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Agile management in Polish organic food processing enterprises

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Abstract

With expanding local, national, and international markets and changing customer expectations, enterprises are faced with the need to implement solutions to compete effectively. It is expected that agile management allows enterprises to achieve this objective. Therefore, many organizations, including those in the food sector, are taking advantage of agile management solutions and see changes in consumer behavior as an opportunity for growth. The present study has a theoretical and empirical character. The basis of the theoretical considerations is a critical analysis of the scientific literature on the concept of agility and its relevance to organizations. The diversity of perspectives on the problems of agility, highlighted in many publications, provided the basis for identifying a research gap and formulating a research objective and conducting an empirical study. The study describes the agile management of enterprises, indicates the characteristics and mechanisms applicable to organic food production, and characterizes organic food processing enterprises in Poland. The survey was conducted in 2021-2022 and allowed the authors to analyze the location, size, type of production, or capital in the enterprises. This was possible with a properly designed questionnaire and statistical analysis.

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1. Introduction

In the current geopolitical situation, characterized by a number of turbulent changes, with a globalizing economy, increasing competition, and increasing quality requirements of product customers, enterprises should take multifaceted measures that foster not only staying in their market but also winning new ones (Adamik and Nowicki, 2020; Moczydłowska and Bitkowska, 2020; Limański, 2015; Struś, Kalisiak-Mędelska; Nadolny et al., 2020; Ingaldi, 2018).

Changes in consumer behavior have been noted in the food market for many years, and the COVID-19 pandemic has only intensified them. They were due to demographic changes, increasingly higher human life expectancy, and the drive to improve the quality of life (Goetzke and Spiller, 2014). The promotion of healthy lifestyles in the mass media, prevention of diseases of affluence, and efforts to minimize their effects have significantly influenced eating preferences. Public awareness of these problems has further increased during the pandemic. The

above circumstances contribute to the fact that modern consumers are placing increasing demands on foodstuffs, wanting them to have a positive impact on their well-being, and their properties to help improve health (Bortnowska, 2013; Kujawińska et al. 2022; Szczyrba, A. 2021). Buyers are looking for high-quality foods that are tasty and contain the macro- and micronutrients needed by the human body to function properly. Therefore, it should be emphasized that nowadays, a diet based on organic products has become an important and popular trend to help both maintain and improve health. It is mainly chosen by affluent and educated people and is largely a marker of a certain social identity (Patrzalek, 2015).

The increase in consumer interest in organic food should be an impetus for food enterprises to look for new organizational, management, or technological solutions to produce food with the quality values expected by the buyer. An organization's perception of market changes that enable it to grow and achieve economic success, is linked to the idea of agility (Nurjaman and Nurjaman, 2020; Włodarkiewicz-Klimek, 2018;



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Umam and Sommanawat, 2019). Semantically, agility is understood to mean the ability to respond quickly and in a controlled manner to external conditions. In theory and, more importantly, in the practice of organizational management, the term should be viewed multidimensionally, taking into account the determinants of business activity (Olak, 2017, Sajdak, 2014). Organizations characterized by agility have the resources to identify opportunities and use them for their growth and development. In academic research, organizational agility is usually discussed in relation to specific areas of the enterprise linked to e.g., strategic goals, human resources, marketing, or knowledge management (Ahammad, Glaister, and Gomesb, 2020; Juchnowicz and Wolińska-Skuza; Sajdak, 2019; Wereda and Woźniak, 2015; Ingaldi and Dziuba, 2015).

There have also been attempts in the literature to model the concept of agile organizations. The complexity of the issue discussed here determines its various model definitions. The choice of elements included in the model is usually the result of a compromise, which results in an incomplete view of the specific area of research interest by the model developer. It is generally accepted that the first model of an agile organization was developed as a result of research conducted by the Iacocca Institute (Iacocca Institute, 1991). Another model approach to enterprise agility was developed by H. Sharfi and Z. Zhang (1999). The model designed by Ch.G. Worley and E.E. Lawler (2010) emphasized the role of agility in achieving above-average performance, which can be analyzed and evaluated in different areas of the organization. Furthermore, from S. Trzcielński's perspective, the agility of an organization should be considered through its agility in the technological, financial, social, and entrepreneurial areas. What is important here is the ability to perceive and take advantage of opportunities in the enterprise's further and/or closer environments (Trzcielński, 2005). In the model by H. Włodarkiewicz-Klimek, shaping enterprise agility is based on the organization's knowledge, which is critical to the quick identification of opportunities and using them for its own growth and development (Włodarkiewicz-Klimek, 2015).

2. Assumptions and research aim

The analysis of the literature leads to the conclusion that the perception of an enterprise as agile is related to its ability to reconfigure internal resources in order to respond quickly and effectively to changes in the markets, which is also affected by customers co-creating products and services (see Yusuf, Sarhadi, and Gunasekaran, 1999; Sajdak, 2014). It is therefore legitimate to assume that food enterprises, by responding to changes in consumers' eating habits and thus following their expectations and taking steps to launch the production of an additional range of food products, are manifesting the behavior of an agile organization. Under these circumstances, business entities that, in addition to the production of conventional products, undertake the production of organic foods, require special consideration. Production of such food is specified in the relevant legislation, with its main emphasis on the manner and conditions under which such food is produced, both of plant and animal origin. According to legal regulations, a

product can be labeled organic if at least 95% by weight of its ingredients of agricultural origin are organic, and its production is separated in time and space from non-organic food. This makes conventional and organic food producers obliged to:

- fully separate organic and conventional production,
- properly clean the process lines before starting organic production,
- remain in uninterrupted contact with the certification body and provide an updated record of all activities and processed quantities of organic foods;
- take the necessary measures to ensure the traceability of the batches of organic foods.

Uninterrupted and efficient implementation of such requirements is possible only in business entities that are characterized, among other things, by the ability and speed to reorganize resources, the flexibility of operations, awareness of customer needs and the desire (need) to satisfy them, and responsibility for the quality of manufactured products in light of the expectations of organic food consumers. It should be noted that the listed attributes are the main criteria that describe agile organizations.

Under these circumstances, it is advisable to conduct primary empirical research to characterize Polish organic food processing enterprises as those that use elements of agile management in their operations. The results of the study with such an aim can form the basis of logically coherent in-depth explorations and analyses of organic food processing in various contexts of their perception with reference not only to agile management.

3. Research methodology and procedure used

The first step of the study was a literature analysis that allowed for adopting research assumptions and defining the study aim. In the next step, it was assumed that the survey method was the optimal choice to obtain a complete characterization of organic processing enterprises with the characteristics of agile organizations. In this method of data collection, it is important to obtain relevant information using a survey questionnaire. A face-to-face interview with managers of the surveyed enterprises was used (Krok, 2015).

It is also important to select an appropriate research sample. This study included all enterprises engaged in the production of organic food in Poland (in accordance with the regulation requiring both the certification of such production and reporting it to the central register). Obtaining access to the data required a formal request to an office directly subordinate to the Polish Ministry of Agriculture and Rural Development under the procedure provided for obtaining public information in accordance with Article 9(2) of the Organic Agriculture Act of 25 June 2009 (Journal of Laws 2020, Pos. 1324). In the first quarter of 2021, a response was received with an attached list (with contact information) of organic processing producers from all over Poland (as of 31 December 2019). The list included a total of 566 organic food enterprises which, in addition to processing organic raw materials, were also involved in packaging and labeling of organic products. To implement

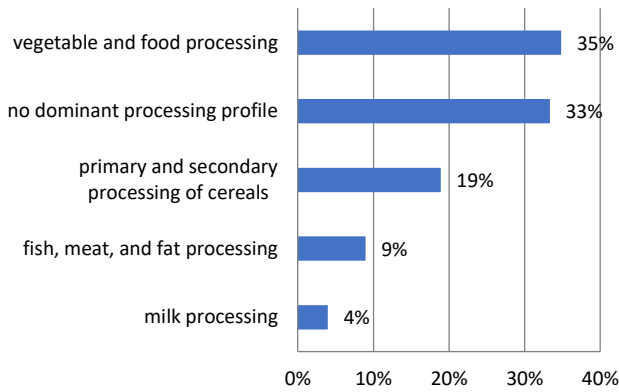


Fig. 2. Percentage of organic food processing enterprises in Poland (by business profile)

Analysis of the results of the survey reveals that microenterprises accounted for 25% of the entities surveyed, and 10% were large enterprises. As can be seen in Figure 3, medium-sized (34%) and small (31%) enterprises in total accounted for 65% of all identified entities of this type.

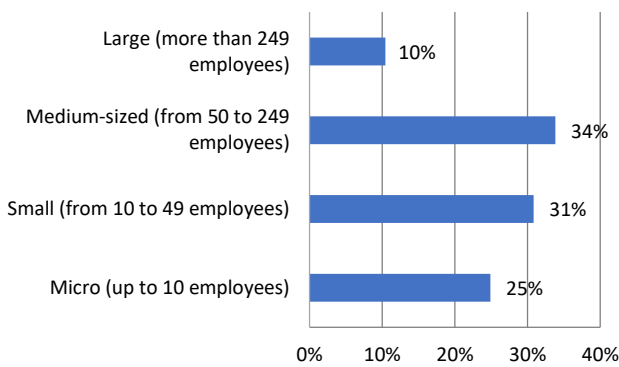


Fig. 3. Size of enterprises surveyed

The data shown in Figure 3 allows for an interesting analysis of the distribution of enterprises of different sizes by industry, as illustrated in Fig. 4.

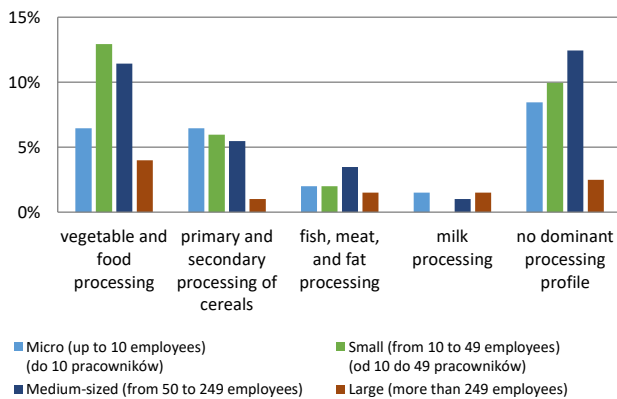


Fig. 4. Size of enterprises by sector

The categorization of entity size in general (Figure 3) is not fully reflected in the breakdown by sector. In milk and cereal processing, microenterprises were the most numerous. In the case of fruit and vegetable processing, the largest number was observed in small enterprises. In contrast, business entities without a dominant processing profile were mainly medium-sized enterprises (see Figure 4).

Analysis of the results of the survey also shows that enterprises with only Polish capital dominated the country, accounting for 76% of the sample. Furthermore, 12% were entities with foreign capital and the same number with mixed capital, i.e. Polish and foreign, as shown in Figure 5.

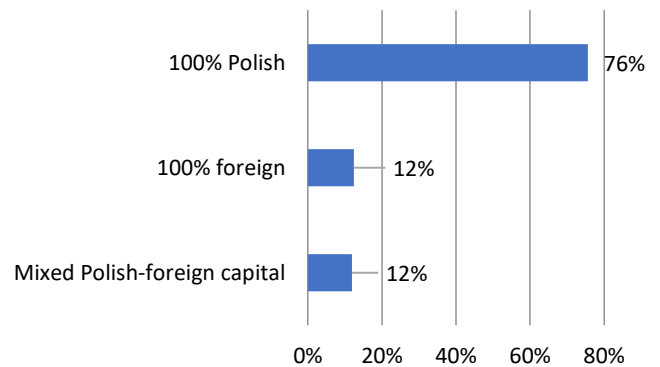


Fig. 5. Capital structure in the enterprises surveyed

Interesting results are obtained from a detailed analysis indicating the share of foreign (Fig.6) and domestic (Fig.7) capital by region of Poland.

As indicated by the results, the capital structure of the surveyed enterprises is not the same across regions and strongly depends on the proximity and accessibility of foreign markets. A comparison of Figs. 6 and 7 reveals that enterprises with foreign capital were mainly located in the west of Poland. A unique situation was identified in the Lubusz region, where as many as half of the enterprises surveyed had 100% foreign capital. The pronounced percentage of such capital was also observed in Greater Poland, Lower Silesian, and West Pomeranian Voivodeships. In the central and eastern parts of Poland, there were predominantly enterprises with 100% Polish capital. By contrast, in the Lower Silesian, Greater Poland, and Lubusz Voivodeships, native capital accounted for half the share. Based on the data presented, it is worth noting that the Opole Voivodeship has developed its own model of capital structure: two of the three identified entities have mixed capital, and one (33%) had entirely Polish capital.

From the holistic perspective on enterprises with both organic and conventional food production included in their business profile, a decisive factor creating their agile behavior may be the length of their operation in the market. The survey showed that in the analyzed group of processors, as many as 78% had been in the market for more than 10 years, and 14% were those which had operated for 6 to 10 years. Only 7% of the enterprises were less than 5 years in the market (Figure 8).

The data shown in Figure 10 encouraged the analysis of the scope of operations of the enterprises by sector, as presented in Fig. 11.

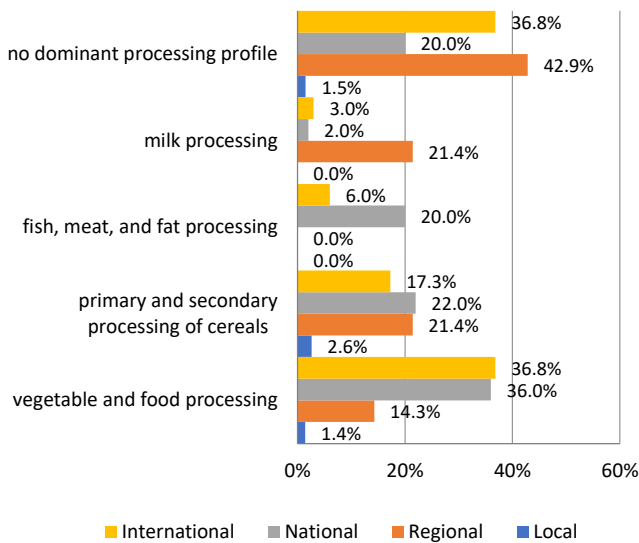


Fig. 11. Distribution of the scope of operations of the enterprises surveyed by sector

As seen from Figure 11, activities with an international scope are mainly found in entities without a dominant processing profile, those engaged in fruit and vegetable processing, and resilient in the domestic market. Enterprises included in the category of cereal processors sold their products in national and regional markets, milk processing was dominated by the regional markets, whereas meat, fish, and fats were sold in the national market. Figure 11 shows that a small percentage of entities operated in short supply chains based essentially on local demand (Struś et al., 2020).

5. Conclusions

The present research and the statistical analysis allow for generalization about the profile of the enterprises that process both conventional and organic foods. The structure ratio (expressed as a percentage) was assumed to be a measure used to identify a typical enterprise. Assuming that the population of entities studied changes over time, it is necessary to test the statistical significance of the indicators in determining a typical enterprise. Contingency tables were used to determine the structure ratios (significantly different from zero). A list arranged in a lexicographic order of the relevance of each individual's characteristics of the entity was then created. This helped identify a chain of attributes of an entity with the most important and statistically significant characteristics that differentiate between them in the population. The procedure revealed four layers of population breakdown: industry, time of operation, scope, and capital. The results of such stratification (with significantly different structure ratios) are presented in Figure 12.

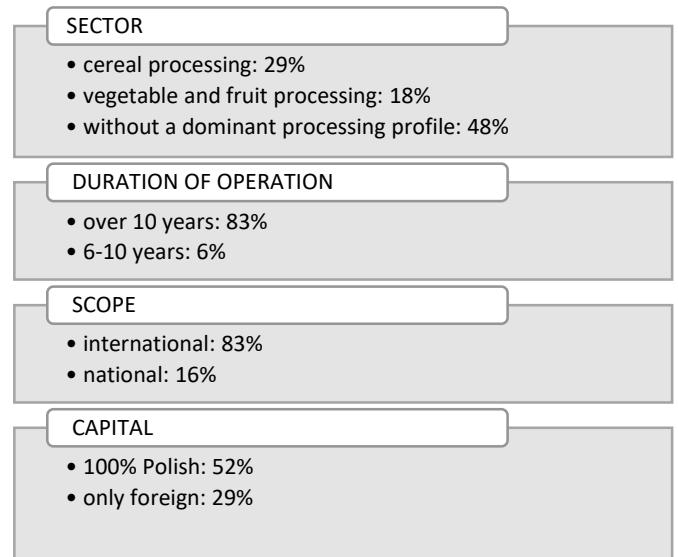


Fig. 12. Characteristics of a typical entity producing both organic and conventional foods

The research revealed that the typical enterprise was located in the western part of Poland (Greater Poland). It employed up to 250 workers and specialized in vegetable and fruit production, and cereal processing, or had no dominant production specialization. Such enterprises were primarily with domestic capital, operating in the market for more than 10 years. They were involved in exporting, and one in six, produced for the domestic market. Not a single enterprise limited its operations to the local market.

A summary of the data in Figure 12 can provide information and guidance for further detailed research into the operation of dual food (conventional and organic) processing enterprises, with organic food processing burdened with additional requirements due to legislation.

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波兰有机食品加工企业的敏捷管理

關鍵詞

有机食品
敏捷管理
有机食品加工

摘要

随着地方、国家和国际市场的不断扩大和顾客需求的变化，企业面临着实施竞争有效解决方案的需求。据预计，敏捷管理能够帮助企业实现这一目标。因此，许多组织，包括食品行业，都在利用敏捷管理解决方案，并将消费者行为变化视为增长机会。本研究具有理论和实证性质。理论考虑的基础是对敏捷性概念及其对组织的相关性的科学文献的批判性分析。许多出版物中强调的问题多样性为确定研究空缺、制定研究目标和进行实证研究提供了基础。研究描述了企业的敏捷管理，指出了适用于有机食品生产的特点和机制，并对波兰的有机食品加工企业进行描述。调查于2021-2022年进行，允许作者分析企业的位置、规模、生产类型或资本。这是通过正确设计的问卷和统计分析实现的
