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The Possibilities of Cooperation among Family Firms within a Cluster Environment

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Abstract:

Purpose: *The aim of the article is to analyze the potential for effective implementation of clusters in the context of family businesses operating in the Polish market.*
Design/Methodology/Approach: *The article seeks to address the question of whether and what are the possibilities of implementing clusters in the operations of Polish family firms. It investigates the factors contributing to the success or failure of cluster initiatives among family businesses. The hypothesis posited is that family firms in the Polish market operate in isolation, and exhibit limited willingness to collaborate, yet despite these constraints, they are capable of engaging in clusters as a solution to some of their market challenges. The research methodology comprised Computer-Assisted Telephone Interviews (CATI) and In-Depth Interviews (IDI) conducted in 2023 on a representative sample of 448 family firms.*
Findings: *The article presents the results of research on family firms in Poland, focusing on their market situation, analysis of constraints, and opportunities for utilizing networks in the development of these enterprises. According to the research findings, the majority of family firms are not familiar with the cluster concept, but some have experience in operating within networks. Family firms demonstrate a weak willingness to collaborate with other entities, as they highly value their autonomy and independence. They are generally not interested in influencing regional strategy, workforce transfer, or collaboration with academic and research centers. Factors essential to the essence of clusters are rejected by these firms. Family firms attribute the failures of clusters to a lack of conviction in the cluster concept itself, top-down cluster stimulation, clusters emerging as a response to trends, lack of appropriate personnel, and a lack of communal action habits typical for clusters. Family firms recognize that access to markets, innovative technologies, and entrepreneurialism are the primary drivers of cluster success. However, the research results indicate that increased awareness of clustering stimulates actions that contribute to cluster success. Therefore, despite the family firms' distant approach to clusters, it is acknowledged that these firms*

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need to be made aware of the necessity of forming clusters as a way out of isolation and focusing on their own activities. To this end, a cluster-building procedure tailored to family firms has been developed, as engaging in cluster collaboration can be an opportunity for the development of these firms. This has the potential for success because the pursuit of cost reduction is one of the main benefits of participating in a cluster, and family firms are interested in this aspect.
Practical Implications: *Current market trends, along with prevailing quality requirements, increase the significance of clusters in shaping growth and development processes based on a set of criteria grounded in sustainability attributes. Consequently, the analysis of cluster utilization not only becomes a topical research issue but also a practical tool supporting the enduring and sustainable development of these firms.*
Originality/Value: *While numerous studies have focused on family firms and their management, relatively few of these studies have addressed the potential application of clusters by family firms. The research undertaken has yielded insights into the clustering of family firms, identifying causes of failures as well as the benefits of collaboration, which may serve as a valuable source of information, utilized, among other contexts, in the decision-making process regarding engagement in long-term agreements. In this regard, the present article seeks to fill a gap in the realm of cluster formation by family firms.*

Keywords: *Clustering, collaboration, network, entrepreneurship, competitiveness, sustainable development.*

JEL Classification: *L10, L20, L25, L26, O39.*

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1. Introduction

Contemporary family enterprises in Poland face challenges associated with the dynamic business environment while seeking strategies for sustainable development. In this context, attention is drawn to the potential inherent in clustering - a formation bringing together enterprises with similar profiles of activity or located in the same region. Clusters, as concentrations of firms with similar interests, present a range of attractive prospects for family enterprises.

This article explores the potential of clustering for family firms in Poland, aiming to analyze the possibilities of effective cluster implementation in the context of family enterprises operating in the Polish market and to indicate that family firms have the capability to form clusters and should utilize them.

The authors attempt to identify factors contributing to the success or failure of family firm clusters, focusing on the question of the potential application of clusters in the activities of Polish family firms.

The research findings on family firms in Poland, focusing on their market situation, constraints analysis, and network utilization opportunities in their development, are presented.

The research methodology comprised Computer-Assisted Telephone Interviews (CATI) and In-Depth Interviews (IDI) conducted in 2023 in the Opole, Małopolska, Lower Silesia, and Silesia voivodeships on a representative sample of 448 family firms. The hypothesis posits that family firms operate in isolation in the Polish market, exhibit limited willingness to collaborate, yet are capable of engaging in clusters as a solution to some of their market challenges. The hypothesis was positively verified, leading to the proposal of a procedure (stages) for building family firm clusters.

The conducted research and its analysis yielded knowledge regarding the potential of family firm clustering. Understanding the benefits of collaboration can serve as a useful source of information for family firms and can be utilized, among other contexts, in the decision-making process regarding engagement in long-term agreements.

Similarly, knowledge of the causes of failures and entrepreneurs' concerns can inform business environment support institutions and advisory services to more effectively encourage and justify the need for cluster-type networks. In this regard, this article aims to fill a gap in the area of cluster formation by family firms.

2. Literature Review

2.1 Specificity of Family Firms

The article focused on analyzing the conditions for the functioning of family firms in the context of the potential application of clustering, utilizing insights into the success and failure factors of family firms related to clustering. Clusters, or concentrations of enterprises operating in the same sector or region, represent an intriguing strategy for family enterprises (Havlicek *et al.*, 2013).

The main benefits include increased competitiveness, better exchange of knowledge and experiences, and the joint utilization of resources. Clusters can foster synergy among family firms, enabling them to achieve greater economies of scale. Collaboration within a cluster can result in more efficient resource utilization, which is particularly significant for family businesses, where values transmission and succession management are key issues (Cristea *et al.*, 2022).

Additionally, clusters offer the opportunity to build a stronger brand for family firms through joint marketing activities or participation in research and development projects. Collective representation within a cluster can enhance the visibility of enterprises in both domestic and international markets.

Utilizing clustering as a pathway for development is a choice for family businesses that, when implemented systematically, allows them to emerge from self-isolation and the deepening specialization conducive to market collusion.

However, there are challenges associated with implementing clusters in family firms, such as the need to build trust, align strategies with common goals, effectively manage cultural differences and family values, or even overcome barriers of isolation and lack of knowledge.

Despite the challenges and the hesitant approach of family firms towards clusters, leveraging clusters can contribute to the long-term development of family firms in Poland, enhancing their stability, competitiveness, and ability to adapt to changing business environments.

The conducted research, whose results formed the basis for the proposed concept of building a cluster of family firms, was not without limitations, such as data collection through a self-designed questionnaire, which had to be shortened due to necessity, leading to the omission of certain aspects. Researchers were also dependent on the voluntary cooperation of respondents. Future research can focus on the types of clusters dedicated to family firms, the synergistic effects of family firm clusters, and the role of family firm clusters in the Industry 5.0.

Astrachan, Klein, and Smyrnios (2002) suggest that family firms can be defined using the F-PEC index, which measures the familial nature of the firm through dimensions of power (participation in management and control), experience (transmission of management and ownership across generations), and culture (family identification and values).

Litz (1995) defines a family firm as an enterprise where two or more individuals related by blood or marriage are involved in managing the company. This definition underscores the role of familial relationships in business activity. Handler (1989) describes a family firm as a business owned and/or managed by members of the same family or multiple families, with the intention of continuing the firm as a family enterprise through successive generations.

These definitions highlight the diversity of ways in which family firms can be perceived and analyzed, depending on factors such as control, succession intent, family involvement, and identification with family values (Smolarek and Dzieńdziora).

It is suggested that for a comprehensive assessment of family firms and their performance, it is necessary to consider not only financial dimensions but also non-financial ones, as cultural dimensions, including individualism and uncertainty avoidance, significantly impact the decisions and outcomes of family firms (Rachmawati *et al.*, 2022).

Signaling the family character of the firm is becoming increasingly imperative for family firms, driven by the need to highlight distinguishing features among competitors (Craig *et al.*, 2008; Dos Santos *et al.*, 2019). Existing literature demonstrates that effective communication of the identity of family firms helps derive benefits from family ties by improving firm-consumer relationships (Rovelli *et al.*, 2022; Beliaeva *et al.*, 2022; Chaudhary *et al.*, 2021; Andreini *et al.*, 2020; Binz Astrachan *et al.*, 2019; Valenza, 2023; Norena-Chavez and Thalassinos, 2022).

The literature on family entrepreneurship is extensive, and in comparison, in Poland, family firms are defined through the lens of ownership and management, with a family firm perceived as one where the family exercises control over the enterprise through majority ownership and plays key roles in management and strategic decision-making. This definition underscores the role of ownership and family influence on the company's development direction (Nowak, 2015).

In recent years, research on family businesses has developed significantly (Zellweger *et al.*, 2010; Araya-Castillo *et al.*, 2021; Manzano-García *et al.*, 2023). Another approach mainly focuses on succession issues, where a family firm is regarded as a business with an intention to transfer management and ownership to subsequent generations of the family, emphasizing long-term planning and family continuity in business (Kowalska, 2017).

Definitions emphasizing cultural and value aspects also emerge, where a family enterprise, in addition to economic criteria, is guided by specific family values and traditions, influencing organizational culture, relationships with employees, and business partners (Dąbrowska, 2016; Bargoni *et al.*, 2023).

The aforementioned definitions indicate the diversity of approaches to defining family firms, and as the discourse on family entrepreneurship evolves, new definitions and research perspectives emerge, making this field a dynamically developing part of management and entrepreneurship studies.

However, examining the issue of family firms from a historical perspective requires attention to changing economic, social, and cultural contexts over centuries. From the earliest forms of business organization to contemporary global corporations, family firms have played a crucial role in the development of trade, industry, and innovation.

Already in ancient Egypt and Mesopotamia, family enterprises were involved in agriculture, crafts, and trade. The transmission of the profession from father to son was common, and families often specialized in specific fields. In ancient Greece and Rome, family enterprises dominated sectors such as agriculture, crafts, and trade. Many of these enterprises operated on principles similar to modern family firms, emphasizing the transfer of knowledge and wealth from generation to generation.

The Renaissance period brought about the flourishing of cities and trade, along with family enterprises such as the Medicis in Italy, who developed a powerful banking and trading empire. Family enterprises were centers of innovation, culture, and politics at that time. With the Industrial Revolution, many family firms transformed, expanding their operations and introducing modern production methods.

Large industrial family dynasties, such as the Krupps in Germany or the Rockefellers in the USA, began shaping the global economy. The 20th century brought globalization and further economic modernization (Colli, 2003; Rzepka *et al.*, 2023). Many family firms became international corporations while retaining family values and management (examples include Ford in the United States, Toyota in Japan, and Ferrero in Italy). Contemporary family businesses in Poland are facing new challenges such as digitization, global competition, and evolving societal expectations.

Simultaneously, new opportunities such as e-commerce, sustainable development (Ahn *et al.*, 2021; Ferreira *et al.*, 2021), and technological innovations are opening up new paths for their development. The history of family businesses demonstrates their ability to adapt and survive in a changing world. Their unique combination of tradition, family values, and flexibility makes them an integral part of economic and social history worldwide (Poza, 2010).

Family businesses possess a unique and strategic resource in their family nature (Alonso-Dos-Santos *et al.*, 2019). To thrive, they must also consider the impact of the family on the business itself, as it may vary across different firms. For instance, in companies where a family member in a strong position is inclined toward adopting new technology, various obstacles can be overcome more swiftly, and these companies typically demonstrate more effective strategies in response to disruptive industry changes (de Groote, Conrad, and Hack, 2021).

Family enterprises constitute a specific group of economic entities and are significant participants in the market economy. Due to the values they bring to economic and social life, they are considered a valuable element of the entrepreneurship sector. They have been the subject of interest in international literature since the late 1970s. In Poland, particularly in recent years, there has also been a growing focus on family enterprises, which have become the subject of interest across various scientific disciplines.

Family businesses represent a significant percentage of all enterprises in Poland. Although exact numbers may vary depending on the definition of a family business, estimates suggest that they may encompass anywhere from 60% to even 90% of all enterprises. Published results in 2017 once again demonstrated that these businesses are a key pillar of the European economy - family businesses in the surveyed EU countries account for an average of 61.3% of all enterprises (COSME Project, 2018).

In Poland, as much as 92% of companies are family businesses, but research indicates that only 36% identify with this concept (Family Business Management, 2021). Family businesses in Poland operate across a wide range of sectors, including manufacturing, services, trade, agriculture, and technology.

They are a significant source of employment, accounting for a large portion of employees in the SME sector, and they make a significant contribution to Poland's Gross Domestic Product (although precise numbers may vary according to different sources).

One of the main challenges for family businesses in Poland is transferring the business to subsequent generations. The succession process requires careful planning and is crucial for the long-term stability and growth of the company. In addition to succession, other challenges include professional management, access to financing, innovation, and competitiveness in global markets. Implementing the concept of clustering can enhance competitiveness.

2.2 Justification for the Establishment of Family Firm Clusters in Poland

The advancement of entrepreneurship within family firms could be facilitated through the concentration of production and service provision potential within regions. One method to achieve such a state is through clusters, which harness comprehensive knowledge and information transfer to create strong competitive advantages within a region (Pypłacz, 2013; Harms, 2014). The results of empirical studies show that high-tech firms functioning in networks and clusters are more likely to start their international expansion early (Daszkiewicz and Wach, 2023a; 2023b).

In the literature, a cluster is defined as a "spatially concentrated agglomeration of specialized, yet competing and cooperating, or interrelated enterprises, institutions, and organizations connected by a system of mutual formal and informal relationships based on the so-called developmental trajectory (e.g., technology, services, market)" (Kruczek and Żebrucki, 2014).

A cluster can become competitive vis-à-vis other entities when it becomes an attractive center of influence on the environment and attracts further resources. Effective clusters contribute to increasing competitiveness and cooperation, thereby fostering the activation of the local community (Roman, 2017; Ghinoi *et al.*, 2023; Grashof, 2024).

Family firms are a specific group of economic entities, representing an important and valuable element of the entrepreneurial sector. One of the significant factors determining the development of these enterprises is the necessity to enhance their competitiveness. Concepts related to strategic aspects of operation, including collaboration, can be particularly helpful in this regard.

A family firm, like any other business, aims to generate current income. However, in most cases, it is also characterized by being passed on to subsequent generations. As it constitutes an element of family wealth, this reinforces the need for its maintenance, regardless of financial merits.

The development of family enterprises, therefore, necessitates the consideration of strategic aspects (Jamil, Stephens, and Md Fadzil, 2024). In the case of family firms, an additional challenge lies in the fact that strategies should encompass shared values and visions for both the company and the family (Duczkowska-Piasecka, 2012). This intertwining of business and family objectives is particularly evident here.

Establishing clusters by family firms makes sense for several reasons, as clusters – concentrations of enterprises, institutions, and other entities within a specific geographical region, interconnected within a particular industry or sector – can bring significant benefits both to individual companies and the entire industry.

Clusters enable family firms to collaborate with other enterprises, which can lead to the sharing of knowledge, experience, and best practices. They facilitate the building of strong business networks, crucial for development and innovation (Ciślik, 2015).

Within clusters, firms can more easily access specialized suppliers, skilled workers, and cutting-edge technologies. The proximity and collaboration with other companies and research institutions can accelerate innovation and the development of new products.

Clusters can facilitate the market expansion of family firms and access to new customers through joint marketing initiatives and industry trade fairs. Collaboration within the cluster can lead to cost reductions and increased operational efficiency, thereby enhancing firms' competitiveness. It is known that clusters often receive support from local and regional authorities, which may offer tax breaks, grants, or assistance in accessing financing (Szambelańczyk, 2012).

Family firms within clusters can contribute to economic growth and regional development by creating jobs and promoting local entrepreneurship. Collaboration within the cluster can also support family firms in the succession planning process, offering access to knowledge, mentors, and potential external leaders. Being part of a cluster can help family firms increase their sustainability through market diversification and income source stabilization.

Therefore, the integration of family firms into clusters can yield a range of strategic, operational, and financial benefits, fostering their long-term growth and innovation. This is particularly important in the face of global competition and rapid market changes, where collaboration and networking can be key to success.

The conditions for the development of family firm clusters in Poland are complex and encompass both favorable factors and barriers. Poland, with its dynamically growing economy and strong tradition of family entrepreneurship, offers unique opportunities for cluster development. Many firms in Poland operate and evolve within families across generations, fostering the building of long-term business relationships.

Access to EU funds and national support programs for clusters and innovation can be a crucial factor conducive to the development of family firm clusters. The Polish economy offers broad opportunities for business development, including for high-tech sectors, which may foster the formation of clusters. The presence of organizations supporting entrepreneurship development, such as chambers of commerce, industry associations, and technology parks, facilitates the exchange of knowledge and experiences among firms.

However, some barriers hinder family firms from clustering in Poland. There is often a reluctance to cooperate with competitors or fear of losing control over the company, limiting the willingness to engage in cluster structures. There is a widespread lack of awareness of the benefits of participating in clusters and a lack of experience in managing such structures, which may hinder initiatives for family firm clusters (Pietrzykowski and Sudolska, 2013).

Complicated legal and administrative procedures can be an obstacle to effectively creating and managing clusters, and access to funding, which is crucial for cluster development, is limited, acting as a barrier to initiatives. Additionally, competition between regions for investments and projects often affects the coherence and effectiveness of cluster activities.

In light of the above conditions, it is worth mentioning strategies to counteract the barriers to creating clusters by family firms. Such strategies include:

- Promoting a culture of cooperation through education and promoting cluster successes, can help overcome mental barriers.
- Simplifying procedures by working on simplifying legal and administrative regulations.

The development of support programs aimed at family firms, offering assistance in financing, management, and innovation, is being observed. There is also a strengthening of support networks, building strong support networks and platforms for exchanging experiences among family firms.

Typically, these strategies are undertaken by the Ministry of Development, Labor, and Technology, the Polish Agency for Enterprise Development (PARP), regional development agencies, chambers of commerce and industry associations, universities and research institutes, business consultants and strategic advisors, as well as owners and boards of family firms, cluster boards, and their members, and of course, the European Union and other international organizations.

The conditions for family firm clusters in Poland show that there are both opportunities and challenges. The key to success lies in effectively addressing these challenges through cooperation between firms, government support, industry organizations, and the utilization of available resources and support programs (Krzakiewicz and Cygler, 2014).

In light of the literature analyzing the impact of family firm identity on clusters (Zellwegler *et al.*, 2013), it can be observed that the organizational identity of family firms, reflecting unique values, traditions, and long-term visions, influences how family firms engage in business relationships, make strategic decisions, and collaborate with other entities. Several aspects can be identified through which the organizational identity of family firms may influence the creation and functioning of clusters.

Certainly, a strong sense of identity and shared values in family firms facilitates the building of deep, trusted relationships with other enterprises, which is crucial in creating effective clusters. Identity-based on family values can promote long-term cooperation instead of short-term competition, which is beneficial for cluster development. Family firms often focus on long-term development and stability, which may favor investments in innovations and cluster projects that do not always yield immediate profits.

Organizational identity, promoting strong values and mission, can motivate family firms to seek innovative solutions, which can be supported by cooperation within clusters. A strong organizational identity of family firms attracts high-quality talents that identify with the company's values, thereby strengthening innovative potential and cluster competitiveness. Furthermore, family firms often have access to unique resources and networks, which can be valuable in building and developing clusters (Astrachan and Shanker, 2003).

It is worth noting that a strong family identity can lead to nepotism and limit openness to external ideas and cooperation, which may hinder cluster dynamics. Additionally, family conflicts can affect the stability and credibility of the firm within the cluster, which may discourage potential partners from collaborating. Family firms, with their stability and roots in local communities, can play a leadership role in cluster initiatives, promoting cooperation and innovation (Steeger and Hoffmann, 2016).

The organizational identity of family firms, reflecting their unique characteristics and values, plays a crucial role in shaping the opportunities for building and developing clusters. To fully exploit these opportunities, family firms must strike a balance between maintaining their unique identity and being open to collaboration and innovation within broader business networks (Zellweger, 2017).

3. Research Methodology

The research methodology titled "Modeling the Cooperation of Family Firms Based on Clusters Using Outsourcing" relied on applied CATI (Computer-Assisted Telephone Interviewing) and IDI (In-Depth Interviews) research methods conducted on a statistically selected representative sample of family enterprises, totaling 448 units, drawn from the Silesian, Lesser Poland, Lower Silesian, and Opole voivodeships.

The selection of voivodeships was purposeful, based on the possibility of family firms networking in the chosen area (the creation of such clusters is the subject of the research project, for which the geographical criterion is predominant). The study was conducted in 2023. The SURNEO software was used for data analysis. Considering a general population size of N=972,867, a fraction size of 0.5, and a confidence level of 95%, the minimum sample size required was 400, ensuring the reliability criterion was met.

Data processing included, frequencies (quantitative), shares (percentage), analysis of associations using V-Cramer's and Tschuprow's coefficients, contingency tables, building a classifier model, and testing the significance of features using the Kruskal-Wallis test. Information interpretation was based on analysis, diagnosis, synthesis, comparison, deductive and inductive reasoning, as well as statistical inference. In the study, it was assumed that responses to questions constitute features with nominal scale attributes.

For the analysis of the strength of dependence between nominal (categorical) variables, various measures are applied, including:

The chi-square test for independence: This test assesses whether there is a statistically significant relationship between two categorical variables in the population. It utilizes a contingency table that presents the frequencies of each combination of variable categories. Based on observed and expected frequencies, the chi-square statistic is calculated, indicating whether the differences between them are large enough to consider the variables dependent.

Cramer's correlation coefficient and Tschuprow's indicator: These are measures of the strength of association between two categorical variables, based on the chi-square test statistic. Their value ranges from 0 to 1, where 0 indicates no dependence, and values closer to 1 indicate stronger dependence. This is particularly useful when both variables have more than two categories, as is the case in this project. Given the extensive nature of the study, this article focuses solely on the results concerning the potential implementation of clusters by the surveyed family firms.

Table 1 presents the characteristics of the research sample in the context of descriptors describing the respondents and the surveyed firms.

Table 1. *Characteristics of the research sample*

research sample = 448 (100%)		
Characteristics describing enterprises covered by the survey:		
The voivodeship in which the company's headquarters is located	Silesian Voivodeship	32.4%
	Lower Silesia Voivodeship	29.5%
	Opole Voivodeship	13.4%
	Lesser Poland Voivodeship	24.8%
The main field of the company's activity	production	28.1%
	trade	38.4%
	services	50.0%
Legal form of the company	natural person	15.2%
	sole proprietorship	50.4%
	partnership	16.3%
	capital companies	11.8%
	partnerships	7.4%
	refusal to answer	0.2%
Company size by number of employees	micro-enterprise	79.7%
	small enterprise	13.4%
	medium enterprise	5.4%
	large enterprise	1.3%
	hard to say	0.2%
The company's activity market	local market	57.6%
	regional market	14.3%
	domestic market	13.4%
	foreign market	9.2%
	world market	5.1%
	hard to say	0.4%
Characteristics describing respondents participating in the survey:		
Sex of respondents	woman	35.0%
	man	65.0%
Age of respondents	up to 25 years old	1.6%
	26-35 years old	19.6%
	36-45 years old	36.8%
	46-55 years old	23.9%

	over 55 years old	18.1%
Education of respondents	primary	0.2%
	vocational	7.8%
	secondary	39.3%
	I-cycle higher education (Bachelor's)	10.9%
	II-cycle higher education (Master's degree)	41.1%
	academic title/degree	0.7%
Seniority of respondents In company	up to 1 year	0.7%
	from 1 to 2 years	1.6%
	from 2 to 5 years	11.6%
	from 5 to 7 years	10.5%
	from 7 to 1 years	13.8%
	over 10 years	61.6%
	hard to say	0.2%
Position held of respondents in company	owner	46.9%
	senior employee	2.7%
	middle-level employee	6.3%
	main partner	8.0%
	one of the partners	19.9%
	member of the Management Body	3.3%
	member of the Supervisory Board	0.2%
	refusal to answer	0.4%

Source: *Own study based on empirical research.*

The hypothesis is based on the assumption that family firms operate in isolation in the Polish market, and have limited willingness to collaborate, but despite these constraints, they are capable of joining clusters as a solution to some of their market problems. The hypothesis has been positively verified, and in the subsequent section of the article, selected research findings are presented.

4. Research Results and Discussion

4.1 Family Firms and Clusters

The research revealed that the majority of family firms are unfamiliar with the concept of clusters (73.7% of all respondents) and have a neutral attitude towards them. However, some firms (6.7%) have experience participating in networks, primarily as supply chains, strategic alliances, or franchising relationships.

Despite the limited knowledge of cluster concepts and reluctance to collaborate with other entities, especially based on long-term agreements, firms aim to reduce costs (55.1%), which is seen as one of the main benefits of participating in a cluster.

Most family firms are not interested in cluster-related meetings because they highly value their autonomy and independence (75.0%). However, they would be willing to benefit from funding from local authorities targeted at clusters (26.6%).

Family firms are generally not interested in influencing regional strategy (38.4%), workforce transfer (37.9%), collaboration with academic and research centers (35.5%), utilizing shared infrastructure (35.0%), joint research projects (33.3%), or innovation (23.4%). These factors, essential to clusters, are largely rejected by these firms. They are reluctant to consider cooperation, and their previous contacts with other firms have mainly involved information exchange, joint sales, or occasional joint projects. Almost all firms are not involved in incubators/start-ups and do not engage in market research cooperation, joint seminars, exhibitions, or joint production.

In most cases, conducting family business neither limits nor stimulates contacts with other firms. Family businesses perceive their enterprises as moderately developed (58.9%), moderately innovative (61.6%), not rooted in specific economic activities (87.9%), and strongly competitive within their industries (78.1%).

Family firms are aware of the failures of clusters, and according to them, the most common reasons for cluster failures are a lack of conviction in the concept, top-down stimulation of clusters, emergence as a trend, assumptions about sharing (which family firms are not interested in), lack of appropriate personnel to work in clusters, and a lack of communal habits appropriate for clusters.

Table 2 presents the assessment of the causes of cluster failures in the opinion of family firms, where 1 indicates "insignificant (completely irrelevant)," 2 - "slightly relevant," 3 - "moderately relevant," 4 - "relevant," and 5 - "very relevant."

Table 2. *Causes of cluster failures in the opinion of family firms*

No.	**Characteristics**	**Frequency**						**Percent**					
		1	**2**	**3**	**4**	**5**	**hard to say**	**1**	**2**	**3**	**4**	**5**	**hard to say**
a	Top-down stimulation	5	2	8	14	21	50	1.1	0.4	1.8	3.1	4.7	11.2
b	Lack of confidence in the concept	3	1	7	18	23	48	0.7	0.2	1.6	4.0	5.1	10.7
c	Lack/limitation of financial resources	4	4	14	14	11	52	0.9	0.9	3.1	3.1	2.5	11.6
d	Lack of appropriate staff	7		9	23	11	50	1.6		2.0	5.1	2.5	11.2

e	Little information	5	2	12	17	13	51	1.1	0.4	2.7	3.8	2.9	11.4
f	Shortages in material resources	4	4	15	15	8	53	0.9	0.9	3.3	3.3	1.8	11.8
g	Weak interest from the regional authorities	3	6	13	10	14	53	0.7	1.3	2.9	2.2	3.1	11.8
h	Non-formalization of activities	5	8	14	10	8	54	1.1	1.8	3.1	2.2	1.8	12.1
i	Little/poor availability of so-called "good practices"	4	4	14	15	11	50	0.9	0.9	3.1	3.3	2.5	11.2
j	Treating clusters as a fad	5	3	8	14	17	52	1.1	0.7	1.8	3.1	3.8	11.6
k	Cultural conditions	3	3	20	12	10	51	0.7	0.7	4.5	2.7	2.2	11.4
l	Lack of habits of collective action	2	3	10	18	16	51	0.4	0.7	2.2.	4.0	3.6	11.4
m	Reluctance to share	4	3	7	16	17	3	0.9	0.7	1.6	3.6	3.8	11.8
n	Mental barriers of managers	4	4	1	14	14	52	0.9	0.9	2.5	3.1	3.1	11.6
o	Communication barriers	1	6	15	13	12	52	0.2	1.3	3.3	2.9	2.7	11.6

Source: *Own study based on empirical research.*

Family businesses acknowledge that access to markets, innovative technologies, entrepreneurial activities of firms, and, subsequently, access to business support services and information are crucial factors influencing the success of a potential cluster. Family firms evaluate that public authorities impact clusters primarily through protective shields, tax incentives for investments, facilitating the flow of information, and contacts (see Table 3, which presents the assessment of factors influencing cluster success according to family firms, where 1 indicates "no influence on success"; 2 - "low influence on success"; 3 - "moderate influence on success").

Table 3. *Factors influencing cluster success in the opinion of family businesses*

No.	**Characteristics**	**Frequency**						**Percent**					
		1	**2**	**3**	**4**	**5**	**hard to say**	**1**	**2**	**3**	**4**	**5**	**hard to say**

a	Innovative technologies	2	1	9	13	22	54	0.4	0.2	2.0	2.9	4.9	12.1
b	Infrastructure	3		7	22	13	56	0.7		1.6	4.9	2.9	12.5
c	Entrepreneurship of companies	2		6	18	21	54	0.4		1.3	4.0	4.7	12.1
d	Specialized services	3	1	5	22	16	54	0.7	0.2	1.1	4.9	3.6	12.1
e	Access to business support services	3	1	9	15	19	54	0.7	0.2	2.0	3.3	4.2	12.1
f	Access to information	2		3	25	19	52	0.4		0.7	5.6	4.2	11.6
g	Strong leadership	1	3	11	20	13	53	0.2	0.7	2.5	4.5	2.9	11.8
h	External economic influences	1		14	19	11	55	0.2		3.1	4.2	2.5	12.3
i	Reducing prejudices - changes in the mentality of managers	2	3	11	18	12	54	0.4	0.7	2.5	4.0	2.7	12.1
j	Partnership of entities	1	2	10	23	12	53	0.2	0.4	2.2	5.1	2.7	11.8
k	Human capital	1	1	10	22	13	54	0.2	0.2	2.2	4.9	2.9	12.1
l	Presence of large companies	3	1	16	15	11	54	0.7	0.2	3.6	3.3	2.5	11.6
m	Access to sources of financing	1	2	6	20	18	54	0.2	0.4	1.3	4.5	4.0	12.1
n	Access to markets	1	1	7	15	24	52	0.2	0.2	1.6	3.3	5.4	11.4
o	Competition	2	1	9	17	17	54	0.4	0.2	2.0	3.8	3.8	12.1
p	Communication	1		17	15	14	54	0.2		3.8	3.3	3.1	12.1
q	Virtual/IT aspects	2	4	15	15	9	54	0.4	0.9	3.3	3.3	2.0	12.1
r	Family/historical traditions	6	5	13	10	11	55	1.3	1.1	2.9	2.2	2.5	12.3

Source: *Own study based on empirical research.*

4.2 Concept of Building a Family Business Cluster

Despite the reserved approach of family businesses towards clusters and their desire to maintain autonomy, it has been recognized that these firms need to be made aware of the necessity to create clusters as a way out of isolation and focus on their activities. It was decided to propose the implementation of the cluster concept to family businesses because a thorough correlational analysis yielded high correlation coefficients (see Table 4), leading to the conclusion that "knowledge of the cluster concept" (V27) strongly correlates with "perception of the cluster" (V31), meaning that the more managers know about the cluster, the higher the level of their perception increases, and "interest in meetings promoting the cluster" (variables are related to each other).

Therefore, knowledge about clusters inclines managers to organize meetings promoting this topic among other entrepreneurs, and for promoting the cluster concept, it is necessary, first and foremost, to rely on entrepreneurs with experience in clustering.

Table 4. *Selected results of dependency analysis calculations*

V-Cramer coefficient	Relevance p	The value of the Chi2 statistic	Tschuprow index	Name of the Input Feature	Name of the Output Feature
0,707	0,000	448,000	0,595	V31	V27
0,707	0,000	448,000	0,595	V27	V31

Source: *Own study based on empirical research.*

Increasing awareness of clustering stimulates actions that contribute to cluster success, knowledge about cluster failures, and blocking factors. The more managers know about the cluster, the more effectively they can ensure its success by precisely identifying those factors that create this success. Research also indicates that managers can more effectively assess the actions of public authorities in support of clusters. Experience with the cluster concept points to an easier path to becoming a cluster member.

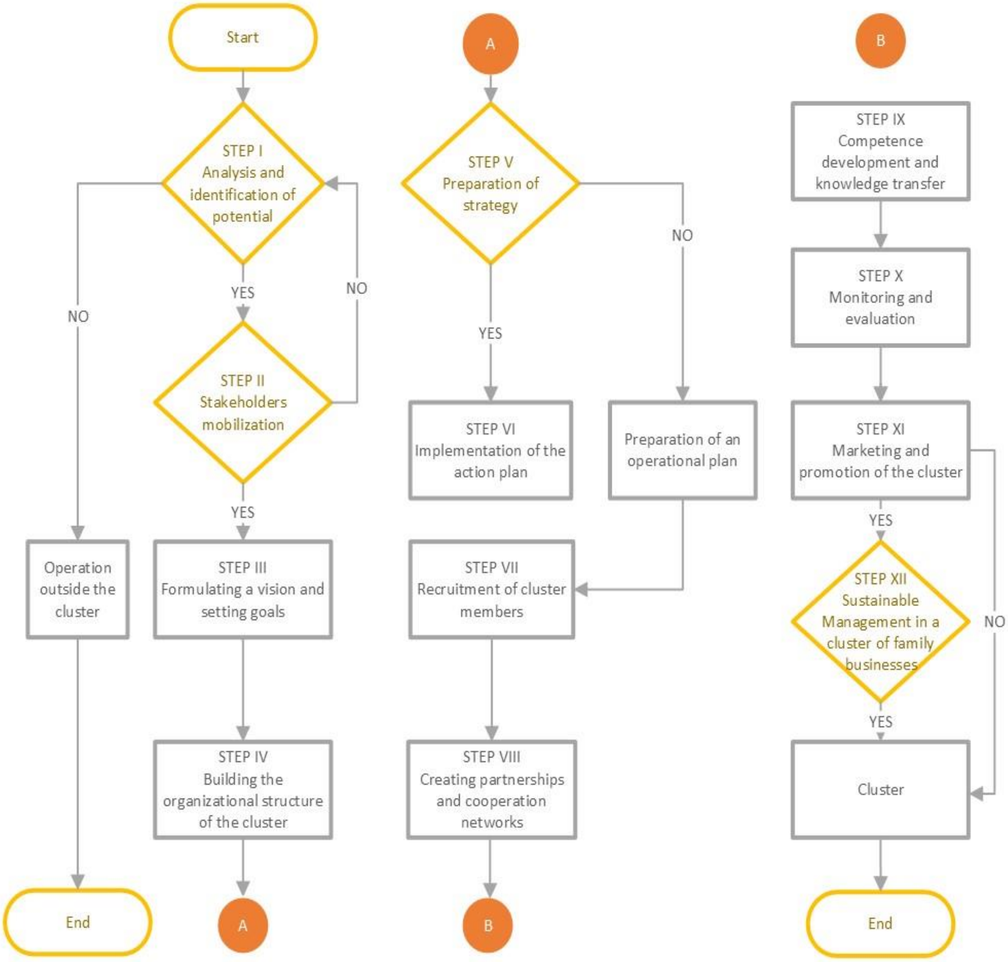
Participation in the cluster is very positively influenced by experience with other networks – this was confirmed based on high positive correlations, justifying the implementation of the family business cluster concept, i.e., confirming that family businesses isolating themselves from cooperation should break this barrier and create cluster-type networks.

To implement the family business cluster concept, a simple procedure based on the following steps was prepared: analysis and identification of potential, mobilization of stakeholders, vision formation and goal setting, building the cluster's organizational structure, strategic planning, expressing the action plan, recruiting cluster members, negotiating terms of participation and benefits for new members, creating partnerships and collaboration networks, developing competencies and knowledge transfer, monitoring, marketing and promoting the cluster, and eventual Sustainable Management in the family business cluster (Figure 1).

The establishment of a family firm cluster should be considered by family businesses aiming for success, as it offers various advantages that can significantly influence competitiveness, innovation, and overall stability and growth of these enterprises.

A family firm cluster represents an organized network of businesses sharing common traits inherent in family-owned enterprises, such as a long-term perspective, strong community ties, and cultural affinity, often coupled with shared values and business traditions.

Figure 1. *Stages of building a cluster of family businesses*



Source: *Own study.*

There exist numerous rationales supporting the formation of a family firm cluster. When advocating for the creation of such a cluster among family businesses, the following aspects should be emphasized:

– Enhancing competitive positioning: Within the cluster, family firms can enhance their competitiveness in both local and international markets. Collaboration allows them to leverage economies of scale, pool resources, and expertise, leading to cost reductions and an expanded portfolio of products and services.

- Exchange of experiences and best practices: Family businesses commonly encounter similar challenges, including succession planning, conflict resolution, and preserving family values in business operations. Within the cluster, they can exchange experiences and solutions, facilitating their development and aiding in navigating common pitfalls.
- Collaboration in research and development endeavors: Clusters offer family firms improved access to research and development initiatives, including external funding sources such as EU grants. Collaborative efforts can expedite innovation and the adoption of new technologies, critical for maintaining competitiveness.
- Enhanced access to financial resources: As collective entities, clusters can access a wider range of financing options, with banks and investors often perceiving them as more stable and less risky compared to individual family firms operating independently.
- Enhanced brand presence and promotional activities: Family businesses operating within a cluster can amplify their marketing efforts and effectively promote their offerings. The collective brand of the cluster may serve as a hallmark of quality and tradition, particularly valuable in specific sectors and markets. Support in the internationalization process: Collaboration within a cluster can facilitate family firms' expansion into new foreign markets by sharing knowledge, experience, and business contacts.
- Resilience to crises: Collaboration within a cluster can enhance the resilience of family firms to economic crises. Joint risk management strategies, diversification of activities, and mutual support during difficult times can help them survive challenging periods.
- Preservation of family values and traditions: A cluster of family firms can also assist in preserving and promoting family values and entrepreneurship for future generations, which is often a crucial element of these firms' mission. As a result, the construction of a cluster of family firms not only strengthens their market position but also supports the maintenance and transmission of family values, which is crucial for their long-term success and sustainability.

5. Conclusions, Proposals, Recommendations

The article focused on analyzing the conditions for the functioning of family firms in the context of the potential application of clustering, utilizing insights into the success and failure factors of family firms related to clustering. Clusters, or concentrations of enterprises operating in the same sector or region, represent an intriguing strategy for family enterprises. The main benefits include increased competitiveness, better exchange of knowledge and experiences, and the joint utilization of resources.

Clusters can foster synergy among family firms, enabling them to achieve greater economies of scale. Collaboration within a cluster can result in more efficient resource utilization, which is particularly significant for family businesses, where values transmission and succession management are key issues.

Additionally, clusters offer the opportunity to build a stronger brand for family firms through joint marketing activities or participation in research and development projects. Collective representation within a cluster can enhance the visibility of enterprises in both domestic and international markets. Utilizing clustering as a pathway for development is a choice for family businesses that, when implemented systematically, allows them to emerge from self-isolation and the deepening specialization conducive to market collusion.

However, there are challenges associated with implementing clusters in family firms, such as the need to build trust, align strategies with common goals, effectively manage cultural differences and family values, or even overcome barriers of isolation and lack of knowledge.

Despite the challenges and the hesitant approach of family firms towards clusters, leveraging clusters can contribute to the long-term development of family firms in Poland, enhancing their stability, competitiveness, and ability to adapt to changing business environments.

The conducted research, whose results formed the basis for the proposed concept of building a cluster of family firms, was not without limitations, such as data collection through a self-designed questionnaire, which had to be shortened due to necessity, leading to the omission of certain aspects. Researchers were also dependent on the voluntary cooperation of respondents.

Future research can focus on the types of clusters dedicated to family firms, the synergistic effects of family firm clusters, and the role of family firm clusters in the Industry 5.0.

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