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Socioemotional Wealth (SEW) of Family Firms and CEO Behavioral Biases in the Implementation of Sustainable Development Goals (SDGs)

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Abstract: Agreed upon by the UN member states, Agenda 2030 assumes joint action for long-term sustainable development. These actions are focused on the implementation of 17 Sustainable Development Goals (SDGs), where actions are assumed to lead to the suppression of negative externalities of human activity. It is stressed that the objectives of sustainable development can only be achieved through deep institutional changes in most dimensions of the economy, including the entrepreneurship dimension. Entrepreneurship plays a pivotal role in the sustainable transformation of the community, as the related activities of companies are the source of the desired structural changes. Entrepreneurial projects make the biggest contribution to the objectives of sustainable development through research and development, investment in new technologies, and innovation. The biggest threat to sustainable entrepreneurship is firms' aggressive corporate financial strategy, which most often results from CEO overconfidence and aggressive financial behavior. The aim of the article is to indicate differences in corporate financial strategies regarding the status of the company (family or non-family) and CEO characteristics (overconfident or non-overconfident). The fulfilment of this aim by analyzing a selected EU member country (Poland) found more aggressive behavior of overconfident CEOs in non-family firms. It was also found that family firms are a fairly coherent group of companies that implement a more conservative corporate financial strategy regardless of CEO characteristics. We can state that family power can curb CEO overconfidence and its impact on aggressive financial strategy. This means that family firms are much more able to create sustainable entrepreneurship and contribute to Sustainable Development Goals (SDGs) within a market framework.

Keywords: Sustainable Development Goals (SDGs); sustainable entrepreneurship; family firm; managerial overconfidence; financial strategy



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1. Introduction

Today, in most world economies, we observe intense processes of globalization, rapid economic growth, and significant institutional and social changes [1–6]. An increase in production, competitiveness, investments, and innovations in these countries, as well as changes in the labor market and consumer patterns [7–11], leads to a systematic increase in energy consumption [12,13]. The continuous increase in the demand for energy causes the resources of energy from non-renewable sources to be no longer sufficient, and its production becomes more expensive and harmful to the environment [14,15]. This situation forces an intensive energy transformation in most countries, including the countries of the European Union [16,17]. Energy transformation is understood as a transition from the

current energy system using non-renewable sources to an energy system based mainly on renewable and low-emission sources. In the European Union, a transition to a sustainable and green economy has become a strategic goal in the fight against climate change, leading to improved energy security, competitiveness, and attractiveness of the economies of Member States [18–20]. The institutional actions of the European Union are in line with the voice of 193 member states of the UN, who in September 2015 put forth the 2030 Agenda for Sustainable Development [Agenda 2030] which assumes joint actions to “combine economic prosperity, social inclusion, and environmental sustainability” [21,22].

Agenda 2030 is focused on the implementation of 17 Sustainable Development Goals (SDGs) that aim to mitigate negative externalities of human activity [21]. In the EU, these agreements have become the basis for achieving improvements against climate change (SDG 13), sustainable consumption and production (SDG 12), protection and conservation of biodiversity (SDGs 14 and 15), and sustainable agriculture and food systems (SDG 2) (Institute for European Environmental Policy, 2019). The EU defined three priority areas to support the achievement of SDGs: (1) Internal priorities for the EU and member states; (2) European diplomacy and development cooperation; and (3) Tackling negative international spillovers [21]. In terms of internal priorities, the focus on sustainable energy production, sustainable land use and food production, and sustainable internal closed-loop systems is intended to lead to the achievement of sustainable development goals [21]. According to the EU strategy, the actions are meant to lead to a situation in which, in 2050, Europe will be the first continent that is neutral in terms of climate and the environment. In the EU, a systematic process of sustainable transformation of the economies of its member states is underway [23]. It is stressed that the objectives of sustainable development can only be achieved through deep institutional changes in most dimensions of the economy [24].

In this transformation, entrepreneurship plays an essential role, which can best translate into the implementation of sustainable development goals by selected countries or the entire EU. In recent years, the concept of sustainable entrepreneurship has been at the forefront of interest in both academic research and global social discourse. As noted by Kraus [25], sustainable entrepreneurship requires an entrepreneurial reorientation towards ‘a more ecological, social and economic equilibrium’, while ‘discovery and exploiting economic opportunities’, conversely, is the fundamental aspect of conventional entrepreneurial theories. In the case of sustainable entrepreneurship, investments, innovations, business angels, and family businesses are exchanged among those responsible for its positive development [26–29]. This article focuses on the potential impact on the development of sustainable entrepreneurship on the part of family businesses, which, due to the multitude of these type of business entities in the entire economy, seems to be an important research problem.

During the last decade, a great deal of research has emerged on environmental, sustainable, and green (ESG) entrepreneurship [30–32]. Entrepreneurial ESG projects that contribute to the SDGs are based on radical innovation and very often originate in emerging and young firms (start-ups), implying their strong contribution to the transition to a sustainable economy [33]. Prior research has demonstrated that family firms also contribute significantly to the achievement of SDGs. However, their ability to create new technologies, jobs, and wealth, and thus to conduct decisions in order to become and stay competitive in the long term, might be negatively affected by the risk aversion [27]. Innovations are costly, and one strand of research suggests that family firms avoid uncertain activities more than their nonfamily counterparts, resulting in a general lower level of R&D spending and innovations [34–36]. Following this argument, family firms should initially lag behind non-family firms in terms of reflecting and achieving the SDGs. On the other hand, there is increasing empirical evidence that SDG-related activities have very often been successful, and therefore a catch-up process should also be started in family firms with respect to their innovation efforts. Furthermore, notable theoretical work points to the strong focus on longevity in family firms, that is, accumulation and conservation of wealth

for future generations, and thus less volatile behavior in terms of consistent implementation of activities that support the SDGs, innovations, and performance [26,27,37].

In analyzing sustainable family-owned entrepreneurship and its drivers, the academic literature also aims to understand the relationship between sustainability and entrepreneurial financial strategies. A basic tenet of classical financial theory is that family businesses, in contrast to their non-family counterparts, operate largely within the framework of sustainable entrepreneurship and thus contribute to the achievement of the Sustainable Development Goals (SDGs) due to their conservative values and lower propensity to take risks, resulting in preferring less risky financial options [38]. Non-family businesses, in pursuit of risk and as a result of consciously bearing higher risk, will pursue an aggressive financial strategy, which in most cases precludes sustainable entrepreneurship. Therefore, family firms have been argued to be much more capable of creating sustainable entrepreneurship and contributing to SDGs compared to their non-family peers, which could be more threatened by agency conflicts between different stakeholders and CEO opportunism, overconfidence, and aggressive financial strategies [38–40].

The dominant role of the CEO in creating entrepreneurship and company survival has been widely discussed in the academic literature [41–43]. This is especially true for small- and medium-family companies that rely on personal relationships. These family ties are essential. Recently, the development of the behavioral attitude in investigation towards CEO decision-making opens new opportunities in terms of further research. One of these behavioral characteristics is overconfidence, which has been the subject of increasing research interest [43]. Overconfident CEOs are most often the subject of aggressive financial strategies focused on achieving above-average profits while exposing companies to higher risks. In such a constellation, it is difficult to establish sustainable entrepreneurship and follow SDGs. This is due to the fact that SDG-compliant projects require higher investments, longer payback times, and lower margins. This led us to explore the factors affecting financial strategies in family firms and thus their contribution towards more sustainable development.

The main aim of the article is to investigate whether differences in corporate financial strategies can be detected in a sample of Polish firms with regards to both the status of the company (family or non-family) and the characteristics of the CEOs (overconfident or non-overconfident). To the best of our knowledge, we contribute to the literature two-fold. First, there is a paucity of empirical studies analyzing the relationship between ownership structure and financial strategies with regards to the characteristics of CEOs. Second, our contribution is also of a methodological nature, as we study the aspect of sustainability in a novel way. We do so by interlinking two areas of academic literature: one on family firms and one on sustainable financial strategy. Our results suggest that in non-family firms more aggressive attitudes to financing are being pursued by overconfident CEOs. Additionally, family firms are a coherent group that implements more conservative corporate financial strategies regardless of the characteristics of the CEO. We imply that family power can curb CEO overconfidence and its impact on financial strategy.

We believe that our findings have important implications for firm owners, investors, and policy decision makers as these findings prove that managerial overconfidence and the family status of the firm have an impact on financial strategies. Another implication is that the family status of the company might mitigate managerial overconfidence and thus contribute to more sustainable development.

The remainder of this paper is structured as follows: We begin with a theoretical background that describes the role of CEOs in family firms, allowing us to raise research questions and justify research hypotheses. In the next section, we outline the methodology. The section after that presents the research findings. The last sections contain the discussion and main conclusions.



2. Literature Review

In the transformation towards sustainable development covering the SDGs, entrepreneurship represents the main source and catalyst of the desired structural changes. Academic theory and empirical evidence suggest that sustainable entrepreneurial projects are more rooted in radical innovation than incremental innovation [33]. Patzelt and Shepherd [44] emphasize that sustainable entrepreneurship that contributes to SDGs can be defined as ‘the discovery, creation and exploitation of opportunities to create future goods and services that sustain the natural and/or communal environment and provide a development benefit for others’. There are several aspects that distinguish these sustainable enterprises from each other and from more ‘conventional’ firms [33]. Previous research has also shown a variety of typologies of sustainable entrepreneurship, which are helpful when motivation, social impact, level of profitability, and financial challenges are evaluated [45–47]. For instance, Bergset and Fichter [47] developed an innovative concept on how to classify green firms based on three aspects. These involve product-related characteristics (product quality, long-term focus, and need orientation), entrepreneur-related characteristics (sustainability-related motivation, use of guiding sustainability principles, and level of business qualification), and strategy-related characteristics (level of market orientation, level of growth, control, and decision-making rights). A growing body of academic literature has documented that ‘radical innovation originates disproportionately in smaller and more entrepreneurial new firms’ [48], making them more likely to support a sustainable and green transition of the economy. Horne et al. [49] propose an original approach to documenting SDG-linked activities of new companies and provide a detailed analysis of the entrepreneurship landscape of Germany along the 17 SDGs. The main findings are twofold. Firstly, ‘very heterogeneous entrepreneurial activities along the SDGs could be identified, while there are also significant correlations between multiple goals that are often addressed jointly’. Second, the authors showed that there are multiple SDGs that most entrepreneurs do not address at all, although there are strong needs for improvement.

The implementation of entrepreneurial projects that support SDGs requires the adoption of innovative financial strategies that represent a central issue of entrepreneurial success [47]. A broad discussion has emerged about established financing concepts that support sustainability [50,51]. There is a general agreement that conventional finance is not sufficient to support the achievement of SDGs and that there are specific financing challenges and opportunities that distinguish sustainable entrepreneurs from their conventional peers. Financial theory has delivered a range of theoretical explanations. Bergset [33] summarizes the bulk of them and emphasizes the role of informational asymmetries, the adverse selection problem, the principal agent problem, and the moral hazard problem. A general conclusion stemming from research on the matter is that conventional financial models do not consider an all-dimensional perspective of sustainable development (i.e., environmental and social issues are neglected) [50]. For new and (mostly) small entrepreneurial firms, it might be more difficult to access external funding, particularly in the early stages of entrepreneurial development. The lack of resources, the lack of history, and the high level of risk can cause financial constraints that ultimately result in the loss of business ideas [52].

Therefore, a paradigm shift in financial theories towards sustainable finance addressing non-financial factors, that is, environmental, social, and governance (ESG factors) is needed [50,53]. Research efforts have been focused on topics such as how to analyze sustainable financing concepts and investments [54] or how to design sustainable finance models [53]. Moreover, Bergset [33] calls for a new kind of ‘socially responsible investors’ or ‘impact investors, who invest in a ‘value-oriented manner’, are motivated to ‘strengthen’ the ability of enterprises to have a social impact, or fund entrepreneurs ‘with a sustainability-related’ field of activity and are also focused on non-profit objectives. Therefore, finance is identified as the main source of sustainability, in particular through sustainable investments. There is a general agreement that both companies and investors should integrate environmental, social, and corporate governance factors (ESG factors) into

the decision-making process to mitigate the risk of ESG [50]. Vandekerckhove and Leys [54] focused on covering the gap between sustainable development and finance and call for better indicators to assess sustainable development goals (SDGs) and recommendations for sustainable financing strategies and investments [50].

In the vast majority of countries, family companies constitute a large share of economic performance [55,56]. Therefore, family firms play an important role in economic activity around the world [57–59]. As outlined in the Introduction, family firms differ from their non-family counterparts due to the ‘family-centered goals’ [27]. From this point of view, family firms focus on the accumulation and conversion of socio-emotional wealth (SEW) that should be passed on to the next generation [27,38]. In this context, Antheaume et al. [26] argue that family businesses prefer longevity, which is reflected in the prioritization of long-term, rather than short-term financial goals, and which corresponds to the concept of sustainable development.

SEW refers to the non-financial aspects of the firm that meet the affective needs of the family, such as identity, the ability to exercise family influence, and the perpetuation of the family dynasty [60] and can drive the behavior of family business to a large extent. Given that family firms are often loss averse when it comes to their SEW, they will behave to preserve these nonfinancial benefits, which may have a significant effect on the decision-making process [61]. SEW concerns can lead to favorable outcomes (e.g., employee commitment, emotional attachment, and better environmental performance) in family firms [62].

Existing research indicates that family companies implement conservative financial strategies, both in investment and financing [63,64]. Furthermore, owners of family firms are found to be averse to external financial sources and prefer internal financing [65]. In addition, they often give up growth opportunities that need external equity, as they endanger family control [66,67]. These research results allowed us to assume the following first research hypothesis (H1) stating that family firms are characterized by a significantly safer financial strategy (both investment and financing) in comparison to non-family firms. The verification of the assumed research hypothesis means that family companies are much more likely to create sustainable entrepreneurship and to achieve the Sustainable Development Goals (SDGs) in comparison to non-family companies. There are already some research studies supporting the thesis that family firms are sustainability oriented. Le Breton-Miller and Miller [68] underline the sustainable approach in the management of family firms due to a long-term orientation and a desire to pass on a healthy business to later generations. Arregle et al. [69] pointed out that families with businesses are anchored in their communities and their long-term presence and values. They build their business on social and relational capital. To achieve recognition, reputation, and longevity, family firms are more likely to invest in economically and socially responsible projects that generate sustainable profits [70,71]. The orientation towards the welfare of current and future family members makes family firms more willing to participate in environmental action [72]. Family firms are perceived as stewards with long-term orientation devoted to social and environmental goals [73].

The most powerful position in the running of every company is held by the CEO [41]. The CEO is responsible for setting and implementing the financial entrepreneurial strategy of each company and creating entrepreneurship. Adams et al. [74] show, in their study of CEOs of 336 Fortune 500 companies, that CEOs and executive managers can indeed affect corporate decisions. Since then, many studies [75–77] have extensively investigated the characteristics of CEOs, finding support for the assumption that their personal characteristics, such as age, gender, and professional background, influence organizational outcomes.

The recently developed behavioral attitude in the investigation of decision making leaves some room for further research on CEO behavioral characteristics. This attitude assumes that CEOs’ biases and fallacies of cognitive processes have an impact on corporate finance. Cognitive psychology stems from the work of Kahneman and Tversky [78].

One of the cognitive biases and fallacies is overconfidence. Kahneman [79] calls overconfidence the most significant of cognitive biases. Bazerman and Moore [80] find that overconfidence is the mother of all biases by ‘giving the other decision-making biases teeth’. Research in cognitive psychology establishes that people are usually overconfident. ‘No problem in judgment and decision making is more prevalent and more potentially catastrophic than overconfidence’ ([81], p. 217). ‘Perhaps the most robust finding in the psychology of judgment is that people are overconfident’ ([82], p. 389). Overconfidence was identified as a complex phenomenon [83] consisting of over-estimation, over-optimism, and over-placement. Overconfidence has been subjected to much inquiry, with a confirmed significant impact on the decision-making process.

Overconfidence in corporate finance has drawn a great deal of attention and has been thoroughly investigated (e.g., [43,84,85]). It was shown that overconfidence also affects financial decisions and financial performance. Overconfident managers have many specific characteristics making them more aggressive in their financial behavior [86,87]. There is some research demonstrating overinvestment [88] as a result of overconfidence. There is also research showing an excessive use of debt by overconfident managers [89,90]. This paper will consider the problem of CEO overconfidence broken down into family and non-family businesses.

In non-family firms, where there are no mechanisms limiting CEO characteristics (and these are even encouraged), overconfident CEOs will manage in a risky manner in order to obtain an above-average level of profit. Family firms, on the other hand, present a more coherent group of companies, especially in terms of conservative values. This means that the mechanisms operating in family firms may weaken the CEO’s characteristics (overconfidence) and influence on the firm’s financial strategy. These findings led the authors of the article to propose two additional research hypotheses. In hypothesis two (H2) we expect to find a more aggressive financial (investment and financing) strategy conducted by overconfident managers in non-family firms compared to family firms. On the other hand, in hypothesis three (H3) we assume that the management style of non-overconfident CEOs in terms of aggressive financial strategy is similar in both family and non-family firms.

Additionally, the problem of the influence of CEO characteristics on corporate financial strategies is worth considering. Again, this problem will be broken down into family and non-family businesses. So far, the role of the CEO in family firms has drawn attention in many research studies. Villalonga and Amit (2006) find that family firms create value only when the founder serves as CEO or when the founder is chairman with a hired CEO. Since this research there has been quite abundant research on the role of the CEO in family firms; CEOs coming from the family and (non-family CEOs) coming from outside [91,92]. Another stream of research on the role of the CEO in family firms refers to the theory of the upper echelon and the individual characteristics of the CEO [93].

Based on the existing research findings on the impact of CEO overconfidence and family status on corporate financial strategy and firm performance, we think that there exists an interesting avenue of research. The corporate financial strategy of family firms was shown to be both conservative and aggressive while the overconfident CEO was proved to implement an aggressive corporate financial strategy.

With regard to family firms and CEO overconfidence, to the best our knowledge, there are only two studies: one by Hung et al. [94] and the other by Orlando et al. [95]. On the one hand, Hung et al. (2013) examined the effect of managerial overconfidence and family business characteristics on financial distress. Their empirical results show that overconfident CEOs in non-family businesses and non-overconfident CEOs in family businesses are significantly and negatively correlated with financial distress, respectively. On the other hand, Orlando et al. [95], in their theoretical paper, study how the risk propensity of family firms is influenced by the overconfidence of those family members who are participating in the board of directors. They hypothesize that the beliefs of those



family members who exert control over the firms are a relevant predictor of the risk behavior of the company.

Additionally, it can be stated that in the case of non-overconfident CEOs, there should be convergence between the CEO's financial strategy and the expectations of the owner family. However, in the case of a divergence of opinions on the company's financial strategy, the family's power may weaken the CEO's characteristics (overconfidence) and influence on the direction of this strategy. In the case of firms without family influence, the overconfident CEO may have more influence on the adoption of an aggressive financial strategy compared to the non-confident CEO. Therefore, two further research hypotheses were put forward by the authors. The fourth hypothesis (H4) states that in family firms the management style of non-overconfident CEOs and overconfident CEOs is similar in terms of financial strategy. However, in hypothesis five (H5), in non-family firms we expect to find a more aggressive financial (investment and financing) strategy conducted by overconfident managers when compared to non-overconfident managers.

It should be noted that a specific financial strategy (aggressive or conservative) also has specific results. Implementing an aggressive strategy should lead to higher profitability, while a conservative strategy (as it is more costly) generally leads to lower profitability [96].

3. Research Methodology

To achieve our main research aim and verify research hypotheses, we employ the research process that includes, e.g., a way of identifying family firms, managerial overconfidence, investment, and financing strategy.

To identify the status of the firm (family or non-family), we follow the Substantial Family Influence (SFI) index. SFI index is composed of three elements [97]: the family's share in the capital of the firm, on condition that the family holds at least some shares; the family's share of the seats on the governance board; and the family's share of the seats on the management board. According to Klein (2000), a company can be considered a family company, when the sum of the family's share in the equity, government, and management board is equal to or greater than 1 (maximum 3). If the SFI index indicates that it is a family firm (FF), then the value equals 1, otherwise (nFF) the value equals 0.

To identify and measure overconfidence, we followed the methodology of Wrońska-Bukalska [85], who assumes, after Moore & Healey [83], that overconfidence is a complex phenomenon consisting of over-estimation, over-placement, and over-optimism. She uses the survey approach to identify overconfidence and developed an original method of overconfidence measuring. This methodology allows identifying managerial overconfidence and separating overconfident managers from the non-overconfident. If the survey indicates that a manager is overconfident (OC), the variable is equal to 1, and 0 otherwise (nOC).

There are two main elements of financial strategy that managers can influence: investment and financing [42]. Herein, dividend decisions are a type of decision that belongs solely to the owners and not to the managers. Managers can only suggest, and the recommendation is not binding. Financial strategy and firm performance are identified through financial ratios. These variables (financial ratios) are commonly used in research on CEO power, family firms, and the impact of overconfident managers on corporate strategy [98,99]. We use these in our research to ensure comparability of our findings with previous studies.

The sample in our study comes from non-listed (private) enterprises based in Poland. We decided on undertaking a research study of privately owned companies as, in Poland, this type of business is dominant (99.9% of active business entities); hence, private companies are representative for the average Polish business enterprise. We surveyed only those companies that meet the following requirements: established before 2010, active in business for the entirety of the 2010–2015 period, having the same president in place for the entire period, and having a complete and available financial statement. In addition, we remove insurance and banking companies. The final sample includes all companies that were willing to participate in the survey (out of those that met the above requirements).

Subsequently, we collected the financial statements of the companies from the sample, with financial data covering the whole period. Financial data was collected from the Notoria Serwis database. Our sample constitutes the panel data sample. We collect 145 surveys and were able to divide the sample (870 observations) into two subsamples:

- family firms (FF—97 companies and 582 observations) and non-family firms (nFF—48 companies and 288 observations),
- overconfident managers (OC—67 companies and 402 observations) and non-overconfident managers (nOC—78 companies and 468 observations).

In the study, two grouping variables were used to divide the companies into two groups. The first grouping variable made it possible to divide the companies into family and non-family firms. The second grouping variable allowed for the division into groups of companies managed by an overconfident CEO and a non-overconfident CEO. To assess the differences between subsamples in terms of research questions (investment and financing strategies, firm performance) on the basis of the collected data, we employ a non-parametric U Mann Whitney test. The set of variables used in the study, their formula, and their interpretation are presented in Table 1.

Table 1. Description of the variables used in research.

Variables Describing Financial Strategy			
Variables	Proxy for	Formula	Interpretation
Invest1	Investment strategy	Increase in Fixed Assets + Depreciation to Total Assets (in %)	higher Invest1 Ratio = more aggressive investment strategy
Invest2	Investment strategy	Increase in Fixed Assets + Depreciation to Sales Revenue (in %)	higher Invest2 Ratio = more aggressive investment strategy
Fin1	Financing strategy	Total liabilities to Total Assets (in %)	higher Fin1 Ratio = more aggressive financing strategy
Fin2	Financing strategy	The sum of Equity and Long-Term Debt to Fixed Assets (in %)	higher Fin2 Ratio = less aggressive financing strategy
Grouping variables			
Variables	Proxy for	Formula	Interpretation
FF/nFF	Family Firm status	Dummy variable: 0 or 1	1 if the company is a family firm; 0 otherwise
OC/nOC	CEO Overconfidence	Dummy variable: 0 or 1	1 if the CEO is overconfident; 0 otherwise

Source: author's own elaboration.

4. Results and Discussion

Tables 2–6 present the descriptive statistics reflecting investment and financing strategy for two subsamples and the results of the non-parametric U Mann Whitney test. From the data collected, we identify the differences in corporate strategies depending on the status of the company and its managerial characteristics. We applied the U Mann Whitney test for two independent samples to find statistically significant differences in the investment and financing strategy of the sample companies. We use this test because our data do not reflect the normal distribution.

Table 2. Descriptive statistics describing financing strategy in family and non-family firms.

Variables	Descriptive Statistics		UM-W Test	
	FF	nFF	Test Statistics	p Value
Invest1	2.1	4.6	−4.825	~0.00
Invest2	1	2.2	−4.84	~0.00
Fin1	49.1	51.4	−2.126	0.024
Fin2	191.6	144.8	−3.275	0.012

Source: author's own calculations.

Table 3. Descriptive statistics describing investment and financing strategy in subsamples for overconfident CEOs.

Variables	Descriptive Statistics for OC		UM-W Test	
	FF	nFF	Test Statistics	p Value
Invest1	0.2	2.9	−4.739	~0.00
Invest2	0.1	1.3	−4.504	~0.00
Fin1	46.2	54.5	−3.375	0.001
Fin2	190.2	111.6	−4.415	~0.00

Source: author's own calculations.

Table 4. Descriptive statistics describing investment and financing strategy in subsamples for non-overconfident CEOs.

Variables	Descriptive Statistics for nOC		UM-W Test	
	FF	nFF	Test Statistics	p Value
Invest1	0.8	0.8	−0.764	0.272
Invest2	0.4	0.4	−1.037	0.322
Fin1	49.6	47.6	−0.056	0.861
Fin2	216.6	230.3	−1.121	0.262

Source: author's own calculations.

Table 5. Descriptive statistics describing investment and financing strategy in subsamples for family firms.

Variables	Descriptive Statistics for FF		UM-W Test	
	OC	nOC	Test Statistics	p Value
Invest1	2.3	1.8	−0.674	0.102
Invest2	1.1	0.9	−0.192	0.133
Fin1	47.8	49.4	−0.818	0.2
Fin2	185.7	207.6	−1.461	0.488

Source: author's own calculations.

Table 6. Descriptive statistics describing investment and financing strategy and firm in subsamples for non-family firms.

Variables	Descriptive Statistics for nFF		UM-W Test	
	OC	nOC	Test Statistics	p Value
Invest1	6.1	2.8	−3.066	0.002
Invest2	2.8	1.8	−2.807	0.002
Fin1	53.6	45.8	−2.145	0.045
Fin2	111.2	167.9	−4.576	~0.00

Source: author's own calculations.

According to the results in Table 2, when describing family firms, we find statistically significant differences to non-family firms. These differences refer to all variables that reflect both financial strategies (both investment and financing) and firm performance.

Here, family firms invest less. Invest1 and Invest2 is lower which means that Increase in Fixed Assets in relation to Total Assets and Sales Revenue is lower than for non-family firms. This means that approximately 2% of Total Assets (compared to almost 5% in non-family firms) is invested by family firms. Non-family firms invest twice more than family firms, as Invest1 and Invest2 are twice as high for non-family firms. Higher investments are a proxy for a more aggressive strategy.

Family firms also have a lower debt ratio. Fin1 (Total Liabilities to Total Assets) for family firms is less than 50%. This means that less than 50% of Total Assets are financed by Total Liabilities. The Total Assets of non-family firms are financed by Total Liabilities to a greater extent—more than 50% of Total Assets are financed by Total Liabilities. A higher level of Total Liabilities financing Total Assets means an aggressive financing strategy. Fin2 (the sum of Equity and Long-Term Debt in relation to Fixed Assets) for family firms is at a level of almost 192%. This means that Long Term Capital is two times higher than Fixed Assets for family firms. A higher level of Fin2 is evidence for a conservative strategy. For nonfamily firms, Fin2 is much lower and means that Long-Term Capital accounts for 150% of Fixed Assets. This means that non-family firms pursue an aggressive financing strategy.

The lower level of Invest1 and Invest2 for family firms indicates a conservative investment strategy. The lower level of Fin1 and the higher level of Fin2 for family firms again indicate a conservative financing strategy. This means that family firms pursue conservative financial strategies compared to non-family firms, which allows us to state that the first hypothesis (H1: assuming that more conservative financial strategy is implemented by family firms) is positively and fully verified.

Based on the results of Table 3, it can be concluded that overconfident managers behave differently depending on the status of the company. In family firms, overconfident managers invest significantly less—Invest1 and Invest2 are much lower than for non-family firms. In addition, the financing strategy of overconfident managers differs significantly depending on the company status—for family firms overconfident managers implement more conservative financing strategies: Fin1 is lower, proving a lower level of Total Liabilities, and Fin2 is higher, proving more Long-Term Capital in Fixed Assets financing. Company status is an important factor affecting different behavior of overconfident managers—in family firms, overconfident managers behave in a more conservative way. The analysis of the obtained results allows us to verify the next two research hypotheses, hypothesis two (H2: assuming more aggressive financial—investment and financing—strategy conducted by overconfident managers in non-family firms compared to family firms).

According to the results of Table 4, the nature of the financial strategy generated by the non-overconfident CEO is similar for both types of companies: family and non-family. In the case of family and nonfamily companies managed by non-overconfident managers, there are small differences between the levels of variables, but they are statistically insignificant. Companies managed by non-overconfident managers implement similar strategies. The analysis of the obtained results allows us to verify hypothesis three (H3: assuming that the management style of non-overconfident CEOs in terms of financial strategy is similar in both family and non-family firms).

Based on the results presented in Table 5, the financial ratio that describes the investment and financing strategy for overconfident managers shows the implementation of a slightly more aggressive strategy. Both Invest1 and Invest2, however, show no statistically significant differences in family firms managed by overconfident managers or non-overconfident. The same situation holds for Fin1 and Fin2. It can also be concluded that in family firms there are no statistical differences in the levels of variables adopted to describe the nature of the financial strategy, regardless of whether the overconfident CEO or non-overconfident CEO is behind the financial strategy. This means that family firms present a more coherent group of companies due to the financial strategy pursued regardless of the CEO's overconfidence. The CEO characteristics have no impact on financial—investment and financing—strategy in family firms.



We can state that family power can curb CEO characteristics (overconfidence) and their impact on financial strategy. The family firms present a more coherent subsample no matter what the CEO characteristics are. This means that the family status of the company is a more impactful management process than is the case with non-family firms. The obtained results allow us to verify the fourth hypothesis (H4) stating that in family companies the management process by non-overconfident CEOs and overconfident CEOs is similar in terms of financial strategy.

CEO characteristics are more impactful in companies without family influence. Analyzing the results presented in Table 6, it should be stated that there are statistically significant differences in financial strategy between companies managed by overconfident and non-overconfident managers in the non-family firms subsample. Invest1 and Invest2 are higher for overconfident managers and this means that non-family companies managed by overconfident managers pursue a more aggressive investment strategy. In addition, higher Fin1 and lower Fin2 for overconfident managers mean that overconfident managers implement a more aggressive financing strategy. The obtained research results allow us to verify the last and fifth research hypothesis (H5: assuming that in non-family firms a more aggressive financial—investment and financing—strategy is conducted by overconfident managers, when compared to non-overconfident managers). When there is no family involved in the company, the CEO characteristics matter.

Summarizing all the results obtained, it should be stated that there are more differences between family and non-family firms than between companies managed by overconfident or non-overconfident managers. This means that company status (especially family) has a stronger impact on corporate financial strategies.

Our findings on family firm corporate financial strategies show that sample firms conduct conservative investment and financing strategies, in line with previous research [63–67]. They also find that family firms implement conservative financial strategies, both in investment and financing. Our findings of conservative financial strategies of family firms contradict those showing a more aggressive picture of family firms [98,99]. However, when it comes to aggressive financial strategy, we find that non-family companies managed by overconfident CEOs present more aggressive financial managers' behavior. If CEO overconfidence has an impact, this impact is explicit in non-family firms. This confirms previous findings [84,87]. Based on the research, the authors propose the following recommendations.

1. It is worth supporting the functioning of family businesses and conducting activities that encourage sustainable entrepreneurship.
2. It is worth promoting the value of family businesses in society.
3. It is worth introducing the institutional, official status of a family business, which would be taken into account in the EU economic policy and in the statistics.
4. In the case of non-family businesses, it is worth implementing solutions such as family ones, focused on sustainability and non-financial values.

5. Conclusions and Recommendations

In this article, we attempt to determine the impact the characteristics of CEOs (overconfident or non-overconfident) on corporate financial strategies. The problem is relevant to the issue of sustainable entrepreneurship and the achievement of sustainable development goals (SDGs). An overconfident CEO usually contributes to an aggressive financial strategy of the company, which usually excludes the possibility of ending up as a sustainable entrepreneur. We find a fairly coherent group of family firms that implement a more conservative corporate financial strategy regardless of the characteristics of the CEO. The behavior of an overconfident CEO in family firms is similar to that of a non-overconfident CEO in family firms (more conservative). We can state that family power can curb CEO overconfidence and its impact on financial strategy and firm performance.

This means that family businesses, as opposed to non-family businesses, have a much higher potential to implement actions related to sustainable entrepreneurship. The process of achieving sustainable development goals (SDGs) in the EU should be multidimensional,

by which the authors mean implementing these goals in many economic, social, and environmental areas, with the simultaneous involvement of society, local authorities and institutions, national authorities and institutions, and the involvement of community institutions. The market-oriented functioning of family businesses, combined with their socio-emotional wealth and conservative financial strategy, translates better into most of the mentioned areas related to the achievement of the SDGs. A high share of family businesses in the total number of small and medium-sized private enterprises should be a priority of the policy promoting sustainable development of individual Member States, as well as the entire European Union.

Our research is not free of limitations related to the nature of the survey study. The sample selection was purposive, which, however, is typical for most studies on the functioning of enterprises. We included in the sample all those who agreed to participate in the survey, and the percentage of refusals to participate in the study did not exceed 5%. The authors are aware of the limitations of such a study related to the composition of the sample and the sampling process. Our sample is not representative and limited to non-listed companies. Research limitations, however, indicate the direction of future research. It is recommendable to conduct this research on a bigger sample of representative companies, or maybe even on an international scale. Additionally, we believe that in the transformation process towards sustainable goals, some friction may appear. As friction is difficult to investigate with economic methods, we might implement econophysics methods devoted to the efficiency of dynamic process calculations [100].

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