosocial and/or knowledge transfer) had a positive impact on employee performance.

[6] According to the structural-operational definition popular in the literature, nonprofit organizations are entities that are institutionalized, have a private nature, are independent of public administration, self-governing, voluntary, and generate profits to pursue missionary activity (Salamon and Anheier, 1997).

[7] Fudaliński (2013) characterized the culture of nonprofit organizations as: flexible, innovative, people-oriented, collectivist, feminine, with a small distance of power and low level of avoiding uncertainty. They are also inclusive of informal, personal relationships, consensus, the idea of expressing different views and different attitudes, mutual trust, cooperation, and commitment.

The study is divided into seven sections, starting with the introduction. Subsequently, the results of a literature review are presented (based on publications on mentoring in nonprofit organizations included in the EBSCO and Google Scholar databases), followed by the methodology of our research. This paper also presents the results of a review of the websites of a number of Polish third-sector entities, which provide mentoring services. The next section gives an account of the interview conducted with the coordinator of a mentoring program in one of the surveyed nonprofit organizations. The article ends with a presentation of the conclusions derived from the conducted research.

2. Mentoring in nonprofit organizations – results of database review

An analysis of the content of the EBSCO and Google Scholar databases (for the years 1980-2018) showed only a small number of peer-reviewed publications on mentoring in nonprofit organizations (searches for articles containing the following terms in the title: 'mentoring'/'mentor', and 'nonprofit'/'non profit'/'non-profit'/'NGO'/'non-governmental'/ 'nongovernmental'/'voluntary organization'/'third sector') (Table 1)[8].

Table 1.
Number of publications containing terms related to mentoring in nonprofit organizations in their titles

Key terms included in the titles of publications	Number of titles of reviewed publications in the EBSCO database	Number of titles[9] of publications in the Google Scholar database
'mentoring' and 'nonprofit'/'non-profit'/'non profit'	1	8 (including 4 doctoral dissertations, 1 guide and 3 articles)
'mentor' and 'nonprofit'/'non-profit'/'non profit'	1	0
'mentoring' and 'NGO'	3	0
'mentor' and 'NGO'	1	0
'mentoring' and 'non-governmental organization'/'nongovernmental organization'	3	3 (including 1 doctoral dissertation and 2 articles)
'mentor' and 'non-governmental organization'/'non-governmental organization'	1	1
'mentoring' and 'voluntary organization'	0	0
'mentor' and 'voluntary organization'	0	0
'mentoring' and 'third sector'	0	1
'mentor' and 'third sector'	0	2 (including 1 doctoral dissertation and 1 article)

Source: own study based on: EBSCO and Google Scholar (http://www.bu.uz.zgora.pl/index.php/pl/ e–zbiory/eds; https://scholar.google.pl/).

---

[8] The results of the systematic review of the literature on mentoring in the third sector prompted a conclusion that this area of knowledge is only beginning to take shape (most of the identified studies have been developed in the last ten years). For this reason, the authors have helpfully synthesized knowledge in the field of business mentoring and the specifics of the functioning of non-governmental organizations.

[9] Reviewed publications cannot be filtered out in the Google Scholar database.

By reviewing the publications indicated in the EBSCO database, the list of relevant articles was reduced to four[10], whereas the review of Google Scholar items expanded that list by another four scientific articles[11] and six doctoral dissertations concerning the subject area under consideration. Among the identified articles, three were theoretical studies (Bronznick and Goldenhar, 2009; Codreanu, 2012; Safi and Burrell, 2007) and the remaining five were empirical works (based on surveys using questionnaires, case studies and heuristic methods: Bogdanova, 2008; Momoh et al., 2015; Nyamori, 2015; Smith et al., 2005; Washington, 2011).

Some authors analyzed issues related to the use of mentoring for the development of employees in nonprofit organizations (Bronznick and Goldenhar, 2009; Codreanu, 2012; Momoh et al., 2015; Safi and Burrell, 2007; Washington, 2011). Nyamori (2015), via empirical research, and found a positive impact of this technique on non-governmental organizations and on the development of their members[12]. Another research perspective was adopted by Smith et al. (2005) who analyzed the functions and characteristics of mentors, including those who work in the third sector. Meanwhile, international mentoring and the diffusion of modern management models across Bulgarian nonprofits were addressed by Bogdanova (2008). In this context, mentoring may be recognized not only narrowly, as a technique for the development of staff competence, but also more broadly – as a source of the professionalization of the entire organization[13]. According to the authors, this is particularly important when analyzing the situation in the countries of Central and Eastern Europe, in which there is a certain backwardness of the third sector springing from the socialist structure of their economies before 1989.

The specificity of the organizations in question is that they operate in the public dimension, are not profit-oriented, are driven by certain values, and work towards social change. In such entities, mentoring may be a tool for the direct implementation of the objectives they were founded for in the first place. The literature exploring this topic is more extensive and falls within the area of what is known as social mentoring, a practice whose usefulness has been demonstrated, among other areas, in working with: children and adolescents (Rhodes and Lowe, 2008; Thompson et al., 2016), patients (Rube et al., 2014; Hafford-Letchfield and Chick, 2006), and socially excluded persons (Engelbrecht, 2012; McGeorge and Stone-Carlson, 2010) [14].

Based on the results of the literature review, the fields in which mentoring may be used in nonprofit organizations were distinguished (Figure 1).

---

[10] For comparison, the number of peer-reviewed mentoring studies in the EBSCO database was 26,364.

[11] There were 1,080,000 mentoring publications in the Google Scholar database.

[12] Research conducted at SOS Children's Villages.

[13] These fields are interrelated, as increased professionalism among employees translates into the professionali-zation of the entire organization.

[14] 170 peer-reviewed publications on social mentoring were identified in the EBSCO database, and 630 items – in Google Scholar.

Figure 1. Fields of application of mentoring in nonprofit organizations. Source: own study.

Concerning nonprofit entities, mentoring may be applied in three main fields: the development of staff competences, the professionalization of the organization, and the implementation of its statutory objectives. It may be used to develop the competences of individual employees as represented by various categories, i.e. managers, paid employees and volunteers. Mentoring can also be a tool for professionalizing the entire organization: to raise business standards, as well as to adopt models from the business world. It should be noted that improving the professional knowledge and skills of individual members also contributes to professionalization. Finally, mentoring can be conducive to the direct implementation of statutory goals, e.g. by creating opportunities for the development of beneficiaries of nonprofit entities.

3. Methods

The conducted research process consisted of several stages. Firstly, research problems and goals were identified. Subsequently, publications exploring the outlined research problems were identified based on the EBSCO and Google Scholar databases as well as other online resources [websites reviewed at www.google.com – recommendations from Czakon (2011) and Grzybowski (2014) were accounted for in conducting the systematic literature review]. They concerned the fields of mentoring in third-sector organizations, and in business organizations as providing a comparison. In the articles, information was sought on the potential recipients and targets of mentoring. The studies were filtered by a rejection of those that were repeats or those that did not meet the requirements of a scientific publication. Lastly, the obtained research material was coded and categorized. A report on the conducted literature review was prepared, on the basis of which a theoretical framework was put forward for the fields where mentoring could be used in nonprofit organizations (Figure 1, section 2).

Subsequently, an initial analysis of text contained on the websites of Polish nonprofit organizations that provide mentoring services was conducted. During the research, specific words and phrases contained in websites regarding mentoring programs offered to employees

of nonprofit organizations were searched, and so were their synonyms. The context in which they were used as well as the links between the most common terms were also considered (supported by the IRAMUTEQ program). The collected data was quantified (cf. Babbie, 2008; Silverman, 2011), thus, both qualitative and quantitative approaches were combined in the content analysis.

Furthermore, the identified texts were analyzed by considering the theoretical framework of this study (Figure 1). In the process of selecting organizations for the study, a set of keywords and the Google search engine were used. Also helpful was a general knowledge of Polish nonprofit entities. Ultimately, a total of 26 cases (websites) were selected. Given the non-random selection of the sample, the obtained research material was not representative of the general population, but still enabled a more profound exploration of the problem at hand. A preliminary data analysis was performed during the collection of the data, whereas a proper analysis was performed after gathering the appropriate research material. The obtained data were then coded to provide a list of codes based on the theoretical framework. In the course of the analysis, this list was subject to further specification. Findings from the research were confronted with the available literature and the experience of the authors in the area of mentoring and cooperation with third-sector entities. This allowed for the formulation of relevant conclusions from this part of the research.

In the next stage, for triangulation purposes, a semi-structured interview[15] was conducted (Frankfort-Nachmias et al., 2015) in one of the 26 identified nonprofit organizations[16], whose discussion guide was also developed on the basis of the theoretical framework. The interview took place in April 2019, with the coordinator of the mentoring program serving as the key informant. While the interview was indeed exploratory, it also enabled a verification of the conclusions formulated in the previous stages and helped to pinpoint directions for future quantitative research. The closing of the investigation process was preceded by the formulation of conclusions and an indication of the limitations of the research that was conducted.

4. Results of a preliminary analysis of websites related to mentoring programs offered to representatives of Polish nonprofit organizations

The preliminary analysis of the content of identified websites was supported by the IRAMUTEQ software (see more: Glińska-Neweś and Escher, 2018: 85; Camargo and Justo, 2013), among other tools. Due to the fact that it does not contain a Polish dictionary, it was

---

[15] The interview agenda contained nine open-ended questions.
[16] Representatives of six Polish non-profit organizations using mentoring were asked to participate in the interview. Finally, only one person decided to take part in it. The others refused, justifying the lack of time or by creating other barriers.

necessary to translate the text into English. Consequently, the translation was prepared in accordance with the program requirements, and conjunctions, prepositions, most particles, etc. were removed. The words that appeared at least five times in the websites' content were used for the preparation of Figure 2, which shows the number of individual words and the correlations that exist between them and their intensity. During the preliminary analysis of the text, the words were sought that were included in Figure 2 and referred to our theoretical framework. The term 'development' (or similar words) appeared on the examined websites 15 times, 'competence' – ten times. It was supposed that the recipients of mentoring could be, e.g. leaders (this term occurred 12 times) or volunteers (16 times). The word 'professionalization' appeared only once, 'statutory' – twice, while 'goals' – six times. A few main islands of words have been identified. The focus is on the mentor and the activity he or she pursues. A mentor pays attention to people with whom he or she builds relationships and to whom he or she gives support. A mentor's activity is also oriented towards organization and management, including seeking solutions to the problems which mentees have experienced.

Figure 2. Correlations between the most common words found on websites related to mentoring programs for nonprofit representatives. Source: own study.

Due to such an analysis, only a preliminary view of the content of websites related to mentoring programs offered to representatives of nonprofit organizations was obtained. Subsequently, a detailed analysis of the content of the identified websites was carried out.

5. Mentoring in Polish nonprofit organizations – results of a website review analysis

In management terms, nonprofit organizations clearly differ from enterprises and public organizations. Their distinctive features include, but are not limited to: a mission-like and non-financial purpose of activity, an implementation of social services in an emotionally and personally engaged relationship with recipients, voluntary membership, and a reliance on voluntary social work (Stankiewicz, Moczulska, Seiler, 2018; cf. Anheier, 2005). Needless to say, this specific character of nonprofits should be taken into account when implementing mentoring. The analysis of the content of websites showed that such efforts were made in Poland by the Association of Education and Social Research in Wroclaw. As a project coordinator, the Association completed a two-year program entitled *Mentoring as a vocational training method for third-sector organizations*, in which nine non-governmental entities and enterprises from seven different countries of Western, Central and Eastern Europe participated. Due to this undertaking, examples of global good mentoring practices were identified and a training program for representatives of nonprofit organizations was developed, considering the specific nature of such organizations. The solutions proposed were tested among employees and volunteers of non-governmental entities in seven countries participating in the project (http://fundacja–umbrella.org.pl/portfolios/mind–ts/). The results of the analysis of training materials shared on the websites, which were one of the results of this project, did not show any significant differences in the mentoring methodology in the third sector. Their authors focused on the specifics of particular nonprofit organizations, preparing individual (dedicated) mentoring solutions, but at the same time they did not find significant cross-sectoral disparities. This could indicate the relative universality of mentoring as a training technique and the possibilities of its adaptation and dissemination in the nonprofit sector as well.

5.1. Mentoring for the development of staff competence in a nonprofit organization

Nonprofit organizations are a product of grassroots, civic initiative and link their functioning with social work. As a consequence, they have a more diverse staff structure than commercial or public organizations. Four basic categories of third-sector employees may be distinguished. These are: a) managers; b) members (founders or shareholders who serve as a resource to internal volunteers); c) external volunteers (social workers who are not members

of the organization) and; d) paid employees. The analysis established that mentoring may be addressed to each of these categories of employees.

5.2. Mentoring for the development of staff competence in a nonprofit organization

In Poland, acquiring volunteers (social workers) and maintaining their involvement poses a significant challenge to non-governmental organizations (Stankiewicz, Bortnowska, Seiler, 2018; Bortnowska and Seiler, 2018). The problem is the low supply of volunteers compared to other OECD countries, but also the ephemeral and occasional nature of volunteering in Poland. In other words, third-sector organizations in Poland face difficulties not only with recruitment as such, but also with the retention of volunteers afterwards (Stankiewicz et al., 2016). According to research by Adamiak et al. (2016), this problem is reported by more than one in three (37%) Polish nonprofit entities.

Non-governmental organizations should seek opportunities to improve the offer for volunteers, so that these can not only develop the competences needed to carry out their tasks, but also to have the chance to meet their own needs, such as improving knowledge and skills useful in the commercial labor market[17].

As found in the research, mentoring addressed to Polish volunteers focused not only on the development of their competences necessary to perform assigned tasks, but it was also to prepare them for fulfilling the role of a citizen or employee (Table 2). In one of the organizations (TEB Edukacja), participation in the mentoring program was an opportunity for volunteers to update skills necessary to work with socially excluded persons. Additionally, it made it possible for the employees to acknowledge their strengths and identify resources that may be used in fulfilling their duties as a social worker, as well as to pinpoint areas for development. Another organization (Fundacja Centrum Aktywności Twórczej) implemented activities as part of European Voluntary Service. The declared goal of the mentoring program in this case was to develop the competences of intercultural volunteers and to facilitate their adaptation in the country where they had come to perform social work (cf. Abbe et al., 2007).

Table 2.
Examples of Polish nonprofit organizations implementing mentoring addressed to volunteers

Organization name	Mentoring program goal
TEB Edukacja	Teach volunteers how to cope with stress and difficulties in working with socially excluded persons, prevent burnout, animate the local environment, raise funds for those at risk of social exclusion, etc. They obtained information about their resources and areas for development.
Fundacja Centrum Aktywności Twórczej	Make it easier for volunteers to take up social work in countries participating in the program and neighboring partner countries, accelerating the process of socio-professional adaptation.

Source: own study based on: https://efs.teb.pl/aw/wsparcie; http://fundacja–cat.pl/news/w–94/mentorzy–dla–zagranicznych–wolontariuszy–poszukiwani.

---

[17] Instrumental motivation among volunteers was confirmed, among others, in research studies by Stankiewicz et al. (2016).

In the literature, it is emphasized that in third-sector organizations, departures of employees are more frequent than in the case of commercial enterprises, which could be explained by the low barriers of exiting such entities. Resignation from cooperation with third-sector organizations is more frequent in situations where other areas of a volunteer's life require greater involvement or when a volunteering employee loses the benefits that led them to cooperate with the organization in the first place (Alatrista and Arrowsmith, 2004; Bradshaw, 2003; Phillips, H., and Phillips, J., 2010). According to Wymer and Starnes (2001), volunteer retention is favored by receipt of support from other members of the organization. A similar argument, as believed by J. Garner and L. Garner (2010), may be used in relation to providing feedback on the performance of voluntary work. Therefore, leaders in the discussed entities should consider the use of mentoring, which not only promotes the development of volunteer skills (needed to effectively carry out assigned tasks), but also strengthens their commitment to the organization's cause (cf. Stankiewicz, Bortnowska, Seiler, 2018).

The research shows that mentoring programs can be addressed not only directly to volunteers, but also to people who manage them. Such an offer was prepared jointly by Fundacja Rokoko and Stowarzyszenie Literackie K.K. Baczyński (http://rokoko.org.pl/szkolenia--wolontariacie-i-tionoring-dla-kulturalnych-ngo/). The proposal targeted representatives of nonprofit entities engaged in cultural and artistic activities, offering participation in educational undertakings on subjects related to cultural volunteering. Their participants learned not only how to design an offer, but also how to manage a team of volunteers, e.g. in terms of their recruitment and development. This example shows that mentoring can also be addressed to people managing nonprofit organizations, namely, their leaders.

5.3. Mentoring addressed to leaders of nonprofit organizations

A characteristic feature of the discussed organizations is the varied level of the professional competences of the people working in them. Limited funding opportunities for remuneration mean that the Polish third sector mostly employs low-skilled managers and workers (Bogacz-Wojtanowska, 2009, p. 20). In addition, a phenomenon that may be described as *manager's loneliness* is very much at play in the Polish third sector. Since there is no structure of subordination in such organizations, their leaders do not have formal tools for shaping relationships with staff. Because of that, they often end up being overwhelmed by the excess of responsibilities without receiving adequate support from members and volunteers. In Poland, more than half (55%) of the surveyed non-governmental organizations admitted that most of the tasks are carried out by their leaders, i.e. members of the management board (Adamiak et al., 2016). Only in every fourth (26%) is the work divided evenly. This, of course, negatively affects the well-being of managers. In 2015, fatigue and burnout among leaders was observed in every third (36%) such individual (Adamiak et al., 2016). To combat this, mentoring can be suggested that will help leaders to identify goals and recognize the resources needed to

implement them, not only their own, but also those available to third parties (co-workers, donors, etc.). It would also push leaders to seek ways to develop staff engagement so that they are actively supported in the implementation of their organization's mission. Another problem faced by third-sector entities in Poland concerns limited succession possibilities, i.e. difficulties in finding replacements for current leaders. There is also a shortage of ideas on the roles these retired leaders could fulfill after handing over the managerial position, or how to make use of their potential. In fact, there is currently no specific development path for such outgoing leaders. Perhaps they could adjust well to the role of the mentor? Their knowledge and managerial experience could indeed become an important source of inspiration for those who take over their managerial positions.

In the course of the research, mentoring programs addressed to the leaders of nonprofit organizations were identified. They were being implemented through intra-sectoral and cross-sectoral cooperation (Table 3).

Table 3.
Examples of Polish organizations implementing mentoring addressed to managers of nonprofit entities in the framework of intra-sectoral and cross-sectoral cooperation

Organization name	Mentoring program goal
Regionalne Centrum Wolontariatu w Kielcach	Support for NGO leaders in areas such as: creating and managing the organization, building missions and visions, leading, raising funds and managing volunteers.
Feminoteka and IBM	Provide care from female managers at IBM to women starting their management career in the third sector.
Fundacja Szkoła Liderów and Fundacja PwC	Support social leaders by PwC managers in the areas of management, team management and strategy building.

Source: own study based on: http://centrumwolontariatu.eu/oferta–dla–ngo/; http://warszawa.ngo.pl/wiadomosc/661205.html; https://tuwiazowna.pl/sektory–jedna–wizja–coaching–pwc–dla–liderow–spolecznych/.

An example of mentoring implemented through intra-sectoral cooperation was the activities of the association Regional Volunteer Center in Kielce, Poland, which provided mentoring services to managers at third-sector organizations. The mentors shared their experience and worked on competences of the mentees in the field of creating and managing third-sector entities. On the other hand, cross-sectoral cooperation may be exemplified by the activities of IBM and PwC addressed to social leaders, both male and female. In the course of this mentoring, the knowledge of the mentees was developed regarding management techniques typical of the business world.

Mentoring programs may be dedicated to specific categories of employees, but they are sometimes also addressed to a nonprofit organization as a whole. In that case, the use of mentoring does not only serve the development of the competences of specific staff members, but is a form of development of an entire third-sector entity. This approach is of a strategic nature and constitutes a type of intervention at meso-structural level.

5.4. Mentoring aimed at the professionalization of a nonprofit organization

The role of nonprofit organizations is being redefined today. Among other things, their importance in the institutional system of social services is rising, prompting increased pressure from key stakeholders (government agencies, private donors) so that the entities in question adopt effective performance standards, and on the other hand increased competition between nonprofits themselves. Institutional change may lead third-sector organizations to adopt two main strategies of action (Sanzo-Perez et al., 2017): professionalization, or partnership with the business sector.

Going beyond reactive action and moving away from the current administration to pro-development management is becoming a precondition for the survival of third-sector organizations in the changing environment. As a result, the professionalization of nonprofits is being increasingly discussed in the literature. Some researchers identify this term with professionalism, while others with the adoption of business orientation and the adaptation of managerial practices (Cumming, 2008; cf.: Dobrai and Farkas, 2016; Hwang and Powell, 2009; Pope et al., 2018; Stankiewicz and Seiler, 2013). According to Kafel (2014, pp. 103-104), these approaches may be partially reconciled, as professionalization is linked with the postulate of building a professional nonprofit organization. It can be focused on a person and refer to the pattern of professional roles, or be organization-oriented and characterize the resources, processes and capabilities of the entity as a whole. With this assumption, organizational professionalism stems directly from the professionalism of employees.

Participation in mentoring is not only an opportunity for the personal development of employees of the third sector, but also a form of the intra-organizational diffusion of patterns of a modern approach to social management. The literature notes that training contributes to the dissemination of professionalization among nonprofit entities (Hwang and Powell, 2009; Carvalho et al., 2016). This is a manifestation of normative isomorphism (DiMaggio and Powell, 1983), associated with the sharing of certain beliefs by professionals from various organizations.

Training, including mentoring, is an opportunity to spread specific cultural patterns in the third sector, seen as manifestations of professionalism (e.g. standards of rationality or pragmatism) (cf. Stankiewicz and Seiler, 2013). In the analysis of the websites, examples of Polish mentoring programs were identified, in which mentoring was a tool for building a professional nonprofit organization. In such cases, the explicitly formulated offerings emphasized the technique's effectiveness in this area. The implemented activities were to be an element of a strategic, intentional approach to the professionalization of the entities in question. The mentoring was carried out by raising professionalism among employees, but at the same time it was geared towards increasing the durability and independence of the organization as a whole. Such programs were implemented, among other organizations, by the Krakowskie Forum Organizacji Społecznych KraFOS, the Europejskie Stowarzyszenie Edukacji i Rozwoju

'Pionier', Fundacja Pokolenia, and Fundacja Biuro Inicjatyw Społecznych. Additionally, participation in a mentoring program was offered by Fundacja Impossible (Table 4), which would rationalize the functioning of a nonprofit entity by increasing the professionalism of its staff.

Programs addressed to representatives of third-sector entities expressing interest in economizing activities of their organization and seeking alternative ways of financing the implementation of statutory objectives were also identified. Examples include: the Mentors4GdańskNGOs program offered by the Mentors' Forum "AHA EFECT", or the "Economization of NGOs" project put forward by the Centrum Wspierania Organizacji Pozarządowych Sektor 3[18].

Table 4.
Examples of Polish nonprofit organizations oriented to the professionalization of third-sector entities

Organization name	Mentoring program goal
Krakowskie Forum Organizacji Społecznych KraFOS	Support representatives of the third sector who want to become independent (i.e. professionalize) their organizations. Mentors focused on formal, legal, financial, organizational and strategic issues related to cross-sectoral cooperation and volunteering, etc.
Europejskie Stowarzyszenie Edukacji i Rozwoju 'Pionier'	Legal mentoring concerning the organization of obligatory statutory meetings, carrying out board changes, setting up business within NGOs, raising external funds, etc.
Fundacja Pokolenia	Empower and increase the effectiveness and outreach of informal groups and non-governmental organizations. Offer support in working out solutions based on available potential and resources.
Fundacja Biuro Inicjatyw Społecznych	Educational, consultative and socially mobilizing assistance. Mentoring directed at supporting organizations in achieving their goals.
Fundacja Impossible	Assistance in achieving objectives according to the scheme: 1. Analysis of health (situation in which the organization finds itself), 2. Prescription (defining the areas in which the intervention will bring the most benefits), 3. First-aid kit (establishing relationships with professionals providing solutions and offering advice), 4. A follow-up visit (observation of the first effects of changes, support).
Forum Mentorów "AHA EFFECT"	Support for nonprofit leaders who are interested in economizing their organization by participating in a training and consulting program offered by business mentors.
Centrum Wspierania Organizacji Pozarządowych Sektor 3	Assistance provided by a business mentor to a representative of a nonprofit organization in the development of a plan to acquire new sources of financing for the organization.

Source: own study based on: https://co.krakow.pl/strona_glowna/208400, artykul,mentoring.html; http://www.ngo.olsztyn.eu/index.php/ogloszenia–organizacji/331–bezpatny–mentoring–dla–organizacji–pozarzdowych?font=big; http://fundacjapokolenia.pl/aktywnosc–obywatelska/; http://bis–krakow.pl; http://impossible.org.pl/projekty/mentoring/; http://forum–mentorow.pl/programy/.

A professional nonprofit organization should, by definition, try to effectively achieve the objectives it has outlined for itself. The use of mentoring to improve the efficiency of an organization can indirectly contribute to a more effective solving of social problems. However, it is also possible to use mentoring with a view to directly achieving objectives in the social dimension.

---

[18] Activities focused on raising the professionalism of nonprofit organizations are particularly important in countries where the third sector is relatively weaker, e.g. in Central and Eastern Europe (cf. Gliński 2006).

5.5. Mentoring to achieve social goals

Nonprofit organizations start as a result of a grassroots, civic initiative to help resolve social problems in a situation where the state and the market are failing to do so. Such organizations work in the fields of education, social care, health care, culture, sport etc., adopting a self-help orientation aimed at supporting their own members or service orientation directed at activities in the interest of external clients. It could be argued that mentoring can be a tool helpful in achieving social goals in various fields, regardless of the orientation adopted by a nonprofit organization. Such cases were also identified in Poland (Table 5).

Table 5.
Examples of Polish nonprofit organizations that use mentoring to achieve social goals

Organization name	Mentoring program goal
Polsko-Amerykańska Fundacja Wolności, Towarzystwo Inicjatyw Twórczych "ę", Stowarzyszenie Przestrzeń Inicjatyw Społeczno-Kulturalnych PISK, Fundacja Joanny Radziwiłł Opiekuńcze Skrzydła	Forging intergenerational bonds. People 55+ shared their life experience with children, who in return made them familiar with technological novelties and drew attention to what the younger generation finds important.
Erasmus Student Network Polska	Supporting the acclimatization of people coming to Poland as part of student exchange.
Fundacja na rzecz Collegium Polonicum	Assistance for unemployed people aged 25 or less, who are planning to enter the labor market and are planning a path of career development.
Stowarzyszenie Innowacji Społecznych "Mary i Max", Fundacja ALPHA and Krajowe Towarzystwo Autyzmu, branch in Łódź	Friendship volunteering oriented towards supporting people with autism and Asperger's syndrome. Due to mentoring, these people gained self-confidence in interpersonal relationships and more actively participated in social and cultural life, etc.
Stowarzyszenie Centrum Promocji Ekorozwoju	Education of people who will implement the principles of sustainable development in their environment. A series of training sessions were offered (on sustainable development, project management and interpersonal skills) and mentoring as part of the Inkubator Ekopomysłów initative.
Stowarzyszenie Sursum Corda and Centrum Wspierania Rodzin "Rodzinna Warszawa"	Assistance offered to children from incomplete families, deprived of contact with the family, on the part of "big brothers and big sisters" who disseminate positive examples among them by spending time together.
Centrum Wsparcia Imigrantów i Imigrantek	Help for refugees in adapting in Poland (sharing knowledge, ideas, contacts, learning how to move around the city, showing important places, learning a language, etc.)

Source: own study based on: http://seniorzywakcji.pl/utw–dla–spolecznosci/; https://www.esn.pl/pl/ czym–jest–erasmus–student–network–polska; https://centrumwspieraniarodzin. pl/aktualnosci/180– starszy–brat–starsza–siostra; http://www.sc.org.pl/projekty/starszybratstarsza siostra/misjaprogramu/; http://lubuskimentoring.pl/; https://wolontariatkolezenski.pl/o–projekcie/mentoring/; http://cpe.info.pl; https://centrumwspieraniarodzin.pl/aktualnosci/180–starszy–brat–starsza–siostra; https://www.facebook.com/events/813829075397907/; https://www.gdansk.pl/ wiadomosci/uchodzcy– wolontariusz–pomoze–blizniemu,a,43324.

Nonprofit organizations are also active in the area of business support and stimulation of economic development. Their objectives can be of a social nature, carried out by helping particular groups of citizens in setting up and running their own business, for example. In the course of the research, examples of mentoring in this area were identified (Table 6).

Table 6.
Examples of Polish nonprofit organizations using mentoring in the diffusion of knowledge from the third sector to the business sector

Organization name	Mentoring program goal
Fundacji Przedsiębiorczości Kobiet	Business mentoring addressed to enterprising women entering the business world. Mentors, active businesswomen, shared knowledge and experience, helped in the development of business concepts.
Fundacja Liderek Biznesu	Support for representatives of non-governmental organizations by business leaders in the implementation of their professional goals, a conscious shaping of their careers, developing critical self-awareness and improving leadership skills.
Fundacja Mentors4Starters	Help people who want to launch and develop their own businesses, shape their careers in corporate structures, as well as those who act voluntarily and implement social projects.
Odpowiedzialni.pl	Promoting entrepreneurship and innovation; creating and developing SMEs, improving cooperation with administration and other organizations in order to create a common ground for development activities; popularizing knowledge in the field of insurance among the public, propagating knowledge about new technologies, etc.
Fundacja Inkubator Technologiczny	Support for entrepreneurs in the field of: setting up a company and creating valuable products and services, preparing a marketing strategy, developing a business model and assessing the investment potential of a startup and raising funds for social activities.

Source: own study based on: http://www.entertheroom.pl/life/22–wywiady/7004–wywiad–fundacja–przedsiebiorczosci–kobiet; https://www.fundacjaliderekbiznesu.pl; http://mentors4starters.pl/o–programie/; http://www.odpowiedzialni.pl/; http://ybp.org.pl.

These types of activities were carried out as part of cross-sectoral exchange. A number of the third-sector organizations in this study organized mentoring programs addressed to company representatives and enabled the development of practical business skills.

6. Mentoring in Polish nonprofit organizations – exemplification based on interview results

Having analyzed the content of the websites, it was found that mentoring is used in Polish nonprofit entities not only to achieve their statutory objectives, but also to develop the staff and professionalization of the entire organization. Further exploration of the issue was provided by an interview carried out in one of the 26 surveyed Polish organizations, with a representative of the foundation from the Pomeranian region. The organization operates in three main fields: social assistance, civic activity and social economy. It runs, among other things, an entrepreneurship incubator for a nonprofit organization whose aim is to empower informal groups, third-sector entities, and improve the efficiency of their operations and expand the

scope of their activities. The mentor, with whom they collaborate on their development, takes care of the incubated group/organization. Additionally, in the incubation process, the organization uses the services of mandatory legal and formal advice.

Retracing the interview, two editions of the mentoring program were organized in the organization. The first one lasted six months, and the second - twelve months. A total of sixteen nonprofit organizations participated in these programs, which were looked after by ten mentors.

According to the key informants, mentoring in nonprofit organizations can be applied to all categories of employees: managers, members, volunteers and paid employees. They suggested that mentoring proves particularly useful in the process of the development of managerial skills, as it is there where it creates the greatest opportunity for the professionalization of a third-sector organization. One respondent reported that, in their work with nonprofit leaders, it was essential to systematize their knowledge in the fields of formal and legal aspects, planning and settlement of projects, gaining financial resources, image shaping, marketing, cooperation with volunteers, etc. At the same time, many stressed that, in the case of leaders of nonprofit organizations, it is particularly important to provide them with *mental support* and to boost their *self-confidence*, since they often have no managerial skills and are therefore apprehensive and diffident. Overcoming psychological barriers with the mentor's help was helpful, including in initiating economic activity, and thus in obtaining economic stability and independence by organizations.

The key informant also pointed to barriers to the use of mentoring in nonprofit organizations. They emphasized that in the face of *multi-tasking and multiple roles in the organization*, their employees simply did not have enough time to participate in mentoring. This translated into *lesser involvement in the mentoring process*. In addition, issues also arose due to frequent changes in the organization's objectives, depending on the sources of financing for current operations. As a consequence, as the interviewer stated, mentoring in nonprofit entities is *difficult to plan and interrupted by current problems*.

7. Conclusions

The conclusions from this research show that the use of mentoring in the third sector can serve to transfer knowledge from the environment to a nonprofit organization, and vice versa. This transfer can be internal or cross-sectoral. In the first case, it occurs within the third sector, while in the second case it takes place between sectors. Mentoring, as a tool for transferring knowledge to nonprofit organizations, can also favor the development of the competence among staff, managers, employees and volunteers, as well as help improve the efficiency and professionalization of the entire organization. Knowledge can also be transferred by nonprofit

organizations themselves. Mentoring can be helpful in achieving statutory objectives, both in the social (within the sector) and the business context (cross-sectoral) (Table 7).

Table 7.
Directions of knowledge transfer and fields of using intra-sectoral and cross-sectoral mentoring in nonprofit organizations

Direction of knowledge transfer using mentoring	Fields in which mentoring was used	Intra-sectoral	Cross-sectoral
Transfer of knowledge to nonprofit organization	Development of competences of nonprofit organizations employees	Employees of the third sector are mentors to employees of nonprofit organizations, and the relationship is based on experiences from the functioning of the third sector.	Employees of enterprises are mentors to employees of nonprofit organizations, and the relationship is based on experiences from the business sector.
	Professionalization of nonprofit organizations	Mentors from the third sector disseminate their knowledge and experience in nonprofit organizations in order to professionalize them.	Business mentors disseminate knowledge and experience in nonprofit organizations in order to professionalize them.
Transfer of knowledge from nonprofit organization	Implementation of statutory objectives (nonprofit organizations)	Mentors from the third sector implement statutory social objectives, e.g. by working with the unemployed, the disabled, youth, etc.	Mentors from the third sector implement statutory business objectives, e.g. by supporting people running their own business.

Source: own study.

Mentoring applied to employees of nonprofit organizations can serve various functions. When addressed to young volunteers, it can be a means for those people to implement plans related to their professional life. Participation in mentoring can be an opportunity to learn about oneself and get to know oneself better, but it is also used to develop skills useful in the labor market. Mentoring addressed to the managerial staff may serve the development of the entire organization to a greater extent. In this context, it becomes an organization's tool for professionalization. Mentoring used in this area is characterized by an intentional approach to improving the sustainability of nonprofit organizations. Its application is of a strategic nature. Professionalization takes place by raising professionalism among staff, but what it truly intends is to raise the standards of the entire organization, and consequently, to contribute to its durability and stability. This application of mentoring is of vital importance for Polish nonprofit organizations, due to their relative weakness and young market age. However, implementation of mentoring also encounters certain barriers related to the specific nature of the activities of third-sector entities. The main such obstacles include problems arising from limited financial (e.g. problems with allocating funds for administrative costs, including training costs), organizational (e.g. difficulties related to the coordination of accessibility of social workers and mentors), psychological (e.g. managers' concerns related to self-perceived lack of managerial skills) capacity. In this article, it is argued that the implementation of mentoring in nonprofit entities should also take into account their relatively low level of formalization and bureaucracy.

The presented study is exploratory and does not allow for drawing far-reaching generalizations of the obtained findings. There are few publications on this issue, thus the obtained results may be the basis for further in-depth analyzes of the use of mentoring in nonprofit entities regarding its effectiveness in particular areas, as well as the relationships between various areas.

References

1. Abbe, A., Gulick, L., Herman, J. (2007). *Cross–cultural competence in army leaders: A conceptual and empirical foundation (Study Report, No. 2008-01).* Retrieved from https://apps.dtic.mil/dtic/tr/fulltext/u2/a476072.pdf, 20.12.2018.

2. Adamiak, P., Charycka, B, Gumkowska, M. (2016). *Kondycja sektora organizacji pozarządowych w Polsce 2015.* Warszawa: Stowarzyszenie Klon/Jawor.

3. *Akademia wolontariatu. Oferta.* Available online https://efs.teb.pl/aw/wsparcie, 15.12.2018.

4. *Aktualności – Mentoring.* Available online http://lubuskimentoring.pl/, 21.12.2018.

5. *Aktywność Obywatelska – Fundacja Pokolenia.* Available online http://fundacjapokolenia. pl/aktywnosc–obywatelska/, 20.12.2018.

6. Alatrista J., Arrowsmith, J. (2004). Managing employee commitment in the not–for–profit sector. *Personnel Review, 33*, 536-548, doi: 10.1108/00483480410550143.

7. Anheier, H.K. (2005). *Nonprofit organizations. Theory, management, policy.* London and New York: Routledge.

8. Antal, A.B. (1993). Odysseus' legacy to management development: mentoring, *European Management Journal, 11(4),* 448-454, Retrieved from https://www.researchgate.net/ publication/263124863_Odysseus%27_legacy_to_management_development_Mentoring, 20.06.2019.

9. Babbie, E. (2008). *The Basics of Social Research.* Belmont: Thomson/Wadsworth.

10. Baran, M. (2017). The Importance of Mentoring in Employee Work Engagement – based on research of company employees in Poland. *International Journal of Contemporary Management, 16, 2,* 33-56, doi: 0.4467/24498939IJCM.17.009.7522.

11. Beltman, S., Schaeben, M. (2012). Institution–wide peer mentoring: Benefits for mentors. *The International Journal of the First Year in Higher Education, 3(2), 2,* 33-44. Retrieved from http://fyhejournal.com/article/view/124, 05.05.2019.

12. *Bezpłatny mentoring dla organizacji pozarządowych – ngo.* Available online http://www.ngo.olsztyn.eu/index.php/ogloszenia–organizacji/331–bezpatny–mentoring– dla–organizacji–pozarzdowych?font=big, 20.12.2018.

13. *BIS Biuro Inicjatyw Społecznych.* Available online http://bis–krakow.pl, 20.12.2018.

14. Bogacz-Wojtanowska, E. (2009). Zatrudnienie w trzecim sektorze: możliwości i perspektywy. In E. Bogacz-Wojtanowska, and M. Rymsza (Eds.), *Nie tylko społecznie. Zatrudnienie i wolontariat w organizacjach pozarządowych* (pp. 15-25). Warsaw: ISP.

15. Bogdanova, M. (2008). Cross–national mentoring NGOs in transition societies: field research and developments in Bulgaria. *Journal of Business Economics and Management*, *9, 4,* 145-154, doi: 10.3846/1611-1699.2008.9.145-154.

16. Bortnowska, H., Seiler, B. (2019), Formal mentoring in nonprofit organizations. Model proposition. *Management, 23, 1,* 188-208, doi: 10.2478/manment-2019-0011.

17. Bradshaw, L.D. (2003). Human Resource Management in Nonprofit Organizations. *Review of Public Personnel Administration, 23,* 91-96, doi:10.1177/0734371X03023002001.

18. Brewerton, A. (2002). Mentoring. *Liber Quarterly*, *12,* 361-380. Retrieved from https://www.liberquarterly.eu/articles/10.18352/lq.../download/, 12.03.2017.

19. Bronznick, S., Goldenhar, D. (2009). Flexibility and More Mentors Will Expand the Number of Female Nonprofit CEO's*, Chronicle of Philanthropy, T. 22, 3,* 39. Retrieved from advancingwomen.org, 13.04.2017.

20. Camargo, B.V., Justo, A.M. (2013). IRAMUTEQ: un software libre para el análisis de datos textuales. *Temas em Psicologia, 21, 2*, 513-518, doi: 10.9788/TP2013.2-16.

21. Carvalho, A., Melo, S., Ferreira, A.P. (2016). Training in Portuguese non–profit organizations: the quest towards professionalization. *International Journal of Training and Development, 20, 1,* 78-91, doi: 10.1111/ijtd.12070.

22. Clutterbuck, D. (2002). *Każdy potrzebuje mentora. Jak kierować talentami.* Warszawa: Petit.

23. Codreanu, A. (2012). *Mentoring as an in–house program in Romanian non–profit establishments some challenges and opportunities.* Desence Resources Management in the 21st Century. The 7th scientific conference with international attendance organized by the Regional Department of Defense Resources Management Studies. November 15th, 2012, Braşov. Retrieved from http://www.codrm.eu/conferences/2012/67_Codreanu.pdf, 12.03.2017.

24. *CPE – Centrum Promocji Ekorozwoju Aktualności Archives – CPE ...* Available online http://cpe.info.pl, 21.12.2018.

25. Cumming, G.D. (2008). French NGOs in the global era: professionalization "Without Borders"? *Voluntas*, *19, 4*, 372-394, doi: 10.1007/s11266-008-9069-5.

26. Czakon, W. (2011). Metodyka systematycznego przeglądu literatury. *Przegląd Organizacji, 3,* 57-61. Retrieved from https://www.researchgate.net/publication/321977541_Metodyka_systematycznego_przegladu_literatury, 12.05.2018.

27. *Czym jest Erasmus Student Network Polska? ESN Polska.* Available online https://www.esn.pl/pl/czym–jest–erasmus–student–network–polska, 21.12.2018.

28. DiMaggio, P.J., Powell, W.W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review, 48(2),*

147-160.   Retrieved   from   https://www.researchgate.net/publication/224892279_ %27The_Iron_Cage_Revisited_Isomorphism_in_Organizational_Fields%27, 13.05.2018.

29. Dobrai, K., Farkas, F. (2016). Nonprofit organizations from the perspective of organizational development and their influence on professionalization. *Nase Gospodarstvo/ Our economy, 62, 2,* 25-32, doi: 10.1515/ngoe-2016-0009.

30. *Dwa sektory – jedna wizja. Coaching z PwC dla liderów społecznych ...* Available online https://tuwiazowna.pl/sektory–jedna–wizja–coaching–pwc–dla–liderow–spolecznych/, 19.12.2018.

31. *EBSCO – Biblioteka Uniwersytetu Zielonogórskiego.* Available online: http://www.bu.uz.zgora.pl/index.php/pl/e–zbiory/eds, 06.12.2018.

32. Ehrich, L., Hansford, B. (1999). Mentoring: Pros and cons for HRM. *Asia Pacific Journal of Human Resources, 37(3)*, 92-107, doi: 10.1177/103841119903700307.

33. Engelbrecht, L.K. (2012). Coaching, Mentoring and Consultation: The Same but Different Activities in Supervision of Social Workers in South Africa? *Social Work, 48(3),* 357-368, doi: 10.15270/48-3-90.

34. *Forum Mentorów – Krzewimy kulturę mentoringu, profesjonalizujemy ...* Available online http://forum–mentorow.pl/programy/, 20.12.2018.

35. Frankfort-Nachmias, Ch., Nachmias, D., DeWaard, J. (2015). *Research Methods in the Social Sciences.* New York: NY Worth Publishers, a Macmillan Education Company.

36. Fudaliński, J. (2013). *Perspektywy rozwoju zarządzania społecznego w sektorze organizacji non profit w Polsce.* Warszawa: Difin.

37. Garner, J., Garner, L. (2010). Volunteering an Opinion: Organizational Voice and Volunteer Retention in Nonprofit Organizations. *Nonprofit and Voluntary Sector Quarterly, 40,* 1-16, doi: 10.1177/0899764010366181.

38. Garvey, B., Garrett-Harris, R. (2008). *The Benefits of Mentoring: a literature review.* Sheffield: Sheffield Hallam University.

39. Glińska-Neweś, A. Escher, I. (2018). Analiza treści w badaniach zjawisk społecznych w organizacji: zastosowanie programu IRAMUTEQ. *Studia Oeconomica Posnaniensia, 6, 3,* 73-94, doi: 10.18559/SOEP.2018.3.4.

40. Gliński, P. (2006). The Third Sector in Poland. Dilemmas of Development. In D. Gawin, and P. Gliński (Eds.), *Civil Society in the Making* (pp. 265-291)*.* Warsaw: IFiS Publishers.

41. *Google Scholar.* Available online: https://scholar.google.pl

42. *Google,* Available online www.google.com, 06.12.2018.

43. Grzegorczyk, W. (2015). Studium przypadku jako metoda badawcza i dydaktyczna w naukach o zarządzaniu. In W. Grzegorczyk (Ed.), *Wybrane problemy zarządzania i finansów. Studia przypadków* (pp. 9-16). Łódź: Wydawnictwo Uniwersytetu Łódzkiego.

44. Grzybowski, P. (2014). *Podstawy krytycznego przeglądu literatury,* 1-3. Retrieved from https://grzybowski.ukw.edu.pl/download/16575/Grzybowski_-_Podstawy_krytycznego_ przegladu_literatury.pdf, 05.05.2017.

45. Guryn, H. (2013). Mentoring – tajniki skutecznej realizacji. Interview with G. Gambande, Vice-president of European Mentoring & Coaching Council. *Personel Plus*, *9,* 16-17.

46. Hafford-Letchfield, T., Chick, N. (2006). Talking across purposes: the benefits of an interagency mentoring scheme for managers working in health and social care settings in the UK. *Work Based Learning in Primary Care, 4*, 13-24. Retrieved from https://www.researchgate.net/publication/233647443_Talking_across_purposes_The_ben efits_of_an_interagency_mentoring_scheme_for_managers_working_in_health_and_soci al_care_settings_in_the_UK, 17.06.2018.

47. Hall, J.C. (2003). *Mentoring and Young People. A literature review.* Glasgow: The SCRE Centre, University of Glasgow.

48. Hwang, H., Powell, W.W. (2009). The rationalization of charity: the influences of professionalism in the nonprofit sector. *Administrative Science Quarterly, 54,* 268-298, doi: 10.2189/asqu.2009.54.2.268.

49. Inzer, L., Crawford, C.B. (2005). A Review of Formal and Informal Mentoring: Processes, Problems, and Design. *Journal of Leadership Education, 4, 1,* 31-50, doi: 10.12806/ V4/I1/TF2.

50. Jyoti, J., Sharma, P. (2017). Empirical investigation of a moderating and mediating variable in between mentoring and job performance: A structural model. *Journal of Work and Organizational Psychology, 33*, 55-67, doi: 10.1016/j.rpto.2017.01.002.

51. Kafel, T. (2014). *Metody profesjonalizacji organizacji pozarządowych,* Kraków: Wydawnictwo Uniwersytetu Ekonomicznego.

52. Luecke, R. (2006). *Coaching i mentoring. Jak rozwijać największe talenty i osiągać lepsze wyniki.* Warszawa: MT Biznes.

53. Mazur, K. (2008). Mentoring jako narzędzie kształtowania kompetencji (komunikat ze studiów nad literaturą). In S. Witkowski, and T. Listwan (Eds.), *Kompetencje a sukces zarządzania organizacją* (pp. 109-117). Warszawa: Difin.

54. McGeorge, C., Stone-Carlson, T. (2010). Social Justice Mentoring: Preparing Family Therapists for Social Justice Advocacy Work. *Michigan Family Review, 14*, 42-59. Retrieved   from: https://quod.lib.umich.edu/.../social-justice-mentoring-preparing, 01.11.2018.

55. *Mentoring NGO – Fundacja Impossible.* Available online http://impossible.org.pl/ projekty/mentoring/, 20.12.2018.

56. *Mentoring w Centrum Obywatelskim – Centrum Obywatelskie.* Available online https://co.krakow.pl/strona_glowna/208400,artykul,mentoring.html, 20.12.2018.

57. *Mentors4starters: M4S.*   Available   online   http://mentors4starters.pl/o–programie/, 18.12.2018.

58. *Mentorzy dla zagranicznych wolontariuszy poszukiwani! – Fundacja CAT.* Available online http://fundacja–cat.pl/news/w–94/mentorzy–dla–zagranicznych–wolontariuszy– poszukiwani, 15.12.2108.

59. Mesjasz, J. (2013). Bariery i ograniczenia mentoringu w polskich organizacjach. *Forum Oświatowe, 2,* 73-88. Retrieved from http://forumoswiatowe.pl/index.php/czasopismo/ article/view/41, 23.04.2017.

60. *MIND.TS Fundacja Umbrella.* Available online http://fundacja–umbrella.org.pl/ portfolios/mind–ts/, 15.12.2018.

61. *Misja programu Starszy Brat Starsza Siostra.* Available online http://www.sc.org.pl/ projekty/starszybratstarszasiostra/misjaprogramu/, 21.12.2018.

62. Momoh, G.T., Oluwasanu, M.M., Oduola, O.L., Delano, G.E., Ladipo, O.A. (2015). Outcome of a reproductive health advocacy mentoring intervention for staff of selected, non–governmental organisations in Nigeria. *Health Services Research, 15, 1*, 1-9, doi: 10.1186/s12913-015-0975-0.

63. Myjak, T. (2016). Rozwijanie potencjału pracowników poprzez mentoring w organizacji opartej na wiedzy. *Roczniki Ekonomii i Zarządzania, T. 8, 2,* 137-149, doi: 10.18290/ reiz.2016.8(44).2-8.

64. *Najważniejsze wiadomości ngo.pl.* Available online http://warszawa.ngo.pl/wiadomosc/ 661205.html, 17.12.2018.

65. Neupane, R. (2015). Effects of coaching and mentoring on employee performance in the UK hotel industry. *International Journal of Social Sciences and Management, 2, 2,* 123-138, doi:10.3126/ijssm.v2i2.12323.

66. Nyamori, S. (2015). *The effect of workplace mentoring on employee performance: a case study of SOS Children's Villages.* United States International University Africa. Retrieved from http://erepo.usiu.ac.ke/11732/1487, 01.12.2018.

67. *O Programie Mentoringowym. Fundacja Liderek Biznesu.* Available online https://www.fundacjaliderekbiznesu.pl, 18.12.2018.

68. *Oferta dla NGO – Regionalne Centrum Wolontariatu w Kielcach.* Available online http://centrumwolontariatu.eu/oferta–dla–ngo/, 16.12.2018.

69. Peace, N., Ofobruku, S. (2015). Effects of Mentoring on Employees' Performance in Selected Family Business in Abuja, Nigeria. *Singaporean Journal of Business Economics and Management Studies*, *4,* 29-50, doi: 10.12816/0019684.

70. Phillips, H., Phillips, C. (2010). Volunteer Motivation and Reward Preference: An Empirical Study of Volunteerism in a Large, Not–for–profit Organization. *Advanced Management Journal*, *Autumn*, 12-40. Retrieved from https://www.researchgate.net/ profile/Radha_Iyer4/post/Students_volunteering/attachment/59d64f7979197b80779a89ba/ AS:497876854939648@1495714500065/download/Volunteer+Motivation+and+Reward. pdf, 23.10.2018.

71. Phillips-Jones, L. (2003). *Skills for successful mentoring: competencies of outstanding mentors and mentees.* Retrieved from http://my.lerner.udel.edu/wp–content/uploads/ Skills_for_Sucessful_Mentoring.pdf, 10.08.2017.

72. Pope, S., Bromley, P., Lim, A., Meyer, J.W. (2018). The pyramid of nonprofit responsibility: the institutionalization of organizational responsibility across sectors. *Voluntas*, *29*, 1-15, doi:10.1007/s11266-018-0038-3.

73. Rhodes, J., Lowe, S. (2008). Youth Mentoring and Resilience: Implications for Practice. *Child Care in Practice*, *14, 1,* 9-17, doi: 10.1080/13575270701733666.

74. Rube, K., Veatch, M., Huang, K., Sacks, R., Lent, M., Goldstein, G., Lee, K. (2014). Developing built environment programs in local health departments: lessons learned from a nationwide mentoring program. *Am J Public Health*, *May, 104,* 10-18, doi: 10.2105/ AJPH.2013.301863.

75. Safi, A., Burrell, D.N. (2007). The role of mentoring in succession planning and talent in non-profit and governmental organizations. *International Journal of Business and Management, 2, 5*, 167-173. Retrieved from www.academia.edu/download/30972863/ 10.1.1.123.8970.pdf#page=168, 24.05.2018.

76. Salamon, L.M., Anheier, H.K. (1997). *Defining the nonprofit sector. A cross–national analysis.* Manchester and New York: Manchester University Press.

77. Sanzo-Perez, M.J., Rey-Garcia, M., Alvarez-Gonzalez, L.I. (2017). The drivers of voluntary transparency in nonprofits: professionalization and partnerships with firms as determinants. *Voluntas*, *28*, 112-123, doi: 10.1016/j.brq.2017.01.001.

78. *Ścieżka dla mentorów – Wolontariat Koleżeński.* Available online https://wolontariat kolezenski.pl/o–projekcie/mentoring/, 21.12.2018.

79. Silverman, D. (2011). *Interpreting Qualitative Data.* London: Sage

80. Simkins, T., Coldwell, M., Caillau, I., Finlayson, H., and Morgan, A. (2006). Coaching as an in- school leadership development strategy: experiences from Leading from the Middle. *Journal of In-Service Education, 32, 3*, 321-340, doi: 10.1080/13674580600841901.

81. Smith, W.J., Howard, J.T., Harrington, K.V. (2005). Essential Formal Mentor Characteristics and Functions in Governmental and Non-Governmental Organizations from the Program Administrator's and the Mentor's Perspective. *Public Personnel Management, 34, 1,* 31-58, doi: 10.1177/009102600503400103.

82. Stankiewicz, J., Bortnowska, H. (2016). Intermentoring as a technique of sharing knowledge by employees of different generations (in light of the research results). *Education of Economists and Managers*, *4,* 47-62, doi: 10.5604/01.3001.0009.5495.

83. Stankiewicz, J., Bortnowska, H., Seiler, B. (2016). The chances of successful recruitment of volunteers among management students (in the light of empirical research). *Management, 20, 2*, 415-427, doi: 10.1515/manment-2015-0072.

84. Stankiewicz, J., Bortnowska, H., Seiler, B. (2018). Wzbudzanie i rozwijanie zaangażowania wolontariuszy w organizacjach non profit poprzez mentoring. *Organizacja i Kierowanie*, *4,* 11-35. Retrieved from http://kolegia.sgh.waw.pl/pl/KZiF/czasopisma/oik/numery/ Documents/2018_4_183/stankiewicz_bortnowska_seiler_wzbudzanie_i_rozwijanie_zaang azowania_wolontariuszy_w_organizacjach_non_profit.pdf, 20.06.2018.

85. Stankiewicz, J., Moczulska, M., Seiler, B. (2018). Conditions and nature of coopetition of for–profit and non–profit organizations. In A. Nalepka, and A. Ujwary-Gil (Eds.), *Business and non–profit organizations facing increased competition and growing customers' demands, proceedings of the 17th Conference of Scientists and Business People* (pp. 111-126). Tomaszowice (Poland). Nowy Targ: Foundation for the Dissemination of Knowledge and Science "Cognitione". Retrieved from konferencja.jemi.edu.pl/files/monografia_vol17.pdf, 20.09.2018.

86. Stankiewicz, J., Seiler, B. (2013). Profesjonalizacja, jako czynnik sukcesu polskich organizacji pozarządowych. *Journal of Management and Finance, 11, 4, 2,* 341-353. Retrieved from jmf.wzr.pl/pim/2013_4_2_27.pdf, 21.05.2018.

87. *Starszy brat starsza siostra – Centrum Wspierania Rodzin Rodzinna ...* Available online https://centrumwspieraniarodzin.pl/aktualnosci/180–starszy–brat–starsza–siostra, 21.12.2018.

88. *Stowarzyszenie Odpowiedzialni.pl – Strona Główna.* Available online http://www.odpowiedzialni.pl/, 18.12.2018.

89. *Szkolenia o wolontariacie i mentoring dla Kulturalnych NGO.* Available online http://rokoko.org.pl/szkolenia–o–wolontariacie–i–mentoring–dla–kulturalnych–ngo/, 16.12.2018.

90. Tewari, R., Sharma, R. (2014). Mentoring for Effective Positive Workforce: A Case Study. *Global Journal of Finance and Management*, *6, 1,* 79-88. Retrieved from https://www.ripublication.com/gjfm-spl/gjfmv6n1_14.pdf, 15.04.2017.

91. Thompson, A., Greeson, J., Brunsink, A. (2016). Natural mentoring among older youth in and aging out of foster care: A systematic review. *Children and Youth Services Review*, *61,* 40-50, doi: 10.1016/j.childyouth.2015.12.006.

92. *Uchodźcy. Wolontariusz pomoże bliźniemu – Gdańsk.* Available online https://www.gdansk.pl/wiadomosci/uchodzcy–wolontariusz–pomoze–blizniemu,a,43324, 30.12.2018.

93. Underhill, Ch. (2006). The effectiveness of mentoring programs in corporate settings: A meta-analytical review of the literature. *Journal of Vocational Behaviour, 68, 2,* 292-307. Retrieved from isiarticles.com/bundles/Article/pre/pdf/8347.pdf, 21.06.2019.

94. *UTW dla społeczności – Seniorzy w akcji.* Available online http://seniorzywakcji.pl/utw–dla–spolecznosci/, 21.12.2018.

95. Wanberg, C.R., Welsh, E.T., Hezlett, S.A. (2003). Mentoring research: A review and dynamic process model. *Research in Personnel and Human Resources Management, 22*, 39-124, doi: 10.1016/s0742-7301(03)22002-8.

96. Washington, D. (2011). Mentoring and career progression in the nonprofit sector. *Leadership & Organizational Management Journal*, *1,* 50-62. Retrieved from https://web.b.ebscohost.com, 24.03.2018.

97. Wymer, W. Jr., Starnes, B. (2001). Conceptual Foundations and Practical Guidelines for Recruiting Volunteers to Serve in Local Non–profit organizations: Part I. *Journal of Nonprofit & Public Sector Marketing, 9,* 97-118, doi: 10.1300/J054v09n01_06.

98. *Wywiad: Fundacja Przedsiębiorczości Kobiet – G'rls Room.* Available online http://www.entertheroom.pl/life/22–wywiady/7004–wywiad–fundacja–przedsiebiorczosci–kobiet, 18.12.2018.

99. *Youth Business Poland – Fundacja Rozwoju Przedsiębiorczości.* Available online http://ybp.org.pl, 18.12.2018.

100. *Zostań mentorem uchodźcy – szukamy wolontariuszy! – Facebook.* Available online https://www.facebook.com/events/813829075397907/, 30.12.2018.