

Article

Implementing Sustainable Development Concept: A Typology of Family Firms in Poland

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Abstract: For companies, sustainable development generally represents a long-term business orientation towards social, economic and environmental well-being. The concept has gained momentum among researchers partly due to the necessity of finding a modern approach to business development that does not deprive the next generation of the opportunity to meet its own needs. Based on a sample of 333 Polish family firms, three groups of businesses were isolated (via k-means clustering) on the basis of low, medium and high deployment of pro-sustainability initiatives. This paper aims to investigate whether family firms demonstrating divergent levels of sustainable development express between-group differences. Measuring diversity using ANOVA with post hoc testing produced results associating business growth and higher levels of family involvement (e.g., via increased participation of family members from different generations in firm management) with the increased absorption of sustainable solutions and actions. These findings support notions from social identity theory suggesting that groups significantly shape the individual identities of their members. This means that family members inclined to implement sustainable development initiatives are likely to stimulate each other to introduce particular solutions and actions in praxis.



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1. Introduction

Academic interest in sustainable development and family businesses implementing the triple bottom line (TBL) concept [1] has grown rapidly due to increasing social, environmental and economic concerns, especially over the last two decades. TBL assumes that instead of one bottom line, there should be three aspects: profit, people and the planet. It means that a company should be managed in a way that not only creates economic benefits but also improves people's lives and the well-being of the planet [2]. The literature indicates that sustainability practices may be particularly important to family-owned and -managed businesses due to various factors, most prominently the inclination to pass the business to the next generation and the company's long-term business orientation [3–7]. Engaging in pro-sustainability actions can help family businesses achieve and maintain a positive reputation [4,8,9] and, more broadly, protect their socio-emotional wealth (SEW), which is connected to non-financial goals and emotional aspects, including intergenerational firm survival, social embeddedness and family control [8,10–13]. Most research on family business sustainability has been based on a different scientific approach (e.g., qualitative or quantitative analyses or investigating only selected dimensions of TBL), considering different determinants of such activities (e.g., internal or external) [14–17]. Notably, studies have utilized ununified sampling and different methods of investigation [2]. Additionally, relatively limited research has investigated the level of family business engagement in

sustainable development [14,15,18,19]. Within the extant research, several internal factors of family business sustainability have been studied, including long-term orientation, corporate governance, family involvement in ownership and management, values and educational background, relationship with stakeholders, community commitment, reputation and firm size [2].

Thus, existing research does not enable clarification of the characteristics of family businesses that determine their commitment to sustainable development. The combination of a lack of consensus and the existence of conflicting results prompts this paper's project of isolating traits and features that support family business engagement in sustainability. More specifically, this study focuses on the internal determinants of company engagement in sustainable development [20], determinants that could be deliberately introduced into the day-to-day running of such businesses. Therefore, the paper aims to confirm whether family firms that represent divergent levels of pro-sustainable development express between-group differences.

To achieve this aim, the research was focused on identifying a family business typology in Poland on the basis of the level of implementation of internal social, environmental and economic solutions.

Although numerous studies have investigated the impact of family involvement in management and ownership on the implementation of sustainable solutions [12,19,21–23], few studies have examined the broader context of family engagement. By recognizing the role of inter-group behaviour, especially an individual's emotions regarding group membership and being part of group decision making [24], social identity theory presents the suitable approach to investigating whether the engagement of family employees is likely to increase a company's commitment to sustainable development.

Meanwhile, family businesses have specific life cycles, producing significant generational differences in the operation of such entities in terms of sustainability [25–27]. Previous studies have not consistently demonstrated whether this impact is positive or negative [3,28]. Nonetheless, research has indicated that the controlling generation impacts company sustainability [29] and that managers representing specific characteristics play a critical role in sustainable initiatives [30,31]. This prompts this paper's inquiry into the impact of the involvement of subsequent generations in family business management on the enterprise's implementation of sustainable solutions.

The literature also associates company age and size with the implementation of sustainable solutions within a family business [2]. However, various studies on this matter present divergent results [32–36], prompting this paper's interest in verifying the significance of these factors.

This paper makes several contributions. First, it contributes to the literature on the sustainable development of family businesses by presenting a typology of family enterprises that implement the TBL concept at different levels and that are limited to the internal aspects of those enterprises. Second, we provide new evidence, using social identity theory, of the impact of family member engagement in the enterprise's operations on the implementation of sustainable development solutions. We highlight the role of later generations in the managerial body on the pro-social, pro-environmental and pro-economic actions of family businesses. Additionally, we verify whether company size and age are correlated with the implementation of sustainable solutions.

The paper is structured as follows. The first section reviews the relevant literature on sustainable development, family businesses and the internal factors that determine a company's implementation of sustainable solutions. The following section details the study's methodological aspects, and the fourth section presents the main results. The fifth section discusses the findings and the paper concludes by outlining research implications, limitations and future research perspectives.

2. Literature Review

2.1. Business Sustainable Development

Sustainable development represents a pervasive research topic currently defined as a relatively universal multi-generational approach to economic development. Brundtland [37] introduced the most popular description, which was subsequently included in the Report for the World Commission on Environment and Development. This report defines sustainable development as “development that meets the present without compromising the ability of future generations to meet their own needs” [38]. Given sustainable development is a transdisciplinary field, it invites many different perspectives. Elkington [1] represents a popular approach, observing that sustainable development must consolidate social, environmental and economic goals in the long term, proposing the TBL construct, a practical framework for sustainable development [39] that allows the measurement of an organization’s performance and successful implementation of solutions.

Given social, environmental and economic challenges do not necessarily have to be addressed via government intervention, special attention has been paid to the role of entrepreneurship, with researchers recognizing that the activities of economic entities can lead to a transformation towards sustainable products and processes. Some researchers have considered entrepreneurship a panacea for ever-increasing social, environmental and economic concerns [40–45].

Initial research on enterprise sustainability focused on only one pillar, namely, environmental issues [46], which the literature describes using various terms, including green entrepreneurship [47], environmental entrepreneurship [48] and eco-enterprise [49,50]. Systematic reviews indicated that enterprises may adopt a solution of a circular economy concept by eliminating waste and toxic chemicals and fostering the use of renewable energies [51,52]. Gradually, researchers began to adopt a broader perspective, emphasizing the impact of business operations on sustainable development from the TBL perspective. Moreover, researchers revealed that terms such as green entrepreneurship concerned only one pillar of TBL, with sustainable entrepreneurship that encompasses the totality of TBL representing a conceptually different notion that cannot be used interchangeably with, for example, green entrepreneurship [48]. Enterprises engaging in sustainable development minimize the harmful impacts of their own activities on the natural and social environments and demonstrate responsibility towards social and environmental issues while simultaneously attaining long-term profitability. That is, business sustainability integrates the three dimensions outlined by Elkington [1]—namely, the social, environmental and economic dimensions—and maintains a balance between them [53]. Accordingly, in this article we use the definition of sustainable development presented by the World Commission on Environment and Development that is expressed by the TBL approach [1,37].

2.2. Family Businesses

Understanding sustainable development as development that satisfies the needs of present generations without impeding the needs of future generations allows the concept to be equated with the nature of family business functioning. Although there are no uniform criteria defining family businesses, there are many identifiable common features, including family ownership, the participation of family members in management, the family’s strategic control and succession intentions [54]. It is emphasized that family businesses had implemented sustainability practices before this concept was introduced in the literature [55]. The willingness to pass businesses to the next generation determines the preparation of plans with a long-term horizon. In this sense, succession could be considered a decisive factor in launching change processes according to a future-oriented logic by combining continuity, tradition and innovation [7]. The literature demonstrates that businesses operating according to social, environmental and economic goals can create long-term value [6]. Thus, family businesses are motivated by a long-term orientation [5], which implies an inclination to adopt strategies that can guarantee successful longevity and pur-

posefully develop patient capital and long-term investments [3,4]. The potentially higher priority on sustainability practices renders family businesses a special research object.

According to the literature, longevity involves finding common ground and balancing the demands of different interest groups [9]. Engaging in sustainability can help a company develop a positive reputation within its community and cultivate relationships with stakeholders. This enables family businesses to implement strategies that reconcile continuity and sustainability by recognizing and responding to internal and external stakeholders. This approach means families can survive for many generations despite internal and external disruptions [4,8]. Campopiano and De Massis [14] have confirmed that family businesses are attuned to social, environmental and economic concerns due to their multi-generational orientation and their relationship with the local community. One reason for such behaviour is the propensity to protect the socio-emotional wealth of family businesses [12], with Gómez-Mejía et al. [8] adding that “families are emotionally linked to their businesses”. Studies adopting an SEW perspective suggest that family businesses are more likely to engage in sustainable activities than their non-family counterparts due to an inclination to improve family identity and family cohesion [10,11,13]. Consequently, such companies are highly motivated to have social, environmental and economic impacts to maintain the good image of both the company and the family and ultimately transfer a well-established, sustainable business to future generations [21,33].

Given these observations, family businesses represent a special subject of studies on sustainable action, leading to a growing body of research focused on the matter [56]. Most have adopted different approaches to sustainable development and considered various determinants of business engagement in such activities [14–16]. According to the literature, a distinction should be made between external and internal aspects of company engagement with sustainable development [20]. External factors primarily result from legal regulations but also derive from the activities of competitors and pressure from stakeholders, including customers, investors and partners [57]. Internal determinants of a company’s implementation of sustainable practices concern the features of business entities. Given the specificity of family businesses, this paper investigates the influence of the internal factors of companies on the decision to embark on sustainability initiatives.

A literature review by Broccardo et al. [2] revealed that it was not possible to comprehensively delineate the features of family businesses that determine their commitment to sustainable development due to the different methods adopted and the heterogeneity of samples. However, more recent bibliometric analysis has confirmed an increase in research focused on the involvement of family businesses in sustainable development [58], confirming the lack of consensus and the existence of conflicting results in most studies, which prompts this study’s comprehensive investigation of factors of family business engagement in sustainability. Moreover, despite the significant contribution of family businesses to social, environmental and economic issues, there remains limited research concerning the different levels of company engagement in sustainable development [19]. In fact, the literature indicates gaps that must be filled through further studies [14,15,18], leading this article to emphasize family businesses as units of analysis and attempt to recognize their level of engagement with sustainable development. Furthermore, the paper presents a typology of family business that considers different internal factors that determine the level of a company’s engagement with sustainable development.

It should be stressed that our study covered Polish enterprises that differ from those in Western countries because of the transition from a centrally planned to a market-driven economy [59]. Most of the companies were established after 1989, so their market history is relatively short. This means that the idea of sustainable development was implemented by Polish enterprises with a slight delay in comparison to other countries [60]. Research indicates that the most visible implementation of sustainable development idea is among international enterprises that operate in Poland, are large and dynamically developing companies with Polish capital, as well as among the largest companies of the State Treasury [61]. Currently, this idea is accepted by a wide audience, but there is still little scientific literature

in this area [62]. Therefore, family businesses in Poland seem to be an interesting object of sustainable development investigations.

2.3. Hypothesis Development

The literature review by Broccardo et al. [2] indicated that the most frequently researched internal factors are the long-term orientation of family businesses, corporate governance, family involvement in ownership and management, company values, company relationship with stakeholders, community commitment, reputation and firm size.

Many studies have indicated that the decisive factor in a company's commitment to sustainable development is the involvement of family members in management or ownership [21,63,64]. For example, according to Berrone et al. [12], as a family's participation in company control increases proportionally to non-family members, it will more often implement sustainable solutions. Meanwhile, another study revealed that family involvement in management improves company commitment to sustainable development, even if it was originally at a low level. Moreover, these studies demonstrate that family ownership positively influences the level of implementation of sustainable solutions [19], with Sharma and Sharma [21] suggesting that family-owned businesses are more likely to have positive intentions to pursue proactive environmental strategies than other types of family businesses and non-family businesses. Elsewhere, Samara et al. [23] have indicated that different levels of family involvement in ownership and management influence the environmental and social performance of a family business, and Cabrera-Suárez et al. [22] have reported that enterprises with at least 50% of managerial positions held by family members are characterized by a greater level of commitment to sustainable development than other companies.

Despite numerous studies investigating the impact of family involvement in management and ownership on companies' sustainable development, no studies have examined the broader context of family engagement, including as employees of family businesses. This produces the critical question of whether the participation of family members in an enterprise stimulates greater implementation of sustainable solutions. Hence, this study focuses on family engagement, understood as both the employment of family members in all positions and engagement as full- and part-time workers.

Notably, the literature indicates that employee involvement critically contributes to achieving important results at the organizational level [65]. Additionally, sustainable development can be achieved via joint efforts and employee commitment to the organization [66,67]. Furthermore, given the research suggests that employees who act sustainably try to ensure that these values are reflected in the organizations they work for [68], employee values participate in promoting or reducing sustainable performance [69].

Based on this background and employing elements of social identity theory, this study assumes that family engagement in an enterprise stimulates greater implementation of sustainable practices. Social identity theory is rooted in the work of social psychologists—for example, Tajfel [70,71] and Turner [72,73]—and has been relatively rapidly adapted to explain the behaviour of individuals in an organizational context [24]. The premise of social identity theory is that individuals define their own identities in relation to the specificities of their social groups [74,75], therefore presenting a tendency to act (to some degree) according to the ideal image of a group member, which has been described as a process of depersonalization [24].

Given family is an integral social group, we can assume that family members frequently adopt and share basic views, attitudes, behaviours and patterns. This means that the identity of a given family member will reflect the family's values [76]. Employees believing that organizational values, norms and practices reflect their own shapes an affective reaction towards the organization, increasing the motivation to care for social, environmental and economic issues, thus strengthening the organization's sustainability values [77]. This suggests that the key factor for cultivating a company's sustainable development profile are the company and the individuals comprising the company pursuing the same

goals [78]. This convergence of values prompts family employees to devote further efforts to strengthening their commitment to implementing TBL concepts within the company. Furthermore, family values—for example, care and sensitivity to customers, employees and the environment—can determine a company’s commitment to sustainable development [79]. Moreover, according to Berrone et al. [10], strong family identification with business influences the level of implementation of sustainable solutions because family members feel responsible for the company. This logic produces the following hypothesis:

Hypothesis 1 (H1). *Increasing engagement of family members in family businesses is associated positively with higher levels of implementation of sustainable solutions.*

Because family businesses are generally passed on to subsequent generations, they are characterized by a specific life cycle [80]. The literature indicates that there are significant generational differences between family businesses [25–27], which suggests the need for research aimed at explaining the impact of younger generations on a given company’s implementation of sustainable solutions. Previous studies have not produced conclusive results. On the one hand, knowledge, experience and skills are partly passed on to the new generations [28], entrenching family businesses in communities and cultivating positive relationships between companies and stakeholders, making them more willing to engage in solving social, environmental and economic problems [3].

On the other hand, it has been found that the stage at which a company operates critically influences the prioritization of company goals. Research has shown that first-generation companies more often prioritize family goals over business goals than companies run by successive generations [81,82], potentially determining a lower propensity for future generations to undertake sustainable initiatives. These conflicting findings represent one of this research’s motivations, namely, to explain the influence of subsequent generations on implementing sustainable solutions within family businesses.

Previous research has indicated that family businesses passed to new generations have implemented numerous sustainable solutions, with new-generation leaders inclined to preserve or extend the dominant legacy of the previous generation. Thus, as family businesses grow older and more established, they devote more resources to sustainability initiatives [29]. However, it should be noted that it has not been verified whether this is due to the impact of the generation of the family in control of the enterprise. Meanwhile, the role of managers has been demonstrated to be more critical than that of owners essential for undertaking sustainability initiatives. Moreover, it has been indicated that different managerial characteristics importantly determine this performance [30,31], making it necessary to undertake research verifying the next generation’s influence on both the c-suite and the implementation of sustainable solutions.

Recent studies based on upper echelon theory have indicated that physical characteristics such as age, gender, experience and educational background shape the way managers respond to social and environmental problems [83]. Considering knowledge and awareness of sustainable development has grown significantly during the first decades of this century, it seems logical that a manager’s life experience may importantly influence strategic decisions regarding the implementation of sustainable solutions within a company [84]. On the one hand, age not only strongly relates to experience but also influences a person’s perception of reality, which is informed by their existing knowledge. For example, people in their 40s are more aware of trends affecting the planet and society than the elderly [85]. This distresses beliefs and decision-making styles, leading managers of different ages to approach the same problem differently. Moreover, age affects the propensity to implement risky strategies and initiate changes to structures, procedures and people [86]. Thus, younger managers can adopt a more holistic approach towards sustainable practices that can improve the social, environmental and economic performance of companies [87]. Assuming that managerial bodies comprising second-, third- and later-generation fam-

ily members feature younger managers than first-generation family businesses, it can be hypothesized that:

Hypothesis 2 (H2). *Engaging family members belonging to younger generations in management roles in family businesses is associated positively with higher levels of implementation of sustainable solutions.*

According to the literature, company structure represents one of the internal factors that may decide on a company's implementation of sustainable development solutions, with one important characteristic being company size [2]. However, research results on this matter allow no clear conclusions.

For example, Caserio and Napoli [32] found that small- and medium-sized family enterprises implement sustainable solutions to the same extent as large companies. However, they emphasized that smaller enterprises use different techniques, tools and strategies than bigger enterprises in implementation processes. Le Breton-Miller and Miller [33] arrived at a different conclusion, arguing that larger family businesses are less involved in pro-sustainable initiatives due to a lower level of emphasis on employee, supplier, customer and community relationships.

However, the literature mostly indicates that there exists a positive relationship between company size and the likelihood of implementing sustainable business practices [34], with one argument suggesting that small businesses do not perceive their sustainability efforts to be important, claiming that their actions have little impact [88]. Moreover, research has shown that smaller companies do not feature the appropriate structures, resources and specialists required to operate sustainably [89,90].

This aligns with the findings of both Edum-Fotwe et al. [91] and Noor and Pitt [92], which confirm that bigger enterprises are more likely to introduce a sustainable development policy, with Luetkenhorst [93] noting that the larger the company, the more often it declares its engagement in external socially responsible activities. This may be because such enterprises have a greater ability to engage in long-term, wide-ranging projects [94]. The legal requirements that oblige larger enterprises to operate in a sustainable manner should also be considered [95]: as large companies grow, they face increasing pressure from stakeholders, forcing a response to their demands [96]. Additionally, researchers suggest that company size may determine the adoption of sustainable practices due to economies of scale, improved control over resources and the capacity to hire more specialists than smaller companies [97]. Thus, anticipating a positive relationship between this variable and the implementation of sustainable practices, the following hypothesis is proposed:

Hypothesis 3 (H3). *Growing size of family businesses is positively associated with higher levels of implementation of sustainable solutions.*

The literature also indicates that company age may contribute to an enterprise's implementation of sustainable solutions [2]. The propensity to implement innovations within an enterprise grows alongside market experience [98], including innovations related to environmental protection. This propensity also strengthens the learning ability and entrepreneurial orientation of the enterprise, meaning that market experience positively influences the organizational ability to achieve a higher level of sustainable product innovation, which contributes to the enterprise's overall level of implementation of sustainable solutions [35].

Generally, the literature suggests that market experience increases enterprise vitality, manifesting in the enterprise's ability to adapt to social, environmental and economic change. This makes mature companies more inclined to implement sustainable development solutions than younger companies [99]. Furthermore, for younger enterprises in the start-up phase, survival represents an important goal, meaning that, comparatively, older companies that are more stable and have more resources are more likely to implement sustainable practices in the company [36].

For family businesses, one further argument determines increased interest in implementing sustainable practices, which is concern about image. The literature indicates that younger family businesses are less concerned about their reputation [8,100], which influences their approach to sustainable development. Alternatively, more mature family businesses, concerned with their image, are more inclined to implement sustainable practices [2]. Consideration of these arguments produces the following hypothesis:

Hypothesis 4 (H4). *Growing age of family businesses is positively associated with higher levels of implementation of sustainable solutions.*

3. Materials and Methods

3.1. Sampling and Sample Characteristic

The study employed the CAWI method to collect primary data in Poland from 15 August to 11 November 2021 via mail surveys. Family businesses were preliminarily isolated into two datasets using a private dataset pertaining to the Family Business Institute. Questionnaire was divided into three general sections. First section was devoted to identification of family businesses, i.e., whether the family owns more than 50% of the enterprise's shares and whether representatives of the business declare the business to be familial in character. Second section was devoted to identification of pro-sustainable solutions and actions (30 questions) and self-assessment of general implementation of sustainable solutions and actions in business entity (1 question). Last section encompassed characteristics related to particular business entity (age, number of employees, family members engagement in management and family business owners, sector, market scope, way of decision taking, cooperation in R&D area and ZIP code). Questionnaires were sent to 2356 businesses via email (link) with an explanation of the survey intentions. After initial and follow-up mailings, 347 surveys were completed, indicating an initial response rate of 14.7%. Despite preliminary selection of family firms, they were examined ex-post based on two criteria: whether the family owns more than 50% of the enterprise's shares and whether representatives of the business declare the business to be familial in character. This second criterion is based on the Thomas theorem: "If men define situations as real, they are real in their consequences" [101]. It was assumed that if an owner or manager declares that a business entity is a family enterprise, all consequences are the real outcome of that situation. A similar criterion has been used in previous studies [102,103]. Finally, if a particular enterprise confirmed at least one of this criterion it was classified as a family firm. After that, the final sample totalled 333 business entities with the final response rate 14.1%.

The average age of family businesses in the sample is 18.1 years (the oldest is 95 years). Most are micro-businesses employing up to 9 persons (70.9%); 19.5% are small businesses, 6.9% are medium-sized, and 2.7% are large companies (Table 1). Usually in social science, the size of an enterprise is measured by the number of employees [32,85]. Similar way of businesses classification taking into account the enterprise size was adopted by Statistics Poland—State statistics office. In our research the same approach was adopted.

Table 1 indicates that 3 to 5 family members are involved in 47.4% of family businesses, and 1 to 2 family members are involved in 45.9% of family businesses. Most family businesses considered are managed by the founding generation (65.2%), with 29.7% managed by the second generation. Only 15 family enterprises are managed by the third generation, and only two enterprises are managed by the fourth generation. Service sector was represented by 193 enterprises (58.0%), whereas industry by 74 (22.2%) and trade by 66 (18.8%). Most of surveyed enterprises operated at regional level (47.1%, 157 entities), 101 out of them (30.4%) on domestic and 75 (22.5%) declared international operational scope.

Table 1. Sample characteristics.

Characteristics	N	%
Size (employees)		
up to 9	236	70.9
10–49	65	19.5
50–249	23	6.9
over 250	9	2.7
Family members involved		
1–2	153	45.9
3–5	158	47.4
6–9	18	5.4
10 and more	4	1.2
Generation involved in management		
1st	217	65.2
2nd	99	29.7
3rd	15	4.5
4th or later	2	0.6
Sector		
Industry	74	22.2
Service	193	58.0
Trade	66	19.8
Market		
Regional	157	47.1
Domestic	101	30.4
International	75	22.5

3.2. Typology of Family Firms

Building on previous research, a measurement scale for sustainable solutions and the implementation of sustainable actions was developed to encompass 29 different aspects: 13 social elements, 11 ecological elements and five economic elements. This scale is largely based on the work of Muzaimi et al. [104], who recommended integrating various solutions into one system. Using the TBL concept [1], various actions and solutions that align with sustainable development were adopted from the relevant literature [105–108]. Due to the structure of our sample that encompasses industry, services and trade companies, we decided not to take from the previous scales the variable “we monitor/check ‘emissions’ from production processes” that is dedicated to production sector exclusively. The level of implementation of particular solutions or actions was measured on a five-point scale, where 1 stands for “we do not have or we do not implement” and 5 for “we have or we implemented and respect” [109]. All items are presented in Table 2. Cronbach’s alpha coefficient for social subscale was 0.874, for ecological subscale 0.893 and economical subscale 0.721. The common threshold for sufficient values of Cronbach’s alpha is 0.6 [110]. All the subscales exceeded this threshold as well.

Next, k-means clustering was conducted using SPSS software to isolate types of business entities that represent various levels of implementation of particular sustainable solutions and actions. We isolated three clusters using the lowest value of Davies–Bouldin’s index calculated for our sample divided into three, four and five clusters [111]. Table 2 presents the clustering results.

Characteristics of the business entities that represent particular clusters were presented in Table 3.

Table 2. Clusters of family businesses based on implementation of sustainable solutions and actions.

Factors	Cluster 1	Cluster 2	Cluster 3
We have our own occupational health and safety procedures (OSH)	3.14	4.08	4.59
We have our own accident at work procedures	2.91	3.80	4.37
We are cooperating with other institutions	2.43	3.70	3.76
We have our own code of ethics	2.98	3.58	4.25
We have implemented ISO 45001 standards	1.38	1.60	3.95
We have internal system of employee rotation (between positions in our business)	1.79	2.78	2.83
We have an employee training system	2.18	3.43	4.43
We have an employee financial development plan	1.60	2.48	3.90
We increase the salaries of employees according to the developed plan	1.97	2.93	4.05
We have our own corporate social responsibility procedures	2.08	3.12	4.11
We have implemented AA1000 standards	1.10	1.23	3.40
We have implemented ISO 26000 standards	1.11	1.19	3.37
We have implemented SA8000 standards	1.17	1.19	3.54
We implemented low-emission technologies	1.60	3.29	3.81
We implemented low-waste technologies	1.71	3.28	4.03
We implemented BAT technologies (the best available technologies)	1.44	2.50	3.57
We participate in the “Cleaner Production” program	1.04	1.46	2.87
We control the composition of the input materials that are used in business process	1.70	3.44	4.11
We use raw material cards (material composition)	1.24	2.82	3.98
We have our own procedures for environmental protection (e.g., waste management)	2.38	3.63	4.10
We design and manufacture ecological products	1.44	2.23	3.06
We have implemented ISO 14001 standards	1.13	1.25	3.41
We have implemented EMAS system	1.02	1.15	2.89
We have implemented ISO 9001 standards	1.20	1.52	3.67
We have low-energy machines	1.68	3.04	3.38
Our buildings are insulated	3.53	4.15	4.57
We use RES (renewable energy sources)	1.58	2.35	3.11
We have passive/energy-efficient halls (buildings)	1.34	2.45	3.48
We are energy self-sufficient	1.38	1.66	2.38

Table 3. Characteristics of business entities in particular clusters.

Characteristics	Cluster 1		Cluster 2		Cluster 3	
	N	%	N	%	N	%
Size (employment)						
up to 9	122	91.7	92	67.2	22	34.9
10–49	9	6.8	38	27.7	18	28.6
50–249	2	1.5	5	3.6	16	25.4
over 250	0	0.0	2	1.5	7	11.1
Family members engagement						
1–2	77	57.9	62	45.3	14	22.2
3–5	51	38.3	65	47.4	42	66.7
6–9	4	3.0	10	7.3	4	6.3
10 and more	1	0.8	0	0.0	3	4.8
Generation in management						
1	98	73.7	94	68.6	25	39.7
2	32	24.1	32	23.4	35	55.6
3	2	1.5	11	8.0	2	3.2
4	1	0.8			1	1.6

Table 3. Cont.

Characteristics	Cluster 1		Cluster 2		Cluster 3	
	N	%	N	%	N	%
Sector						
Industry	19	14.3	27	19.7	28	44.4
Service	90	67.7	78	56.9	25	39.7
Trade	24	18.0	32	23.4	10	15.9
Market						
Regional	78	58.6	62	45.3	17	27.0
Domestic	32	24.1	47	34.3	22	34.9
International	23	17.3	28	20.4	24	38.1

4. Results

4.1. Clusters

Figure 1 depicts the isolated clusters representing separately the social, environmental and economic pillars of sustainable development. The next step involved using ANOVA to confirm differences between clusters based on the level of sustainable development solutions and the actions implemented. Considering all clusters, ANOVA confirmed statistical differences between all sustainable development factors ($p < 0.000$ in all cases).

To check for detailed differences between particular clusters, post hoc tests were employed. If the variance of a single factor did not fulfil the constant variance permitted, the Games–Howell test was used. In a contrary situation, Hochberg tests were conducted. Both these tests can be used for unequal groups of businesses classified into a given cluster [112]. Post hoc tests did not confirm the detailed differences presented in Table 4.

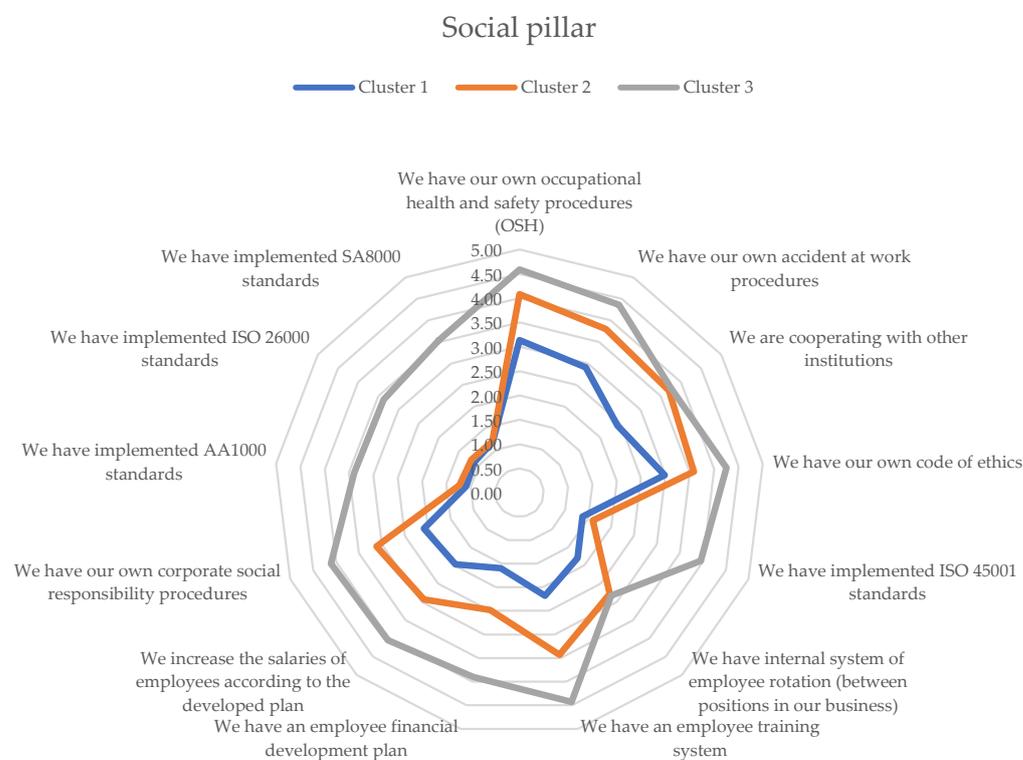


Figure 1. Cont.

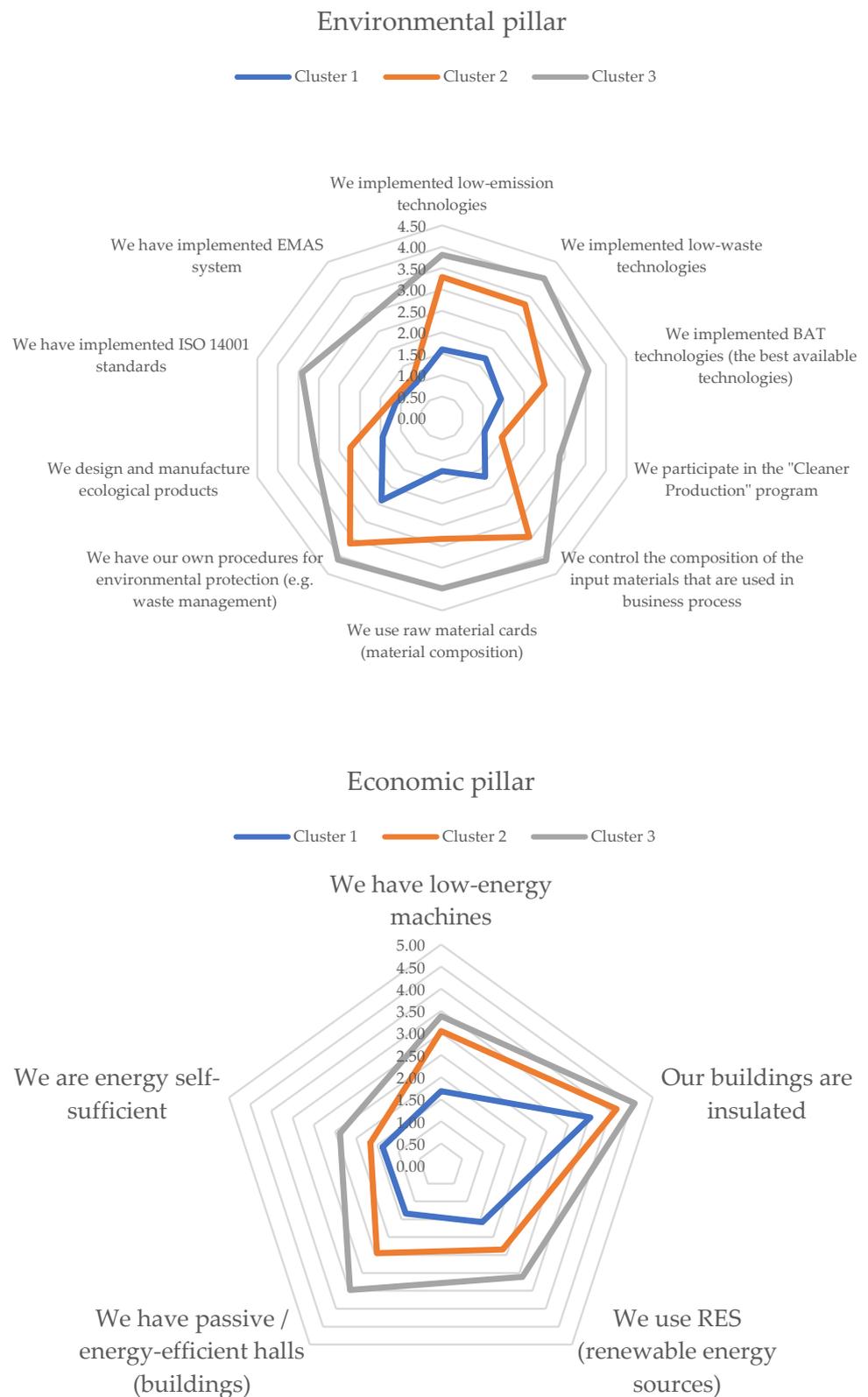


Figure 1. Clusters of family businesses representing social, environmental and economic pillars of sustainable development.

Table 4. Absence of differences between clusters related to particular factors of sustainable development.

Factors	Clusters	p-Value
We are cooperating with other institutions	C2–C3	$p = 0.988$
We have implemented ISO 45001 standards	C1–C2	$p = 0.150$
We have internal system of employee rotation (between positions in our business)	C2–C3	$p = 0.979$
We have implemented AA1000 standards	C1–C2	$p = 0.289$
We have implemented ISO 26000 standards	C1–C2	$p = 0.379$
We have implemented SA8000 standards	C1–C2	$p = 0.944$
We have our own procedures for environmental protection (e.g., waste management)	C2–C3	$p = 0.065$
We have implemented ISO 14001 standards	C1–C2	$p = 0.464$
We have implemented EMAS system	C1–C2	$p = 0.418$
We have low-energy machines	C2–C3	$p = 0.087$
Our buildings are insulated	C2–C3	$p = 0.097$

Analyses of the clusters obtained enabled the identification of main differences between them, ultimately leading to the delineation of their main specificity.

Cluster 1 (n = 136) represents family businesses characterized by the lowest level of various solutions and actions focused on sustainable development. Only aspects such as their own procedures for environmental protection and possession of low-energy machines or building insulation were ranked higher. This cluster was labelled “**sustainable development laggards**”.

Cluster 2 (n = 137) encompasses family firms that have implemented solutions and actions that align with sustainable development relatively well. However, considering other factors, it is apparent that this group features an element of tardiness. Lower level of implementation refers to ISO 45001 standards, AA 1000 standards, ISO 26000 standards, SA 8000 standards, ISO 14001 standards, EMAS system, ISO 9001 standards and participation in the “Cleaner Production” program. Given that all weaknesses regarding pro-sustainable development solutions’ implementation include formal aspects, this group of family businesses was labelled “**non-formal sustainable development followers**”.

Cluster 3 (n = 63) represents the family firms that are most advanced in their implementation of pro-sustainable development solutions and actions. In this case, only a few aspects are weaker, including the employee rotation system, participation in the “Cleaner Production” program, implementation of an EMAS system and energy self-sufficiency. Considering this, this group was labelled “**sustainable development trailblazers**”.

Analyses of differences and similarities between clusters were able to establish the manner or stages of implementation of particular sustainable development solutions and actions by Polish family businesses. The first stage, which is characteristic of sustainable development laggards (C1), concerns the implementation of passive and internal solutions that do not require any external support or advice, including energy saving, building insulation and the preparation of an internal code of ethics and pro-environmental procedures (Figure 2).

In the next stage, which is typical of non-formal sustainable development followers (C2), family businesses are managed in a more sophisticated way, using different internal procedures that focus on protecting the interests of both internal and external stakeholders. Meanwhile, sustainable development trailblazers (C3) characterize the final observed stage, which concerns formal and external confirmation (norms, standards, certificates) of implementation of various solutions that can support these enterprises in fulfilling requirements that are commonly perceived to boost sustainable development. These divisions are not strict, with particular stages overlapping, suggesting that the path from stage to stage is evolutionary rather than revolutionary.

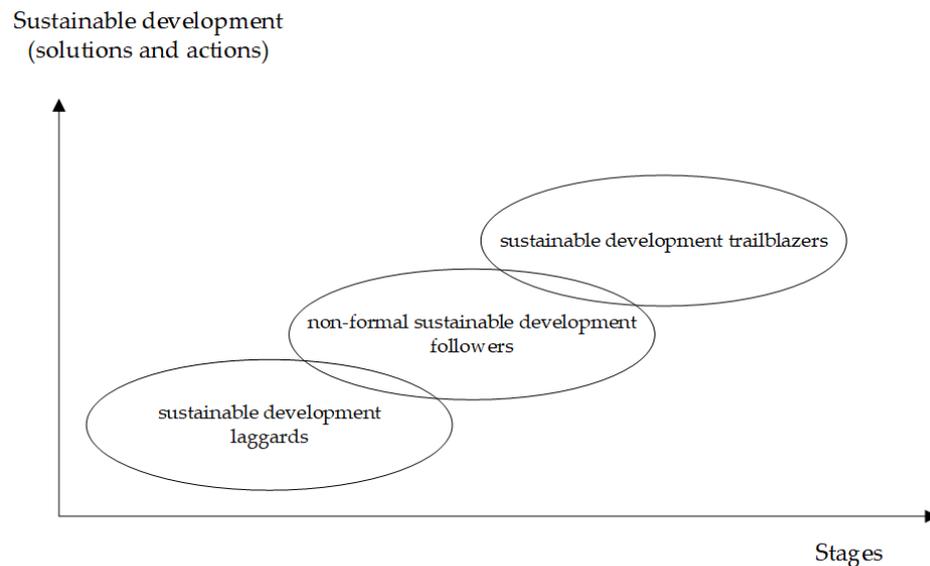


Figure 2. Stages of implementation of sustainable development actions and solutions.

4.2. Differences among Clusters

Next, differences between isolated clusters were checked by considering the number of family members engaged in the business, the family generation involved in management, business size and the business entity's age. Analyses were conducted using ANOVA and post hoc tests to isolate differentiations between particular groups. If the variance of a single factor did not fulfil the constant variance permitted, Games–Howell tests were employed. If this requirement was fulfilled, Hochberg tests were conducted.

In the case of family member engagement in business, Games–Howell tests confirmed that family businesses that represent higher levels of absorption of various solutions and actions focused on sustainable development also featured greater involvement of family members in business ($p < 0.001$). This suggests that involving family members in the everyday operation of a company boosts sustainable development. As such, hypothesis H1 was confirmed.

Family businesses featuring family members from later generations in the management body also represent a group of businesses that enact pro-sustainable development actions and solutions to a greater extent ($p < 0.001$). Therefore, hypothesis H2 can be confirmed. This finding partly corresponds with general family member engagement in the enterprise and could be assessed as a factor that favours the sustainable development of business entities.

Family business size is positively correlated with the implementation of various solutions and actions focused on sustainable development ($p < 0.001$). Businesses in C3 are bigger than in C2 and those in C2 than in C1 (see Table 3). Considering this finding, hypothesis H3 was confirmed. This might indicate that some sustainable development solutions require business entities to achieve sufficient “critical mass”, potentially confirming that some sustainable development factors will be absorbed by a company operating in a given life cycle stage.

Regarding age, statistical verification confirmed no differences between particular clusters ($p = 0.163$). However, the average age of C1 businesses was 16.6, the average of C2 businesses was 18.4, and the average age of C3 businesses was 20.6 years, indicating differences too small to confirm that older businesses absorb solutions and actions focused on sustainable development to a greater extent. Given these findings, hypothesis H4 was not confirmed.

5. Discussion

Family member commitment to and engagement in family businesses represents an important component of collectivistic identity orientation towards stakeholders. Greater

family involvement has been positively associated with numerous family firm characteristics, including legality [113], SEW building [8], CSR [114], performance [30,31,115] and survivability capital [116]. This research broadens the work of Huang et al. [63], Sharma and Sharma [21] and Cui et al. [64], who have all claimed that companies are more inclined towards sustainable development if the involvement of family members in management or ownership increases. Our findings provide evidence associating a greater propensity to implement pro-sustainable development solutions with a greater involvement of family members, regardless of the nature of this involvement. Family members generally represent social groups with strong binds, that is, families are groups of individuals with a common social identification or who view themselves as members of the same social category [117]. If family members act as a relatively coherent group, it is expected that their behaviour and decisions will, to some extent, present similarities; because group actions reduce subjective uncertainty [118], people behave in concert within a group with which they identify [119] and decisions taken by the group are perceived as depersonalized [120], making such decisions easier for individuals to make. Sustainable development initiatives in the interests of the long-term orientation of family enterprises [105,119,120] could represent a constructive developmental approach, making such strategies more accessible to groups of family members than individuals.

Notably, family enterprises pursue not only economic profits from their participation in the business but also non-financial, less tangible goals, such as reputation, longevity and familial succession of the business [10,121]. This relates to the need for SEW preservation that is deeply rooted psychologically in family business owners [10]. In contrast, the involvement of multiple generations in family businesses relates to various individual perspectives, valuable assets for entrepreneurial ideas and new approaches to doing business [122,123]. In fact, research suggests that during the succession process, knowledge, experience and skills are partly passed on to the next generation [28], suggesting the undeniable impact of subsequent generations [124]. New generations boost innovations [125] and pursue entrepreneurial activity [76,126], with the adoption of sustainable development actions and activities to some extent associated with entrepreneurial orientation and innovativeness. For younger generations, it is easier to adopt a more holistic approach towards sustainable practices that can improve the environmental, social and economic performance of companies [87], therefore increasing investment in sustainability initiatives [29].

Each family business follows a particular life cycle, passing through particular development stages, from birth to maturity. The relevant literature introduces several theoretical concepts to describe a company's life cycle [127]. Regardless of the number of stages that characterize different life cycle models and the similarities or differences between them, it is agreed that, at a particular level of development, the actions and initiatives of companies must be adjusted to the given circumstances. Subsequent company development stages relate to a business' scaling-up, which refers to instances of formalization and bureaucratization that change the decision-making style and leads to the evolution of almost all types of functioning [128]. In this context, the life cycle of family enterprises could explain why bigger enterprises are more interested in implementing sustainable development policy [91,92] and engaging in external socially responsible activities [93]. Achieving relevant levels of development is connected with economies of scale, improved control over resources and the capacity to hire more specialists; these factors mean bigger businesses more broadly adopt sustainable practices [97].

Although business age is also associated with life cycle, it has been suggested that particular stages can occur in rapid sequence or be very slow to develop, resulting in the weak correlation of organizational age and development stage [127]. This suggestion seems relevant to the family-firm development process, which involves the pursuit of long-term goals [129], improved access to internal financial capital [130] and family social capital [131]. These features are particularly relevant for economic development processes based on the predominance of micro and small firms that base their competitiveness on an ecosystem of inter-firm relationships [132]. This specificity might also explain why some family

businesses operate for a long time at particular stages of development and demonstrate no imperative to implement more sophisticated solutions directed at sustainable development.

6. Conclusions

Our results confirm that Polish family businesses represent divergent levels of implementation of sustainable development solutions and actions. By considering 30 detailed aspects of social, environmental and economic pillars of sustainable development, participating family businesses were divided into three separate groups using k-means clustering. The first cluster of family businesses, labelled “**sustainable development laggards**”, included family firms implementing limited, “passive” pro-sustainability solutions. This group featured the lowest level of engagement of family members in operating the business and businesses were most likely to be managed by the founding generation. Finally, this cluster featured the smallest family firms (measured by the number of employees). The second cluster was labelled “**non-formal sustainable development followers**” and comprised family firms that had clearly implemented several pro-sustainable development solutions and actions. However, these businesses focused on aspects that could be implemented without external support, consultancy or formal confirmation. Nonetheless, family members were more engaged in the operations of these businesses, and younger generations were more involved in management. This cluster was also bigger than the first one. The highest level of implementation of pro-sustainable development solutions and actions was observed in the third cluster, labelled “**sustainable development trailblazers**”. These businesses demonstrated insufficiency with regard to only a few aspects of sustainable development and were distinguished by the noticeably more substantial involvement of family members in business operations, the employment of later generations of the family in the managerial body and the larger size of the business.

Considering these findings, two main conclusions can be drawn in reference to management and practice. First, more involvement of family members, both generally and as c-suite members, is aligned with the pro-sustainable orientation of family businesses. This observation supports the claims of social identity theory [74] that groups significantly shape the individual identities of their members. This means that the orientation of family members towards various solutions and actions connected with sustainable development will stimulate the introduction of particular solutions in praxis. Our results also reveal that family businesses must achieve a sufficient level of economic development to be able to implement formal norms and standards of sustainable development that can be verified by independent institutions. Thus, advisory institutions should adjust their offers to correspond to different family business development stages.

Additionally, particular pro-sustainable solutions are more or less suitable for a given business entity. Hence, policymakers or other groups of stakeholders that are interested in the implementation of various pro-sustainable solutions should adjust their formal and administrative requirements, taking into consideration both real possibilities of businesses and their praxis needs related to the given sector of the economy they operate in.

Although this study features several limitations, it nevertheless presents opportunities for future research. The first limitation concerns the sampling process. Using purposive sampling of Polish businesses that define themselves as “family firms” or that have declared a family share of equity capital above 50% limits the capacity to generalize the findings to family firms in other countries or family firms defined using another approach [133]. To expand on these findings, similar studies should be conducted that use the same or similar methods to consider other samples.

Additionally, considering the sampling approach, it could be suggested that our results can be verified using completely random samples or using public statistics data to draw conclusions for the general population of family businesses.

It also could be verified whether business size measured by other factors than employment, e.g., turnover or total assets, would confirm our finding related to these parameters.

It could also be interesting to prove whether the observations would differ if other family enterprise characteristics were considered. For example, it could be interesting to investigate whether family businesses in different sectors, that are publicly listed or not publicly listed or that represent various levels of internationalization differ in terms of their engagement in pro-sustainable development solutions.

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