

INNOVATIONS IN POLISH ENTERPRISES IN CRISIS CONDITIONS

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Purpose: It is widely acknowledged that innovation is key to increasing company productivity. In times of pandemic crisis, the severe economic situation caused by COVID-19 has led to an increased focus by companies on innovations, particularly in processes and organizational structures. The topic of innovation in enterprises during crises is extremely important, as it makes entrepreneurs aware of the significance of utilizing innovation, especially in times such as the COVID-19 crisis. Due to the pandemic, innovative solutions and new ways of organizing work and management have been implemented in enterprises, all of which have been influenced by mass redundancies and forced isolation. By introducing previously unknown solutions, companies hope to survive in the market under crisis conditions. The aim of this study is to demonstrate the importance of introducing and implementing innovative ideas and solutions in a company during times of crisis. It is assumed that during crises, companies intensify their process and organizational innovation activities.

Design/methodology/approach: The purpose of this study was to analyze and evaluate the impact of the COVID-19 pandemic on the innovativeness of service sector enterprises in the Beskids Region. The study was conducted using a diagnostic survey method, with a survey questionnaire as the primary research tool.

Findings: The collected empirical material confirms the established hypothesis that innovation is a key determinant of a company's success. In the surveyed service industry companies, innovative solutions were introduced, and new organizational techniques were implemented to minimize the impact of the pandemic.

Research limitations/implications: The research is of a pilot nature. Its aim was to verify the planned research procedure, including the selection of surveyed enterprises and the research tools used. During the pilot study, not only the research procedure was tested but also the formulated questions and the responses given by the respondents. The pilot study confirmed the significance of the investigated issue. A random selection of 10 service enterprises was made for the study. It is proposed to increase the number of the surveyed enterprises in the Beskids Region.

Practical implications: It is recommended that research and development facilities be established in the surveyed enterprises and that qualified personnel be employed. This will enable the faster implementation of changes and innovative solutions in the future. Continuous observation and monitoring of crisis factors that may influence enterprise innovation are necessary. No foreign studies have been found in this area that would allow for a comparison of the applied solutions.

Originality/value: A novel aspect of this paper is the identification and analysis of innovations implemented by enterprises under crisis conditions. In the surveyed service sector companies, innovative solutions were introduced, and new organizational techniques were applied to minimize the impact of the pandemic. In particular, this involved the adoption of new work organization methods. The implementation of concepts such as remote work and hybrid working had a positive impact on the functioning of enterprises.

Category of the paper: empirical researches.

1. Introduction

Innovation is the result of complex relationships and interactions among multiple actors, and among the special role played by small and medium-sized enterprises. Innovations in companies developing intensively in favorable conditions.

A major problem is the insufficient cooperation economic and scientific environments, the low level of implementation of new technologies and the low number of new companies created on the basis of new technologies as well as the problem of financing innovation.

Changes constitute the main challenge of the 21st century. They may concern systems, countries, branches of economy, enterprises, departments, organizational units, as well as the human being. In the age of increased competition, enterprises are forced to continually search for methods and techniques aimed at improving their actions. The changes dealt with by every business entity are related with both closer and more distant environment. There emerge new companies which are bound to compete with the already existing entities (Łopatowska, Zieliński, 2012, p. 471).

According to Schumpeter, an entrepreneur's task is not to make new inventions, but rather to put them into practice. Entrepreneurs contribute to repeatable waves of prosperity - which exert a revolutionary impact on economy - as well as to recurrent periods of recession, induced by the influence of new products and methods disrupting a current balance (Polowczyk, 2009, p. 7).

The purpose of the study was to attempt to analyze and evaluate the impact of the COVID-19 pandemic on the innovativeness of service sector enterprises in Beskids Region. The following research question was posed: "What type of innovations were used in the surveyed enterprises in crisis conditions?"

The topic of innovation in enterprises during times of crisis is particularly important, as it makes entrepreneurs aware of the significance of implementing innovations, especially during crises such as the COVID-19 pandemic. Due to the pandemic, companies have adopted innovative solutions and new ways of organizing work and management, all of which have been driven by mass layoffs and the necessity of isolation. By introducing previously unknown solutions, businesses hope to survive in these challenging times.

For the surveyed enterprises, it is highly recommended to establish research and development facilities and to focus on hiring qualified professionals. This will enable faster implementation of changes and the adoption of innovative solutions in the future. Such a recommendation can also be applied to companies operating in other industries.

2. Innovative conditions and a company's on the market

A continuous emergence of new techniques and technologies, along with a gradual increase in competitiveness, can be observed in recent times. In such circumstances, an enterprise that fails to innovate or respond quickly to environmental changes risks collapse. Both business theorists and practitioners generally agree that innovation is now a key factor in competitiveness.

In developed market economies, a deeply rooted assumption—one that entrepreneurs have only recently begun to recognize—is that an enterprise's ability to absorb innovation is a crucial indicator of its modernity, efficiency, and productivity. Today, innovation is seen as a fundamental driver of enterprise development, enriching the market with high-quality products and services while also fostering organizational restructuring within companies and their environments.

Innovation should be viewed as a broad and complex set of resources aimed at enhancing managerial capabilities, strengthening competitive positions, and enabling enterprises, national markets, and societies to achieve economic gains. The ability to achieve these benefits is closely linked to competitiveness (Świtalski, 2005, p. 146).

W. Grudzewski and I. Hejduk Innovations are believed to enhance creation processes, increase productivity, improve effectiveness and product quality, and boost competitiveness. They also contribute to overall efficiency by optimizing work organization, removing barriers, activating resources, and improving occupational health and safety. Furthermore, innovations facilitate export opportunities, reduce the need for human labor through better organization, and enhance efficiency by utilizing more advanced and complex technical equipment, etc. (Grudzewski, Hejduk, 2001, pp. 451-452).

Innovation is the creation, development, and implementation of a new product, process, or service to improve efficiency, effectiveness or competitive advantage (Czerwińska-Lubszczyk, Gajdzik, Grebski, M.E., Grebski, W., Jagoda-Sobolak, Krawczyk, Kuzior, Wolniak, 2022, p. 12). From a psychological perspective, the definition of innovation is: *Innovation is individual ingenuity, talent associated with creativity, the ability to take risks, inventiveness, and the capacity to learn* (Brojak-Trzaskowska, 2021, p. 120).

Among the fundamental sources of success, J. Kay identifies reputation, innovation, and a company's strategic resources. Innovation can pertain to products, technology, as well as organizational and management systems. While original innovations form the foundation of competitive advantage, it is often challenging to retain their benefits exclusively. Due to the ease of idea replication, the original inventors frequently do not reap the full market rewards alone; instead, success and benefits are often distributed among multiple companies (Key, 1986, p. 145).

Hamel and Prahalad argue that identifying key areas of expertise within an enterprise enables the attainment of a long-lasting competitive advantage. Innovative knowledge drives the emergence of new industries and markets. The development of new competencies stems not only from technological advancements but also from the ability to meet evolving customer needs. These concepts are forward-looking, recognizing the accelerating pace of social change, which gives rise to new fields, emerging demands, and profound transformations in traditional sectors. In this context, innovation serves as a cornerstone for building essential business expertise (Hamel, Prahalad, 1999, p. 14).

Innovations make it possible for entrepreneurs and managers to perform important modifications, undertake new activities, offer new services and solicit innovative buyers. The ultimate test for a new innovation is its success on the market (Matejuk, 2005, p. 14).

Types of innovation can be classified according to various criteria, types, and effects (Jasiński, Głodek, Jurczyk-Bunkowska, 2019, pp. 24-25).

An innovative enterprise integrates three key elements in its operations: generating novel ideas, implementing them in practice, and bringing them to full realization. More broadly, an innovative enterprise is one that continuously seeks out and applies scientific research, novel concepts, and groundbreaking inventions. In today's competitive market, innovation serves as a critical driver of competitive advantage. Strengthening business competitiveness relies on identifying and shaping the essential factors that determine a company's overall condition.

According to Z. Pierścionek, the process of shaping and analyzing a company's competitiveness begins with customer perception. Buyers compare various aspects of competing offers, including product or service quality, functionality, price, novelty, and modernity. Other key factors include the diversity, complexity, and complementarity of the offer, the degree of innovation in both the product and the company, the customer's role in product creation, availability and purchase location, as well as the intensity and quality of promotion. Additionally, buyers consider modification costs, personal attachment and relationships, brand loyalty (toward the company and/or country of origin), after-sales service availability, brand reputation, company size and market share, delivery time, and various other factors (Pierścionek, 2003, p. 35).

In today's world, creating favorable conditions for fostering innovation is essential. The innovative activities of enterprises are becoming increasingly complex, and their dynamic growth is often constrained by limited internal resources. As a result, innovation frequently requires support from individuals or both internal and external institutions. A strong market position not only provides an enterprise with direct benefits but also facilitates easier access to external funding sources (Świtalski, 2005, p. 147).

Enterprises today are increasingly impacted by change, which has become more apparent in business operations. Commonly discussed issues include restructuring, reorganization, shifts in business direction, re-engineering, new technologies, emerging distribution methods, mergers, and acquisitions. What was once considered rare or exceptional has now become the norm. The era of companies relying solely on stable organizational structures for efficiency is gradually fading. To meet market demands, businesses must embrace flexibility in their daily operations and prioritize innovation.

Under current circumstances of highly turbulent environment, in order to shape the value of an organization and improve its competitive position, it is crucial to quickly identify and create change-triggering factors, and subsequently plan and carry out modification processes so that the change could bring desired effects. This ability allows the organization to acquire characteristics of self-learning and self-development, which in turn makes it possible to flexibly adapt to a new market situation and enhance competitiveness (Łopatowska, Zieliński, 2012, p. 472).

In order to reach a favorable competitive position on the market, it is essential to maintain a high level of innovativeness, which is described as the ability to permanently create and implement innovations that are appreciated by receivers thanks to their high level of modernity and quality.

3. Crisis

The word *crisis* comes from the Greek word *krisis* which has many meanings. It can mean a dispute, a preference, a separation, a struggle with something, a turning point or a breakthrough or watershed moment (Walas-Trębacz, Ziarko, 2011, p. 16). In today's perception, the statement is primarily associated by society with something bad. In the case of a company, it is a pathological situation that needs to be defined and then attempted to be eliminated by taking appropriate measures. However, the crisis has been with us from the beginning.

In direct reference to the economy and economics, until 2020, the word crisis was mainly associated with the year 2008, when the US economy collapsed as a result of the collapse of the global financial system, which contributed to the collapse of the global economy, which

was also felt in Poland (Barczak, Bartusik, 2010, p. 14). Today the word is associated with the SARS-CoV-2 virus pandemic, where the word crisis is not only considered in economic terms, but also in aspects such as health or politics. It is therefore important to define the statement correctly in order to be able to determine what kind of crisis a company is facing. It is worth pointing out that this phenomenon can be considered in relation to various aspects, such as the process, where special attention is paid to the very course of the crisis over time, the phases of the process, the places of origin or the problems in the development concept of enterprises (Walas-Trębacz, Ziarko, 2011, p. 18).

A crisis can be defined as a situation that severely disrupts a company's operations. It signifies a fundamental disturbance to the enterprise, often resulting in mass redundancies or even the indefinite closure of the business. Additionally, a crisis can also imply the partial or complete breakdown of the company's internal structure. More broadly, a corporate crisis refers to an event—or a series of events—that poses a significant threat to the organization as a whole. When the challenges become so severe that they jeopardize the core business, the enterprise's survival is at risk (Zelek, 2003, p. 85).

A crisis is a phenomenon that follows a structured sequence of events and stages before it fully emerges. Therefore, it can be understood and treated as a process. This process consists of events that are often sudden and unexpected for the company. However, a crisis may also result from long-standing irregularities—sometimes even known to the enterprise—where its onset is a consequence of inaction or poor management decisions. A crisis situation may begin to develop when a company starts experiencing unprofitability, rising costs exceeding revenues, organizational burnout reflected in a lack of motivation to achieve goals or embrace new challenges, a decline in innovation, or a sharp decrease in market interest (Barczak, Bartusik, 2010, p. 2).

To determine whether a company is at risk of a crisis, it is essential to assess its situation and identify both the presence and stage of the crisis. Defining a crisis requires a clear understanding and interpretation of what constitutes such a situation. A crisis is a combination of internal and external events and circumstances that significantly impact an organization, triggering lasting changes and transformations. Certain aspects are commonly associated with classic crisis situations, including rapid escalation, high social and political significance, the risk of conflict, heightened tensions, aggression toward opposing parties, and prolonged duration—sometimes even remaining hidden for an extended period (Markiewicz, Wawer, 2005, pp. 41-42). The concept of a crisis situation is complex and cannot be fully understood with a single definition. To grasp its full meaning, all aspects must be considered. It is particularly important to examine the term 'situation' itself—what it entails and how it applies in a crisis context. The term is used to describe the variability and temporality of different elements within a given framework. A situation can be defined as any dynamic arrangement of environmental factors that change over time.

A crisis situation encompasses the factors, circumstances, stages, and events that precede and shape a crisis. It often involves growing instability and uncertainty, as well as events that pose threats to life, health, property, or, in the case of enterprises, disruptions to their structure, profitability, and overall stability. In most cases, a crisis situation leads to a lasting decline in business performance and organizational destabilization. In extreme scenarios—such as a global crisis like COVID-19—if the state does not intervene with support, the company may face complete collapse.

A crisis can stem from various sources, often originating from seemingly minor or insignificant events that, through their consequences, lead to lasting destabilization or even the collapse of a company. But what are the most common causes of a crisis? What often acts as the trigger for a company's failure?

There is no single, clearly identifiable source of crisis. Its unpredictable nature makes it impossible to pinpoint one specific cause. While certain risk factors can be anticipated and mitigated, crises often arise from sudden, unexpected events—situations that were considered unlikely and for which neither society nor businesses were adequately prepared.

The epidemic threat posed by SARS-CoV-2 has become the absolute most important challenge of an economic-social as well as a political nature (Hajkowski, Szewczyk, 2023, p. 2). Today, there is no clear definition of a pandemic crisis. However, it can be said that this crisis is of a disruptive economic as well as social nature. What is more, this crisis should be treated as serious, as it has affected the European Union, including Poland, at a time of great economic and political instability. It is worth noting that the crisis is comparable if not worse in its effects to the crisis of 2008 (Zahradnik, Palmieri, Dirx, 2020, p. 2).

4. Problems of enterprises as a result of the coronavirus pandemic

The problem of the coronavirus in Poland began on 4 March 2020, the date of the first case of the SARS-CoV-2 virus recorded in our country. At the time, no one suspected that the virus could bring the world to the state we know today. In the early days of the spread of the virus, health was the main priority. However, as the epidemic turned into a pandemic, attention began to turn to the devastating effects the virus was having on the global economy. What was not thought was that a virus from the Far East would contribute to an economic disaster comparable to 2008. When the eyes of the entire country were on the public and the health service, businesses on virtually every level began to record losses. The financial markets experienced a meltdown due to the slowdown or complete freezing of the economy.

The world economy was not prepared for such an event. Many scientists and scholars conclude that mankind is now confronted with a 'black swan' event, where such an event is defined as unexpected, low probability and unpredictable on a global scale (Dobska, 2021,

p. 8). At the very beginning of the pandemic, there was already speculation that even if there was no outbreak in many countries, they would all feel the economic impact of the pandemic on the market. The financial markets had already warned of this a little earlier, when the decline in demand in China and the industrialised countries began to fall dramatically and the sectors involved in exporting products, selling raw materials or tourism began to record losses they had not experienced for years.

The way in which risks were understood before the pandemic has faded into the background. Before the pandemic, the main corporate threats were primarily political, economic, socio-cultural, technological, legal, environmental or ethical. During the pandemic, it appears that threats that were perceived as single criteria, today, through the coronavirus pandemic, threats arise from several segments at once. The results of the survey confirm that the impact of the pandemic on companies, the majority of entrepreneurs assess the impact of the pandemic as being felt - a total of 94%, with nearly 60% assessing the situation as very serious and a further just under 40% declaring that the impact is partly felt, but that the Board is still coping. Only just under 5% of respondents declare that the pandemic has a minor negative impact on the operation of their company, and no impact was declared by 3 companies out of the 809 surveyed (Męcina, Potocki, 2020, p. 9) with particular emphasis on political, social and economic risks.

The first and perhaps most shocking threat to businesses (and especially start-ups) is virtually total paralysis. Businesses were closing down overnight. In contrast to the previous crisis, here there was an immediate, total shutdown of many activities. In turn, the complete suspension of operations entailed further risks, namely a sharp drop in production, a rapid rise in unemployment or a reduction in foreign trade. A threat such as the total blocking of a company's operations has dire consequences (Zahradnik, Palmieri, Dirx, 2020, p. 4).

Another risk arising from the pandemic crisis was that directly resulting from the closure of enterprises, namely the reduction of employees. Companies, due to the suspension of their activities, were forced to reduce their workforce, which manifested itself as redundancies (Męcina, Potocki, 2020, p. 9). Despite the fact that the company is up and running and permitted to operate, by reducing the workforce the productivity, which had already been damaged by the lack of demand, also falls (Zahradnik, Palmieri, Dirx, 2020, p. 4).

5. Impact of the COVID-19 pandemic on the innovativeness of service sector enterprises in Beskids Region

Innovation is an essential component of any thriving and modern enterprise. For service companies, the ability to innovate becomes particularly crucial during challenging times, such as the COVID-19 pandemic.

In 2022, a study was conducted to examine whether innovation intensified in service companies in the Beskids Region during the pandemic crisis. The research was based on a standardized survey questionnaire, which was administered to 10 small and medium-sized enterprises (SMEs) in the service sector within the region.

Respondents provided insights into the types of innovations they introduced and the areas in which these innovations were applied. The survey also explored company performance, the benefits of implemented innovations, and business activities that fostered company growth. The study analyzed product, process, organizational, and social innovations in detail, while additional questions focused on demographic and profiling aspects.

Table 1 provides respondents' responses on the type of innovation introduced in enterprises between 2020 and 2022.

Table 1.

Innovations introduced in Polish enterprises of the service sector in 2020-2022

Type of innovation	Companies (%)
Product Innovations	5%
Process Innovations	10%
Organizational Innovations	100%
Social Innovations	70%

Source: own research.

All companies (10 companies) have implemented organizational innovations.

One company introduced product innovations and two companies introduced process innovations. Seven companies have introduced social innovations.

In the opinion of the respondents, organizational innovations related to changes in the organization of work and company management made in enterprises resulted in a significant reduction in the costs of the processes carried out.

The research carried out helped to confirm the research assumption that organizational and process innovation intensified under the conditions of the coronavirus pandemic crisis in the surveyed companies. Previously, employees had worked exclusively stationary. Unfortunately, while successive waves of coronavirus devastated the economy, the surveyed companies followed suit by introducing remote working. This turned out to be crucial because, as part of a management decision, when remote working was introduced, employees were able to work from home, thus avoiding the spread of the coronavirus within companies. Companies provided employees with the computers and tools needed to work remotely. Through such measures, companies ensured the safety of their employees while at the same time avoiding the loss of workstations. Over time, as the coronavirus waned, company management decided to introduce hybrid working, which was also one of the organizational innovations. This was a necessary procedure because not everything could be accomplished at home using only a computer. The main problems resulting from remote working were: lack of access to documents in the warehouse, lack of supervision of the correct loading and unloading of vehicles, limited communication with employees, burdening those in the office with the tasks of those in the

home office (printing out documents, labels and then passing them on to drivers and warehousemen).

Implementing innovation is a complex process requiring time and often considerable money. We are talking here about innovations introduced during the normal operation of a company. The situation becomes much more complicated when a crisis becomes a reality, and particularly when the crisis is caused by a virus that the world has never encountered before. This was also the case for the companies surveyed, when time pressure resulted in some difficulties during the desire to implement the necessary innovations. Due to the specific nature of the service industry, problems such as constraints due to regulations and legal standards and the lack of suitably qualified staff occurred. It was these two factors that became the main problems during the implementation of innovations. This resulted in a significant delay in the introduction of, for example, home office compared to other companies. A lack of technology information proved to be another problem. None of the companies surveyed had a research and development department.

The innovations that were introduced were mainly organizational innovations such as home office, hybrid working or downsizing. A problematic aspect may have been the crisis shield, where it directly relates to norms and legislation, which were known to change dynamically during the pandemic.

The situation with the coronavirus and the accompanying crisis will certainly be remembered in the history of the companies surveyed. However, these companies managed to survive the crisis by introducing and intensifying innovations, especially organizational innovations. Work organization (organizational) innovations such as home office or hybrid working may have worsened communication between departmental employees or made certain activities impossible and stopped for an indefinite period of time, but the company was not affected as significantly as other companies in the market. We should also not forget the technological (process) innovation aspects, such as the introduction of automatic magnetic card doors and the separation of employees by plastic sheets or the creation of separate work rooms. In addition, all sanitary protection measures were introduced.

6. Conclusions and recommendations for the enterprises of the Beskids Region

Innovation is a key determinant of business success. In the service companies surveyed, innovative solutions and new organizational techniques were introduced to minimize the impact of the COVID-19 pandemic.

Amid the crisis caused by the pandemic, service companies in the Beskids Region intensified their innovation efforts, particularly in the area of organizational innovation. This primarily involved implementing new work organization methods, such as remote and hybrid work models, which had a positive effect on business operations.

The measures adopted helped mitigate the risks brought on by the crisis. However, in the surveyed companies, these changes were implemented too slowly, and innovative solutions were introduced too late. Additionally, there were challenges related to insufficient knowledge of legal and technological requirements.

To address these issues, it is recommended that research and development (R&D) facilities be established within these enterprises and that qualified personnel be hired. This would enable a faster and more efficient implementation of innovations in the future.

Polish companies that had to limit or suspend their operations due to the pandemic could rely on government support. Poland received approval from the European Commission to allocate national financial resources to various instruments supporting businesses. The Financial Shield of the Polish Development Fund, as well as the Anti-Crisis Shield, provided real support for Polish entrepreneurs.

Polish centers of the Enterprise Europe Network, including the Polish Agency for Enterprise Development, continuously provide advisory services and support in establishing business connections.

7. Summary

In the history of the surveyed enterprises, the crisis accompanying the COVID-19 pandemic will undoubtedly be remembered. The companies survived this crisis by implementing and intensifying organizational innovations. Despite the lack of customers, employee layoffs, and the temporary suspension of business operations, the surveyed companies remained solvent and continued their activities.

Work organization innovations, such as remote work (home office) and hybrid work, may have worsened communication between departments or caused certain operations to be delayed or suspended indefinitely. However, these companies did not suffer as severely as others in the market.

It is also important to acknowledge technological innovations, which included the introduction of automatic doors with magnetic card access, the separation of employees with acrylic glass barriers, and the creation of individual workrooms. In all companies, mandatory sanitary protection measures were implemented by installing disinfectant dispensers.

Both business theorists and practitioners generally agree that innovation is one of the most crucial factors in a company's competitiveness. A company that fails to implement changes or responds too slowly to shifts in its environment risks collapse.

In connection with the COVID-19 pandemic, European Union member states, including Poland, had an effective tool for supporting selected groups of enterprises. However, whether it was utilized and proved effective depended largely on individual member states—their ability to forecast, plan, and implement appropriate measures in a timely and strategic manner, prioritize economic and social interests over political ones, and, to a significant extent, their budgetary capabilities (Kopeć, 2021, p. 98).

This article aims to characterize the process of change implementation in service sector enterprises during times of crisis. In the surveyed service companies, innovative solutions and new organizational techniques were introduced to mitigate the impact of the pandemic. In particular, businesses adopted new work organization methods, such as remote and hybrid work models, which had a positive effect on their overall operations.

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