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CHANGES IN THE PERCEPTION OF INNOVATION AMONG THE MANAGEMENT STAFF OF SILESIAN SMEs IN 2010-2012 AND 2020-2022

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Purpose: Comparative analysis of the results of the author's research on the perception of innovation among the management staff of Silesian SMEs from 2010-2012 and 2020-2022, diagnosis of changes in the above-mentioned area of research.
Design/methodology/approach: The conceptual framework of the research draws upon open innovation principles and the innovation strategy typologies presented in the Oslo Manual. Comparative research over time was conducted using the standardized interview method (questionnaire) and an online diagnostic survey.
Findings: There was a clear increase in awareness of the importance of innovation among the management of the surveyed Silesian SMEs, especially in the context of digitization, automation and green technologies. Respondents increasingly perceive innovations not only as technical improvements, but also as organizational, process and marketing changes.
Research limitations: Results of research of limited scope - regional, the need for comparative supra-regional studies.
Practical implications: Diagnosis of the direction of evolution of the ways of perceiving and implementing innovative strategies by SME management.
Social implications: Diagnosing the direction of changes in the perception of innovation among an important social group for the economy and society – SME managers.
Originality/value: Comparative analysis of the results of the author's research on the perception of innovation among the management staff of Silesian SMEs from 2010-2012 and 2020-2022.
Keywords: change, innovation change, perception of innovation, SMEs, questionnaire interview, online survey.
Category of the paper: research paper.

1. Introduction. Conceptualization of the Concept of Innovation

The development of regional enterprises and employees is one of the fundamental conditions for the evolution of the regional economy and its adaptation to global changes (Leitão et al., 2024; Drucker, 1992, 1993; European Innovation…, 2005; PARP, 2024). In the process of restructuring the Silesian Voivodeship's economy, the development of the small and medium-sized enterprise (SME) sector is of strategic importance. These enterprises are expected to produce innovative products, utilize innovative technologies, and introduce innovative forms of services.

According to the "Report on the Condition of the Small and Medium-Sized Enterprises Sector in Poland," the innovation of Polish companies is growing. Between 2020 and 2022, 32.2% of enterprises (excluding microenterprises) implemented innovations, the highest rate since the survey was conducted. Most of these were large companies, employing 250 or more people (Report on the Condition…, 2024). The most frequently implemented type of innovation was new or improved business processes. Among industrial enterprises, innovations in production methods or service provision dominated, while among service companies, innovations related to the principles of operation within the enterprise or in relations with the environment dominated. The growing importance of the knowledge-based economy and competition, as well as the impact of globalization, have made innovation one of the greatest challenges for modern enterprises (Alyami et al., 2024; Apa et al., 2020; Ehigiamusoe et al., 2024; Erickson et al., 2024; Kasprzyk, 1980; Kłopotek et al., 2001). Innovation, as a fundamental process of an enterprise, should include (Ambler et al., 2004, p. 23; Aufan, 2004; Blażlak, Owczarek, 2014, 2016, pp. 33-38):

1. Creating new ideas, which includes: identifying customer needs, supporting the emergence of new ideas and creativity among employees, and creating mechanisms and criteria for selecting ideas that will be developed into new products and services.
2. Changing production processes resulting from the introduction of new technologies and management methods to increase the value of a product or service.
3. Product development, encompassing the cycle from concept to market launch of a new product or service, as well as coordinating the activities of internal staff with external teams involved in the design and development of the new product.
4. Changing marketing processes to increase the value of existing products and services or creating new ones.
5. Managing knowledge and technology within the company, but also externally by outsourcing research and development projects to technologically and scientifically specialized organizations, purchasing licenses or patents, establishing technological alliances with other companies, and monitoring technological developments that will impact future products and services.

It should be emphasized, however, that a well-designed innovation process does not necessarily guarantee successful implementation (Blażlak, Owczarek, 2016, pp. 33-34; Kuzior et al., 2023; Kim, Park, 2024; Hutton et al., 2024).

Changes must possess essential features to be considered innovations (Świtalski, 2005; Davila et al., 2005; Hamel, 2002; Obłój, 2002). In different perspectives on innovation, two most important features can be distinguished: novelty and change (Ohme, 2005; Dolińska, 2010; Jonasz, Kozioł, 2007; Kożusznik, 2010, pp. 21-51). In practice, when implementing innovative solutions, it is necessary to understand change in its two dimensions. The first is a change in value, which is expressed in the products offered by the enterprise, as well as in the processes (ways, methods) facilitating the creation of products and their delivery to customers. The second dimension is the degree of novelty (Brzóska, 2014, p. 41). Treating change as an innovation is conditioned by certain characteristics. These include: 1) a change considered by a given entity as an innovation should be introduced in a purposeful, conscious, and sustainable manner; 2) innovation is a change that leads to more effective operation of the enterprise; 3) innovation involves change and results in improved function; 4) an increase in the usefulness of the results of a material product or service – an improved function is manifested in better technical quality or usability; 5) innovation is the effect of change consisting in the modification or introduction of entirely new elements to the entity's method or effect; 6) more effective operation of the entity is manifested in a shorter response time of the entity to external stimuli; 7) the change should have the possibility of spreading to other entities (Brzóska, 2014, p. 41; Świtalski, 2005, pp. 68-69; Brzóska, Pyka, 2011).

Innovation is considered an economic success when new ideas are implemented (Weryński et al., 2014; Băban, Băban, 2024; Dost et al., 2020). It is rather treated as a continuation of technical and organizational changes, encompassing, on the one hand, simple modifications to existing products and services and, on the other, processes (Kuczmarski, 2000; Haffer, Karaszewski, 2004; Jasiński, 2006). According to the Dictionary of Innovation and Technology Transfer: "The phenomenon of innovation is inextricably linked to the concept of change, novelty, reform, or an idea considered new" (Matusiak, 2011). Innovation is also defined as various facts, processes, and phenomena of a technical, organizational, social, or psychological nature. In this context, "innovation" can be defined as all phenomena, processes, and products that arise as a result of introducing changes or taking into account factors that have caused changes, for example, in the way things are used. The main goal of innovation in this area should be to improve the quality of people's lives. This translates into the development of an economy based on science and knowledge (Weryński et al., 2013; Dolińska-Weryńska, Weryński, 2019; Weryński, Dolińska-Weryńska, 2021; Weryński, 2022).

The authors' operational definition of the concept of innovation is based on a pragmatic approach to truth. It accepts as true what works through its practical consequences. It is close to being identified with the effectiveness, efficiency, and adequacy of satisfying human needs in a specific situational context. Pragmatically understood innovation emphasises the

importance of the effects of social activities, the importance of activities focused on action research, i.e., research, action, and cooperation (Mulgan et al., 2007, pp. 22-23; Lubimow-Burzyńska, 2014, pp. 83-88). The above-mentioned approach to social innovation includes the diagnosis of reality, identification of the problem, initiation, testing, implementation, and possibly validation of the final product of the innovation (i.e., product, service, and model), which in effect leads to a permanent and significantly predicted change in a specific environment, social group, or organisation. It is achieved through the cooperation and mutual inspiration of innovators, users, and recipients and by applying the idea of open innovation (Alyami et al., 2024; Oliveira et al., 2025).

Referring to the terminology proposed by the Organisation for Economic Co-operation and Development (OECD) in the Oslo Manual, four types of innovation can be distinguished. These largely correspond to the most common classifications of innovation strategies based on the area they concern (the subject of innovation): product innovation, process innovation, marketing innovation, and organizational innovation (OECD, 2008, p. 48). Incorporating these innovation strategies into a company's strategy is intended to help focus efforts on building the foundations for the company's future position (Oliveira, Rua, 2005). From this perspective, the innovation strategy chosen by the surveyed companies is particularly interesting.

These types of innovation were incorporated into the process of conceptualization and operationalization of the presented research. In the above area, the authors posed two research questions: (1) How did the perception of the concepts of "change" and "innovative change" change change among the management staff of Silesian SMEs in the years 2010-2012 and 2020-2022? (2) How did the structure of key innovative activities change according to the representatives of the management staff of Silesian SMEs in their enterprises in the above-mentioned period?

2. Research methods and procedures used

This article compares the results of studies conducted between 2010 and 2012 and 2020 and 2022 among management representatives of Silesian SMEs. The first study was conducted as part of the innovative research project (POKL) "With the Entrepreneurship Implementation Matrix" (Weryński, 2012, 2013). Among other things, 300 questionnaire-based interviews were conducted with SME representatives from all counties of the Silesian Voivodeship. A quota sample was selected for the above studies so that the distribution of the research sample among micro, small, and medium-sized enterprises in the individual counties where enterprises are registered proportionally corresponded to the actual distribution. The sample was constructed based on data from the end of 2010, published on the website of the Provincial Statistical Office in Katowice.

The second study, conducted via an online survey, was conducted in the second half of 2022. The study employed simple random sampling. The minimum sample size was calculated based on the general population of 6,781,600 people employed in 100,811 small and medium-sized enterprises in Poland (www.stat.gov.pl). The calculations assumed a 95% probability that the survey result would not deviate from the actual population value by more than 5%. The resulting minimum sample size was 384 people and 383 companies. Therefore, the 542 respondents obtained from 542 companies exceeded the minimum sample size, allowing for statistically reliable data.

In this study, the survey questionnaire was sent via email, and separate links were sent to each selected company. A total of 542 representatives of Polish small and medium-sized enterprises (including 71 from the Silesian Voivodeship) participated in the study, representing both management and specialists. The analysis in this article focused on the sections of the same questionnaire concerning the perception of innovation in both studies.

3. Research results

3.1. Perception of the concept of change and innovative change

From a research perspective, it is crucial to understand the difference between the concepts of change and innovative change. Change is any modification to some part of an organization, typically undertaken to minimize negative environmental impact, meet technical requirements, or improve efficiency (it can be planned long-term or adaptively). Its implementation involves reorganization, which can cause disruptions and difficulties, and therefore its implementation is often delayed (Piotrowski, Świątkowski, 2000, pp. 133-134). Innovative change, on the other hand, is a change with specific characteristics: it is an expression of creativity, i.e., the creation and implementation of a new idea or product. The originality and freshness of the idea are also important. Factors influencing the growth of innovation include hiring appropriate employees who possess the ability to act creatively in all positions within the enterprise, both managerial and executive, the existence of an atmosphere conducive to the search for new solutions, an efficient innovation implementation system, and a large number of successfully implemented innovations by the enterprise in the past.

Following this line of reasoning, it is therefore crucial to ask how SME decision-makers understand the concepts of innovation and change. This issue was operationalized in the form of two closed-ended questions: "What does the term 'change' bring to mind for you?" and "What does the term 'innovative change' bring to mind for you?" Below is a comparative graph of surveys conducted between 2010-2012 and 2020-2022, examining respondents' associations with the concept of change.

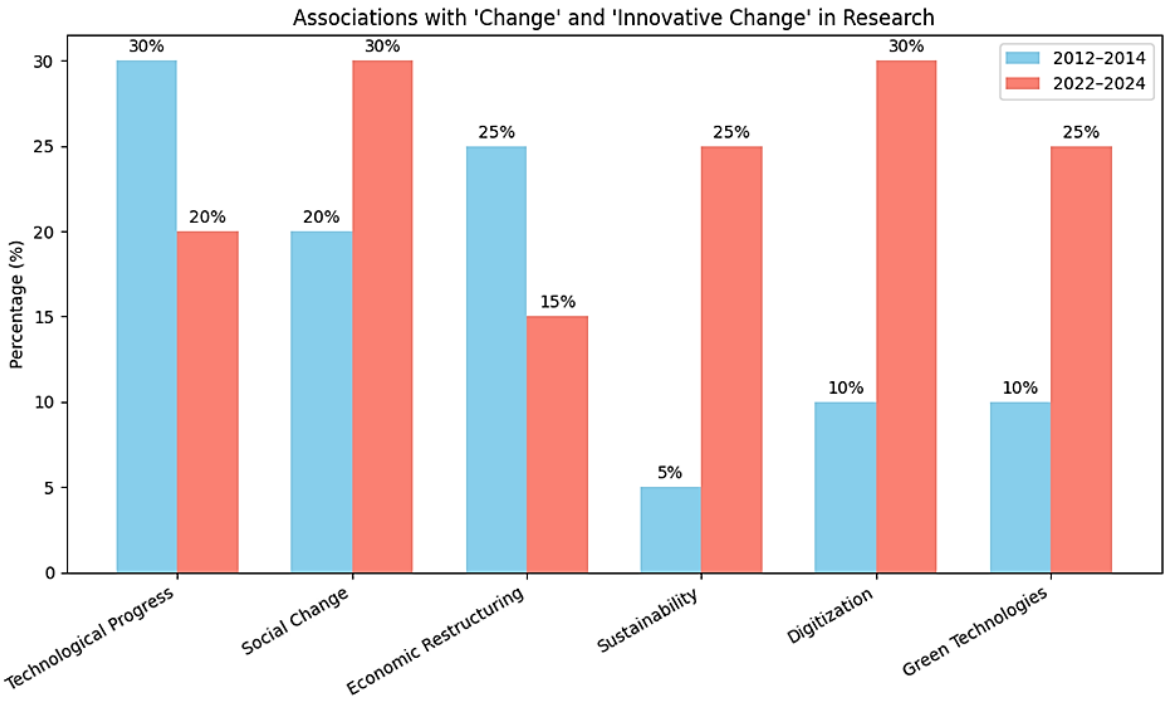

Figure 1. Associations related to the concept of "change".

Source: own research.

The table above clearly shows that technological progress and economic restructuring were more noticeable in previous years, while social change, sustainability, digitalization, and green technologies gained importance between 2020 and 2022 and continue to do so. This shift undoubtedly reflects a broader shift toward environmental awareness, digital transformation, and social innovation. Research conducted between 2010 and 2012 indicates that surveyed entrepreneurs were already mentally prepared to implement changes not only in technological processes but also in their relationships with their surroundings, but they needed several additional years to implement them. Surveyed entrepreneurs demonstrate a positive approach to change. The approach that perceives change solely as a source of uncertainty accounted for approximately 20% of all responses (only a few indicated change as a threat). Nearly one-third of respondents associated change with the possibility of success (although 63.9% of these responses also associated success with a threat). It is encouraging that almost 45% of surveyed entrepreneurs perceive change exclusively positively. This trend deepened in subsequent years. The distribution of responses suggests that the Silesian SME sector is not afraid of change and recognizes that it operates in an environment that requires significant fluidity and flexibility. Interestingly, the structure of responses does not differ by company size, and the approach to change is very similar, both in companies with nine or more employees and in those with 50 to 249 employees. It is worth noting that implementing change in larger companies typically involves a more complex implementation process, and consequently, consequences such as developing effective workflow reorganization and the ability to manage the resulting chaos. Therefore, a positive approach to change may also be an indicator of the high qualifications of those responsible for implementing it (change agents).

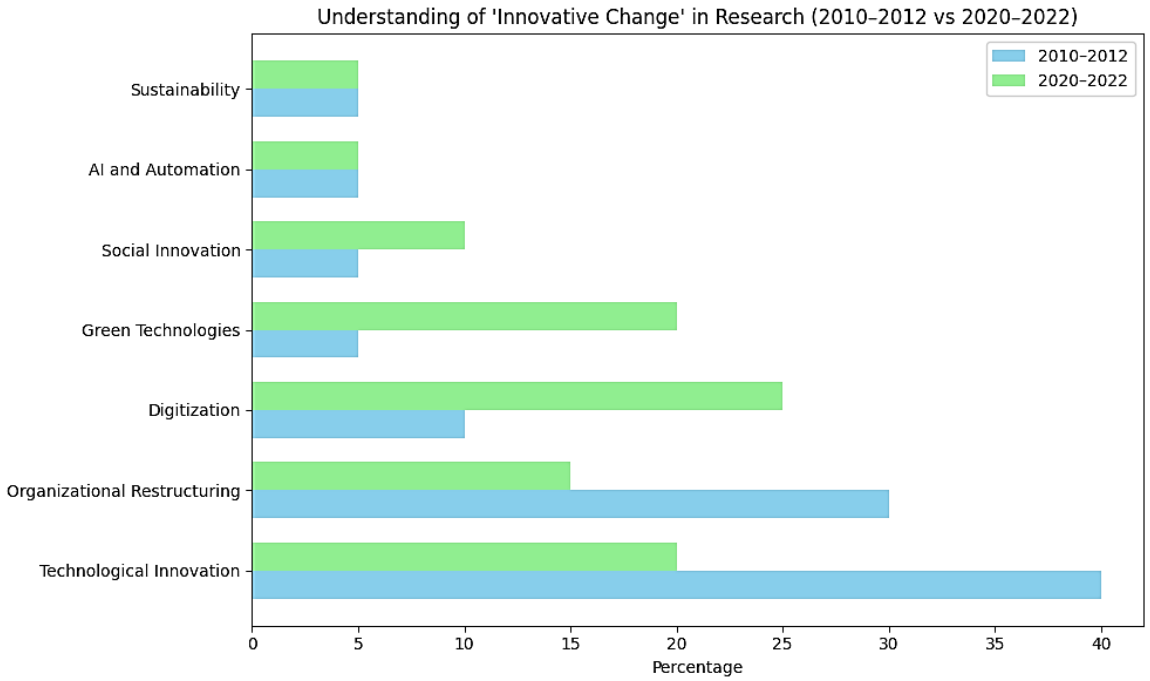

Figure 2. Perception of the concept of "innovative change".

Source: own research.

The above graph illustrates the evolution of the understanding of the concept and meaning of innovative change over the years. In 2012, we observe a traditional approach to innovation. Innovation was understood primarily as technological progress and organizational restructuring. The emphasis was on efficiency, modernization, and competitive advantage, especially in the industrial context, while the environmental and social aspects of innovation were marginal. In 2022, innovation is already systemic and inclusive. This concept has been expanded to include digitalization, green technologies, and social innovation. This reflects the shift toward sustainability, digital transformation, and inclusive growth. The development of green and digital agendas (e.g., the European Green Deal, Industry 4.0) likely influenced this evolution. Artificial intelligence and sustainability remained present but did not dominate the discourse.

The question about entrepreneurs' understanding of the concept of innovative change examined managers' awareness of the scope and importance of innovation. The most consistent response to the definition itself was a combination of the two previous elements. Sixty-two percent of respondents understood the importance and value of innovative change and perceived it as a factor contributing to both increased sales and production efficiency, as well as a change in people's mindsets and behaviours. This trend intensified in 2022. For 64% of respondents, innovative change is associated with both increased efficiency and a change in mindset.

Considering the size differences between enterprises, there is a significant difference in the distribution of responses to this question among representatives of microenterprises compared to medium-sized enterprises. This may be related to both less knowledge about innovative solutions and different business goals (e.g., a greater focus on profit and pressure for results).

There is a noticeable tendency towards a stronger syncretization of elements of people's mentality and behaviour, as well as increased sales and production efficiency as the organization develops. This problem may be related to the previously mentioned lack of preparation among medium-sized enterprises for implementing change.

Research conducted in 2012 and 2022 indicates that the surveyed entrepreneurs are ready for innovative actions, understood as change, including in their relationships with their environment. They do not perceive it as a threat to their companies, either currently or in the future. This attitude is shared by representatives of both small and medium-sized companies (the relationship between company size and the perceived threat of change proved statistically insignificant, meaning it does not differentiate respondents). The vast majority of respondents also associate the concept of change, broadly defined, with success or something positive (nearly 60% of responses). For another 25% of respondents, change is associated with success but with potential threats. These results suggest that the surveyed entrepreneurs have developed a foundation of awareness and possess a capital of confidence in their capabilities and resources.

3.2. Changes in the structure of key innovative activities according to respondents

In line with the conceptualization section, we maintain the assumption that innovation is a characteristic of firms that have introduced at least one technical innovation during the period under review or have participated in the creation of new or significantly improved products introduced to the market in the past three years. In the survey, respondents were asked to indicate which of the following operational strategy factors they considered to be a priority in their firm over the past three years.

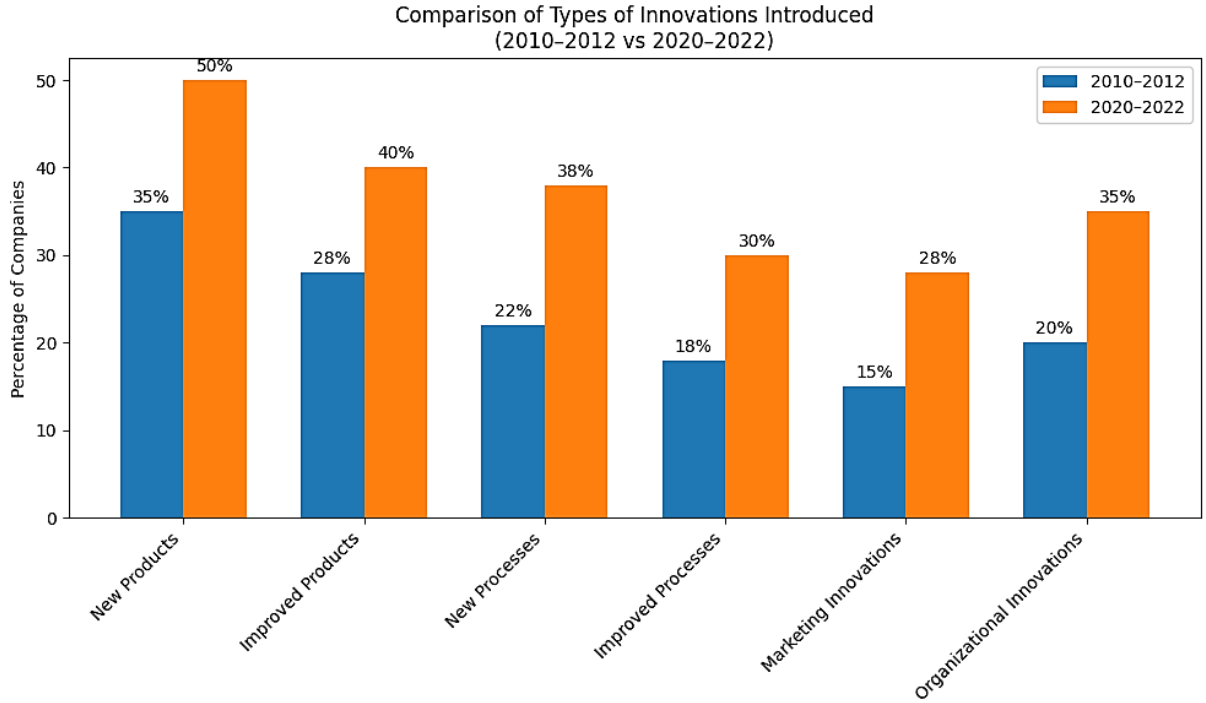

Figure 3. Key innovation activities of the company.

Source: own research.

The graph above clearly demonstrates the evolution of innovation activities over time along several dimensions: (1) Technological innovations (e.g., new technologies, production methods) increased significantly between 2020 and 2022, reflecting a significant shift toward digital transformation and automation. (2) Market expansion and distribution channels show a stronger emphasis in the later period, suggesting that the company more aggressively adapted to global markets or new platforms (e-commerce, digital marketing). (3) Organizational and structural changes became much more visible, likely driven by external factors such as remote work trends or internal restructuring to ensure scalability. (4) Design and communication innovations (such as branding and UX) were strengthened, indicating a deeper focus on customer experience.

While new products/services were already a strength in 2010–2012, their development accelerated even further between 2020 and 2022—a testament to consistent strategic prioritization. Overall, the chart illustrates how the company's innovation profile has broadened and intensified, moving from fundamental improvements to more dynamic, technology-driven, and customer-centric innovations. This comparison clearly demonstrates how the company's innovation profile has matured—from fundamental shifts in previous years to bold, strategic advances in recent years.

Respondents indicated the following as the most important (in descending order): implementing new and/or significantly improved products and services, using new or significantly improved production methods, changing pricing strategy, finding new markets, improving technology, obtaining new sources of raw material supplies, changing distribution channels and changing work organization methods.

SMEs too often focus on product features and quality, disregarding the customer's willingness to pay for their own benefits. The results presented confirm these observations. By choosing a product/service, customers buy both new technological advancements and (perhaps above all) satisfaction, a sense of security, self-confidence, and self-esteem. Therefore, the survival of any company depends on prioritizing customer needs over product features.

Thinking about innovation is not limited to research and development of new products but is increasingly becoming a way of looking at the entire organization. There are several paths that can be followed to reap the benefits of innovation (Kożusznik, 2010, pp. 14-15). The surveyed entrepreneurs indicated actions within all four strategies described in the Oslo Manual, but placed the greatest emphasis on product and process strategies. Implementing new and/or significantly improved products/services is reported by approximately 60% of respondents (product innovation). Nearly half of the surveyed entrepreneurs (48%) declare introducing process innovations through the use of new and/or improved production/service methods and the use of new technologies (45%). Process innovation also occurs when introducing innovations in the way a product reaches customers; therefore, finding a new sales market, indicated by 44% of respondents, can also be classified as process innovation and, to some extent, marketing innovation. It is worth emphasizing that respondents also indicated

marketing innovation activities undertaken, among others, by changing the pricing strategy (44%).

When asked how much importance respondents attach to individual factors in a company's operational strategy, 96% of respondents considered product/service features and quality to be a rather important or very important element of the company's operational strategy. These responses correspond to the question about actions implemented in the last three years, where the majority of respondents admitted to implementing new and/or significantly improved products/services in the last three years. Respondents also emphasized the importance of product/service pricing as a component of the company's operational strategy. Ninety-five percent of respondents considered product/service pricing to be a rather important or very important element of the company's operational strategy. As the results show, respondents consider pricing strategies an important element of the company's operational strategy, but are less likely to take action in this area.

4. Conclusions

This article examines changes in the perception of innovation among the management of small and medium-sized enterprises (SMEs) in Silesia between 2010-2012 and 2020-2022. It highlights the growing importance of innovation as a key element in the development of the regional economy. It presents the evolving perception of the importance of various aspects of innovation, such as the creation of new ideas, changes in production processes, product development, changes in marketing processes, and knowledge and technology management. A comparative analysis demonstrates the evolution of perceptions of innovative activities over time, with particular emphasis on digital transformation, automation, market expansion, and organizational and structural changes.

Between 2012 and 2022, there was a significant increase in awareness of the importance of innovation among the management of the surveyed Silesian SMEs, particularly in the context of digitization, automation, and green technologies. In 2012, innovation was often perceived as costly and risky. In recent years, a decidedly proactive attitude has prevailed. Innovation is treated as a necessity and an opportunity for development, rather than as a costly and risky endeavor. Respondents increasingly perceive innovation not only as technical improvements but also as organizational, process, and marketing changes.

Regional differences in innovation implementation are also evident. The Silesian Voivodeship, as a highly industrialized region, is characterized by a higher level of implementation of process and technological innovations than the national average. Employees of Silesian SMEs are more willing to participate in training and research and development projects, which influences their positive perception of innovation. This shift in motivation and

attitudes also stems from the growing role of EU and national innovation support programs, which has led to greater employee engagement in innovation processes. The COVID-19 pandemic has also significantly impacted the development of innovation processes, accelerating digitization and forcing many companies to implement innovative remote solutions, changing the perception of innovation as a tool for survival and adaptation.

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