

## DYNAMIC CAPABILITIES AND THE PERFORMANCE OF FAMILY AND NON-FAMILY BUSINESSES. A PERSPECTIVE ON ENVIRONMENTAL VOLATILITY

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**Purpose:** The study explores the relationship between the performance of Polish family and non-family firms and their dynamic capabilities. It also aims at recognizing if environmental dynamism moderates that relationship. Moreover, it is focused on identifying whether family and non-family businesses differ in their dynamic capabilities in a highly dynamic environment.

**Design/methodology/approach:** The study draws on a quantitative research that was conducted among family and non-family firms functioning in the Polish market.

**Findings:** The study results indicate that the performance of businesses depends on their dynamic capabilities regardless of whether it is a family or non-family firm. Moreover, the study shows that in a highly dynamic environment, environmental dynamism does not moderate the relationship between the performance of businesses and their dynamic capabilities. Finally, the study's findings reveal that family and non-family firms did not differ in their dynamic capabilities in such an environment.

**Research limitations/implications:** The study was conducted at a particular time, a pandemic period. Possibly, the study's results would have been different in a not-so-unusual environment.

**Practical implications:** The study's outcomes can motivate entrepreneurs to increase the dynamic capabilities of their companies, as it shows that they influence firms' performance.

**Originality/value:** The study develops the present knowledge concerning the dynamic capabilities of family and non-family firms. Therefore, its outcomes support both theory of family firms and the theory of dynamic capabilities. Moreover, the research extends the understanding of how businesses operate in a challenging and dynamic environment.

**Keywords:** dynamic capabilities, family business, non-family business, performance, environmental dynamism.

**Category of the paper:** Research paper.

## 1. Introduction

The volatility of the environment of contemporary businesses, the depth of the changes taking place, and their speed and frequency are a challenge for managers who have to cope with these difficult conditions. One suggestion for dealing with these challenges is to build dynamic capabilities (DCs), which can help achieve higher efficiency and gain a competitive advantage. Given the challenges associated with the need for organizational change, especially of a strategic nature, the question arises as to how helpful DCs are, how they function and what results they produce or whether they increase the efficiency/performance of companies (Schilke et al., 2018). Much of the research on this issue (Baía et al., 2019) points to a positive relationship between DCs and performance. However, previous research results on the relationship between DCs and performance are inconsistent, as highlighted by the researchers (Baía et al., 2019). That justifies studying these relationships in Polish companies under post-transformation economies, where business conditions differ from mature economies and therefore deserve particular attention from researchers (Bruton et al., 2018; Wales et al., 2019).

All the more so because there are few empirical studies on this issue (see Głód, Wronka-Pośpiech, 2022; Pichlak, 2021). Another research gap concerns the scope of DCs in FBs firms since, as some researchers rightly point out - there is relatively little research on DCs in these companies, which are characterized by many specific attributes (Daspit et al., 2019; Ochoa et al., 2020). Thus, we question whether family-owned companies differ - compared to non-family-owned ones - in the extent of their declared DCs. The relationship between DCs and performance that interests us may depend on numerous factors, especially external factors characterizing the state of the environment in which companies operate. Studies of emerging market firms confirm the positive relationship between DCs and performance. However, the extent of the benefits depends on many factors, among which the environment's dynamism weakens the relationship (Park, Xiao, 2020). Both these and other studies inspire research into the dynamic environment's role in shaping the relationship between DCs and performance in a Polish FBs and NFBs businesses. Some studies indicate that even in a stable environment, a positive relationship is found between DCs and performance (Karna et al., 2016). However, it is essential to note here the issue of different subjective perceptions of the state of the environment and its impact on company performance and the different sensitivity of individual companies to changes in the environment.

## 2. Theoretical Background and Hypotheses

### 2.1. Dynamic capabilities

The concept of DCs originates in the work of the team of Teece et al., in particular, this refers to the article by Teece, Pisano and Shuen (1997), where we find its main assumptions. Teece et al. (1997) defined DCs as "the firm's ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments" or "the organization's ability to achieve new and innovative forms of competitive advantage given path dependencies and market positions" (p. 516). According to Teece et al. (1997), the term "dynamic" reflects the organization's ability to renew competencies to achieve compliance with the changing business environment. In contrast, the term "capabilities" emphasizes the critical role of strategic management in properly aligning, integrating and reconfiguring internal and external skills, resources and functional competencies to achieve compliance with the demands of the environment. Eisenhardt and Martin (2000) also played an essential role in the formation of the concept of DCs, viewing DCs as the processes within a company (especially the processes of integrating, reconfiguring, acquiring and releasing resources) that allow resources to be used to adapt the company to, or even induce, market changes. According to these authors, DCs are organizational and strategic routines through which companies create new configurations of resources during the formation, merger, division, development and disappearance of markets. Eisenhardt and Martin (2000) emphasize that the importance of DCs lies in the appropriate configuration of resources, not just in the resources themselves and that competitive advantage is achieved by using these resources faster and better than competitors. The research perspective on DCs, despite the passage of time, continues to receive much attention from researchers (Matarazzo et al., 2021; Chesbrough et al., 2021; Montreuil et al., 2020). There are also critical voices around the concept of DCs, and thus attempts to redefine DCs continue (Helfat, Martin, 2015; Protopogerou et al., 2012; Wang, Ahmed, 2007; Yeow et al., 2018).

In contemporary DCs research, the starting point for consideration is almost always the definition proposed by Teece et al. (1997). However, the discussions that have taken place around this concept have led to numerous modifications of it. Likewise, they as well as proposals for various typologies of DCs. The definitions of DCs have been reviewed and analyzed by, among others, Ambrosini and Bauman (2009), Breznik and Hisrich (2014) and Kurtmollaiev (2020). To operationalize DCs, certain types of DCs are distinguished, such as (1) reconfiguration -transforming and recombining assets and resources; (2) leveraging - replicating a process or system operating in one business unit into another; (3) learning - experimenting and reflecting on failures and successes; and (4) integrating assets and resources, resulting in a new resource configuration (integrating - integrating assets and resources, resulting in a new resource configuration) (Teece et al.,1997).

Various other attempts to desegregate this construct emerged in the years that followed. For example, Wang and Ahmed (2007) proposed a division into adaptive, absorptive and innovative capabilities. In turn, the division of DCs into reconfiguration, leveraging, learning, and creative integration was used in studies by Bowman and Ambrosini (2003; 2009). Teece also modified the dimensions of DCs (relative to the 1997 publication) by separating: sensing and shaping opportunities and threats, seizing opportunities, and maintaining competitiveness through enhancing, combining, protecting and reconfiguring assets (Teece, 2007). On the other hand, Makkonen et al. (2014) distinguished such components as reconfiguration, leveraging, learning, sensing and seizing, knowledge creation and knowledge integration in the DCs process.

For our research, we used operationalizing DCs, which include three dimensions (Teece, 2014; Teece, 2007): (1) identification and assessment of opportunities in the environment (sensing); (2) mobilization of resources to address opportunities and capture value (seizing); and (3) continued renewal (transforming). This conceptualization of DCs as useful for empirical research is also suggested by other researchers (Lessard et al., 2016; Breznik, Hisrich, 2014). According to Teece (2014): sensing includes activities such as identification, development, co-development and assessment of opportunities in the environment (including technological ones) concerning customer needs, which involves "identification, development, co-development and assessment of technological opportunities in relationship to customer needs" (p. 332). In the second dimension, as stated by Teece (2014), seizing consists of activities to mobilize resources to meet market needs, seize identified opportunities, and ultimately capture the value resulting from these activities. Teece believes that seizing is a critical element of DCs, enabling the company to adapt to environmental changes - based on identified opportunities. At this stage, it is possible to fully understand new business opportunities and decide on the scope of necessary changes that must be made (Teece, 2007, 2014). The last dimension, according to Teece (2014, 2007) – transforming - is a process of continual renewal, which that includes "asset alignment, co-alignment, realignment, and redeployment" (Teece, 2007, p. 1336) to achieve reconfiguring organizational resources (Teece, 2007, 2009).

A broader analysis and characterization of the various dimensions of DCs was made by Yeow et al. (2018), among others, who divided the process: (1) "sensing" into the following stages/activities: scanning action, learning and calibrating action; (2) "seizing" - includes: designing, selecting among options, and committing; "transforming" - consists of leveraging, creating, accessing and releasing. DCs include the hard-to-copy capabilities of an enterprise that are necessary to take advantage of market and technological opportunities identified in the environment. They include a company's ability to shape the business environment in which it operates, develop new products and processes, and design and implement new business models. DCs reflect an organization's ability to achieve new and innovative forms of competitive advantage (Teece et al., 1997).

Researchers agree that DCs are characterized by a hierarchical structure (Ambrosini et al., 2009; Schilke, 2014b), but there is no complete consensus on the levels of DCs or their dimensions. DCs researchers usually distinguish between two levels of enterprise capabilities: "ordinary" capabilities and dynamic capabilities (Teece, 2014). The former allows to produce the currently offered products and services and sell them, and what characterizes them is the ease of copying them (Teece, 2014). The division of capabilities into such two categories is quite widely used (Schilke et al., 2018; Protogerou et al., 2012), with DCs being recognized as those of a higher order (Winter, 2003; Helfat, Winter, 2011), characterized by, among other things, being difficult to copy. A discussion of the applied typologies of DCs is presented in the literature by Breznik and Hisrich (2014), Ambrosini and Bowman (2009) and others.

It is worth noting that it is also proposed to divide enterprise capabilities into three levels (Schilke, 2014b; Hine et al., 2014). The distinguishing feature of DCs is that they are a systematic means to implement strategic change. All capabilities, including DCs, entail the ability to perform activities in a practised and patterned way, following a particular pattern. Thus, they enable repetitive and reliable execution of activities aimed at strategic change instead of entirely ad hoc problem solving (Schilke et al., 2018). Companies with strong DCs are seen as highly entrepreneurial. Only DCs enable appropriate strategic decisions that ensure that the existing resource base is intentionally modified and adapts to changes in the environment or even induces changes in the environment (Schilke et al., 2018). Ambrosini, and Bowman (2009) believe that DCs must perform two essential functions: regenerative and renewing, which they link to two types of capabilities: regenerative and renewing. Regenerative capabilities are supposed to enable a company to move away from its current methods or practices of change and adopt new ways of organizational change. On the other hand, renewing capabilities allow the company to modify its resource base. DCs studies present different views on DCs, including their form-whether they are idiosyncratic or common to organizations, how they affect efficiency, and whether they provide a sustainable competitive advantage. Instead, it is now believed that DCs exist in different forms and exhibit common characteristics; in detail, they can be idiosyncratic (Di Stefano et al., 2014; Peteraf et al., 2013).

In this context, it seems interesting to ask whether the extent of DCs created in companies may vary, especially since some researchers indicate that the value of DCs for a given company may depend on the context and situational conditions (Helfat et al., 2007). Thus, the possessed capacity of a company's top management, size, the nature of the sector in which the business is conducted or, more broadly, the characteristics of the environment can affect the differential level of DCs earned, as well as the strength of the relationship between DCs and performance. The company's family status may also be a differentiating factor, as studies of family businesses (FBs) have found many specific characteristics that distinguish these entities from other non-family businesses (NFBs).

## 2.2. Dynamic capabilities in family and non-family businesses

The level of DCs in FBs and NFBs may be different, as there are numerous differences between these types of companies, confirmed by studies conducted in different countries (Gedajlovic et al., 2012; Chrisman et al., 2009). The peculiarities of FBs are of interest to many researchers (De Massis et al., 2021; Neubaum, Payne, 2021), but a definition of FBs is lacking. For our research, it was assumed that a FBs is an enterprise of any legal form, the capital of which in whole or in a decisive part ( minimum - 30% of shares, in the case of listed companies) is held by a family (one or more) and at least one family member manages or co-manages the company intending to keep the company permanently in the hands of the family. The operational definitions of FBs used by researchers in other countries are similar in accounting for one or more of the criteria listed above (see, for example, Waterwall, and Alipour, 2021). However, some researchers also include an additional or exclusive criterion - the company's perception as family-owned by its representatives (see Brinkerink, 2018).

In identifying the differences between FBs and NFBs, it is essential to remember that FBs are not a homogeneous category either (Kosmidou, Ahuja, 2019; Stanley et al., 2019; Brune et al., 2019). Of particular interest to us are those differences between FBs and NFBs that may affect their strategic behaviour - from the perspective of DCs. These differences arise from the fact that the family exerts influence on the FBs through ownership (in Poland, most FBs are 100% owned by a single family) and the exercise of critical managerial functions, particularly participation in top management. As research indicates (Duran et al., 2016), FBs are not only oriented toward financial goals, but non-economic goals are also of great importance to them, mainly related to passing the business on to the next generation. That implies avoiding risky decisions that threaten family security (Schulze et al., 2001). The long-term orientation of FBs raises various implications, including that it can contribute to building closer relationships with customers or suppliers based more on trust, which in turn can provide them with easier access to valuable knowledge not otherwise available (Duran et al., 2016).

It should be added, however, that a lack of research in Poland would unequivocally confirm the orientation of FBs towards non-economic goals, as a generation of founders still leads the vast majority of these companies. There is also a lack of research confirming their long-term orientation. Based on research from matured economies, FBs are commonly seen as these companies that distinguish from NFBs "conservativeness" of strategic behaviour and risk aversion (FBs are more "conservative," avoiding the risks associated with investing in new solutions). Moreover, FBs are perceived as more closed and inward-looking than NFBs. The other difference between FBs and NFBs is seen in the degree of "progression" of human resources issues and appropriateness of staffing (FBs are less progressive on these issues, relying more on the potential of the founder and other family members). Furthermore, FBs are attributed with the other propensity to innovation, creativity and change compared to NFBs (FBs attach less importance to these values) (Cassia et al., 2012, p. 201). Studies also confirm

the lower degree of management professionalization in FBs (Culasso et al., 2016), and thus the use of less sophisticated management methods, poorer information systems, and less accurate monitoring of the environment.

Some studies also indicate that FBs have a lower level of innovation. However, research results in this area are sometimes contradictory, among other things, due to whether input or output innovation is studied. Studies generally confirm that the relationship between FBs' status and input innovation is negative (FBs invest less than NFBs), and output innovation is positive (Duran et al., 2014). Differences in the level of innovation output in FBs and NFBs are confirmed by numerous comparative studies on these categories of companies (Classen et al., 2014; Werner et al., 2018).

The differences between FBs and NFBs are essential as they may be related to the strategic behaviour of FBs relating to building and utilizing the DCs of these companies in a volatile environment. Gomez-Mejia et al. (2014) uncovered circumstances that, for example: determine R&D investment decisions in FBs, ultimately resulting in lower innovation expenditures in FBs than in other companies. They also found a negative relationship between family ownership and R&D investment (Chen, Hsu, 2009), suggesting that family ownership may not encourage risky, long-term R&D investment.

The above brief review of studies relating to the differences between FBs and NFBs confirms that the peculiarities of FBs affect many aspects of their functioning. These include innovativeness, which has a complex relationship with the strategic behaviour of these entities and their entrepreneurial orientation (Linares, Fernández, 2020; Lumpkin et al., 2010) and ultimately with the DCs they possess. The uniqueness of FBs is undoubtedly reflected in strategic management (Barros et al., 2016; Daspit et al., 2017), and the characteristics of FBs may influence their formation and use of DCs, although there is relatively little comparative research on this issue. It is also worth citing research findings that confirm that resources, knowledge management and learning, alliances, and environmental dynamism are antecedents of DCs that positively influence DCs (Bitencourt et al., 2020). In terms of resources, knowledge management and alliances may differ between FBs and NFBs. Studies confirm the specificity of DCs in FBs, including that FBs adapt to changes in the environment mainly through innovation (Duarte et al., 2018; Wang, 2016).

DCs are manifested in most of the FBs studied (qualitative research) through "organizational heritage", "home-grown" capabilities, VRIN attributes (valuable, rare, inimitable and non-substitutable), open culture, signature processes and idiosyncratic/tacit knowledge (Duarte et al., 2018, p. 694). However, the creation of DCs takes place in the long-term, and it rather concerns the times of the second generation - as then knowledge and experience accumulate. DCs in FBs include, for example, succession planning capabilities (Morgan et al., 2021). In addition, DCs research on FBs (Chirico, Nordqvist, 2010; Camisón-Zornoza et al., 2020) clearly shows the impact of various aspects of family involvement in the business on DCs. It has been empirically proven that DCs in FBs are influenced by ownership,

management and governance (corporate and family) (Camisón-Zornoza et al., 2020). In addition, Camisón-Zornoza et al.'s (2020) research identifies which structural factors of FBs positively and which negatively affect innovation capacity - from a DCs perspective. Given the peculiarities of FBs that influence their strategic behaviour and, at least in part, the idiosyncratic nature of DCs in these entities (Daspit et al., 2019), it is possible to formulate a hypothesis regarding the categories of companies studied:

H1: There is a difference in the declared dynamic capabilities between FBs and NFBs.

### **2.3. Dynamic capabilities and performance**

The rationale for developing the concept of enterprise DCs and its application, we believe, is in research confirming the impact of these capabilities on performance (Eikelenboom, de Jong, 2019; Fainshmidt et al., 2016). DCs influence the broader performance of companies multi-directionally (Wilden et al., 2013), and this influence is confirmed by the creators of the DCs concept (Teece et al., 1997; Teece, 2007). Research shows that DCs lead to improvements in the efficiency of a company's operations and enable better use of resources to adapt the organization to external changes and even to create changes in the market. Some researchers believe that it is DCs that are fundamental when it comes to performance differentiation (Wang et al., 2015). Numerous studies confirm the positive impact of DCs on performance, using various performance measures, such as firm profitability (Protogerou et al., 2011).

From the earlier characterization of the DCs concept, it can be concluded that its positive impact on performance is since it ensures faster exploitation of opportunities in the environment and allows to create of the needed configuration of resources to seize the opportunity (Eisenhardt, Martin, 2000; Teece, 2007; Stadler et al., 2013; Wilden et al., 2013). It is noted that companies with higher levels of DCs, regardless of the form or type of DCs, are more likely to scan the environment actively. Better than other companies, they also acquire and assimilate new information about the market and prepare an appropriate response to the changes. These research results allow us to assume that companies (FBs and NFBs) with higher levels of DCs will perform better (Wang et al., 2015). Based on this, we formulated a hypothesis:

H2: There is a positive relationship between DCs and performance in FBs and NFBs.

### **2.4. The strength of the relationship between dynamic capabilities and performance in family and non-family firms**

Studies show that the impact of DCs on company results can be direct (Teece et al., 1997) or indirect, such as contingent upon market dynamism (Schilke, 2014a). An extensive review of research on the relationship between DCs and performance, taking into account the influence of moderating and mediating variables, was done by Baía et al. (2019). To confirm how inconclusive the findings are, one can cite studies, e.g., conducted in SMEs, which found that DCs positively affect relative non-financial performance and have no impact on financial performance. In addition, studies show that not every type/dimension of DCs has the same



impact on economic performance. On the other hand, Girod and Whittington (2017) found that restructurings tend to have a positive impact on outcomes, while reconfigurations tend to have a negative impact. Thus, some research suggests that while DCs enable change, they do not necessarily lead to better performance. That is because management may misperceive the need for change and implement DCs unnecessarily or in the wrong form (Makkonen et al., 2014; Ambrosini et al., 2009), which means that the strength of the relationship between DCs and corporate performance may - as we pointed out earlier - depend on situational conditions, internal and external factors (Helfat et al., 2007). Factors that may also affect the strength of the relationship between DCs and performance may be those that determine a company's family status.

Some research results confirm that the peculiarities of FBs result, for example, in a non-linear relationship between the participation of family members in the top management team and FB performance (Chirico, Baù, 2014; Minichilli et al., 2010). In addition, many studies indicate that family involvement can have both positive and negative effects on the performance of a FBs (see Chirico, Baù, 2014). Given the above inconsistent research results, we are inclined to formulate the following hypothesis:

H3: The strength of the relationship between DCs and performance is comparable for FBs and NFBs.

## **2.5. Dynamic capabilities and environment**

The environment is nowadays a factor that significantly determines the performance of enterprises. Therefore, it is an important variable taken into account in the studies of the effectiveness of enterprises and the determinants of achieving competitive advantage. Such features of the environment as its complexity, volatility, depth or speed of change require top management of companies to adopt an entrepreneurial approach, i.e. a focus on seeking opportunities in the environment, flexibility, responsiveness and the ability to learn (Teece, 2014). The subject of research is numerous features of the external environment. These often cover environmental uncertainty, dynamism, munificence, and complexity (Rueda-Manzanares et al., 2008; Zhang et al., 2020; Głód, Wronka-Pośpiech, 2022). The characteristics of the environment in terms of their impact on the firms' performance are studied in various configurations. For example, dimensions of the environment, such as instability and munificence, are explored together (Sutcliffe, 1994) or separately (Goll, Rasheed, 2004). In particular, the moderating role of the proximity environment (customer behaviour, competition) in the relationship between DCs and performance is explored.

Less frequently, the subject of research is the economic and cultural contexts of the country as moderating variables. An example of the latter is the research of Bitencourt et al. (2020), who found a moderating effect of variables in this context. Their research shows that developed countries and those in the northern hemisphere have a stronger relationship between DCs and firm performance than emerging economies and southern countries (Bitencourt et al., 2020).

They also confirmed the moderating effect of cultural context: "Eastern orientation with a high level of power distance and a low level of individualism promotes stronger effects in the relationship between DCs and firm performance than a Western orientation" (Bitencourt et al., 2020). This research is interesting because it signals the complexity of the relationship between the level of DCs, performance and the environmental context. We are interested in the dynamism of the external environment and its role as a moderating variable in the relationship between DCs and performance.

## **2.6. Dynamic capabilities, firms' performance and dynamic environment**

Miller and Friesen defined environmental dynamism (equated with uncertainty) as "the rate of change of innovation in the industry as well as the uncertainty or unpredictability of the actions of competitor or customer" (1983, p. 222). Environmental dynamism is determined by the rate of change, particularly in the competitive system, customer needs and expectations, and technology in a given sector. In recent years, environmental and climate regulations have also become important. Top management's perceived dynamism of the environment determining the state of uncertainty in the general business environment increases the probability of utilizing the company's capabilities and resources (Aragón-Correa et al., 2003). These earlier studies suggested that the benefits of having DCs would be more significant in a dynamic environment (Zahra et al., 2006.) Although DCs are still perceived as capabilities that allow companies to respond effectively to various environmental changes, the issue of the dynamism of the environment and its relationship to DCs is the subject of some controversy.

Some researchers rightly note that despite the widely perceived volatility of market conditions in which enterprises operate, the dynamism of their environment (as well as other characteristics) can vary: from a "high-speed" environment to a -quasi-stable one. Therefore, the question arises whether an enterprise in any environment needs DCs, or primarily to adapt to rapidly changing environments (Suddaby et al., 2019). Some researchers, especially the creators of the DCs concept, answer this question in the affirmative and note that the construct refers to the adaptation of companies under conditions of rapid environmental change, usually initiated by technological innovation (Teece et al., 1997; Teece, 2007). On the other hand, Eisenhardt, and Martin (2000) found the opposite to be true, i.e. DCs can enable a company to adapt to a relatively stable environment, while they are not valuable for adapting to high-speed change. An analysis of views on the relationship between environmental dynamism and DCs confirms that they are diverse.

Nevertheless, most researchers agree that DCs in a dynamic environment are most helpful (Breznik, Hisrich, 2014). The difficulty of determining the relationship between DCs and characteristics of the environment is pointed out by Ringov (2017). He argues that the impact of DCs on performance must take into account not only the level of dynamism of the environment but also the "sensitivity" of the company to changes in the environment. The complexity of the relationship between DCs and the environment is also pointed out by

Makkonen et al. (2014). Their study sheds light on the impact of DCs on performance in an unstable environment (e.g., in a crisis). It concludes that companies differ in how they experience the effects of a crisis - most often, crises do not affect all companies to the same degree.

Also of interest is the research of Kurtmollaiev (2020), who emphasizes that the role of DCs to enable a company to have a better chance of creating and maintaining a competitive advantage and (at the same time, better performance) is growing in economies where change is rapid. At the same time, intangibles are critical for dealing with competition and differentiating from competitors. Schilke (2014a), for example, finds that the link between DCs and performance can be strongest at moderate levels of environmental dynamism. At the same time, the relationship can be weaker with low levels of environmental dynamism, e.g., due to fewer entrepreneurial opportunities/opportunities, or very strong when environmental changes are too abrupt and unpredictable to take full advantage of a planned strategic change. The already cited study by Girod, and Whittington (2017) shows that the impact of DCs (restructurings and reconfigurations) on economic performance is different in the dynamic environment (as a moderating variable). Namely, restructurings negatively affect performance in a dynamic environment, while reconfigurations have a positive effect.

In summary, the moderating role of the dynamic environment in the relationship between a company's capabilities and performance is confirmed by research (Yu et al., 2018; Karna et al., 2016). At the same time, research shows that company-owned DCs can help companies compete in relatively stable and highly dynamic environments, but the strength of this impact can vary (Protogerou et al., 2012; Schilke et al., 2018; Wilhelm et al., 2015). It should be noted that there is a lack of clarity in predicting the behaviour of companies, and the extent to which DCs are used, when faced with different environmental dynamics (see Wang et al., 2015; Chirico, Baù, 2014). For example, Barrales-Molina et al. (2013) confirmed that the relationship between environment dynamism and DCs was significant only in companies where the environment was perceived to have the highest dynamism.

Considering the presented findings of previous researchers on (i) the relationship between DCs and environmental dynamism and (ii) different views on the role of this environmental characteristic as to the strength of its influence in shaping the relationship between DCs and performance, it is reasonable to formulate a hypothesis on the moderating role of environmental dynamism, in the relationship between DCs and performance, additionally taking into account the differences between FBs and NFBs. On the one hand, some studies indicate that environmental dynamism directly influences DCs of FBs (in particular adaptive and innovative capabilities), as in NFBs (Wang, 2016). However, at the same time, research by Wang (2016) uncovers, for example, the role of trust in shaping these relationships as a specific resource of FBs. In contrast, Casillas et al. (2010) found that FBs better leverage the proactivity of family members managing FBs to improve financial performance when there is a high level of environmental dynamics. Research on the extent to which DCs are used in FBs in the context

of performance in the dynamic environment is inconsistent and does not provide clear answers (see Chirico, Baù, 2014; Schilke, 2014a). In addition, the research confirms that there are differences in assessing the environment's dynamism and generosity by managers of FBs and NFBs (Głód, Wronka-Pośpiech, 2022). At the same time, the earlier analysis of the characteristics of FBs suggests that their greater conservatism and more conservative strategic behaviour involving risk avoidance in investing in innovation may result in lower vulnerability to the impact of the turbulent environment. In addition, - as Ringov (2017) argues - codified DCs may lose importance as the environment's dynamism increases. However, the importance of codified DCs is highly dependent on exposure to the dynamics of change. In this context of the confirmed complexity of the determinants of the relationship between DCs and performance, as well as the mentioned characteristics of FBs, the following hypothesis is legitimate:

H4: The environmental dynamics moderates the relationship between DCs and performance in FBs and NFBs.

### **3. Research methodology**

The hypotheses were verified based on a quantitative survey conducted at the end of Q3/2021 in Poland. The subject scope of the survey consisted of FBs and NFBs, and the criterion of ownership and management was taken into account when identifying FBs. The subject of the study was various aspects of the competitiveness of FBs and NFBs in Poland under the conditions of the global economic crisis. For this article, only part of the collected data concerning the DCs of the surveyed enterprises, their productivity and the environment in which they operate was used.

The Centre for Research and Expertise of the University of Economics in Katowice conducted the study. The survey involved 422 enterprises. The selection of businesses for the sample was purposive, as the study assumed to reach FBs and NFBs. When the selected companies agreed to participate in the study, a link to an electronic survey was sent to the company's e-mail address, requesting the company's managers to complete the questionnaire.

The survey questionnaire prepared for the study included constructs used previously in the literature. These constructs employed seven-point Likert scales (1 = strongly disagree, 7 = strongly agree). The dynamic capability construct was taken from an article by Wilden, Gudergan, Nielsen, and Lings (2013). The questions included in this construct related to company practices and processes, responses to defects reported by employees, and investment in finding solutions for customers, among other things. Among others, the constructs' questions were: "we use established processes to identify target market segments, changing customer needs and customer innovation"; "we observe best practices in our industry". The construct for

environmental dynamism was taken from an article by Li and Liu (2014). It consisted of four statements relating to the impact of the industrial environment, competitor behaviour, technological advances and customer demands on the firm. Example statements from this construct are as follows: "Products or services in our industry are changing rapidly"; "Anticipating changes in customer needs is difficult". The last construct used was about performance. This construct was taken from a study by Schilke (2014a). It covered three elements: (i) our EBIT (profit before interest and taxes) is continuously above the industry average; (ii) Our ROI (return on investment - the ratio of net profit to capital expenditure) is continuously above the industry average; (iii) Our ROS (return on sales - the ratio of net profit to sales revenue) is continuously above the industry average.

The gathered data were analysed using JAMOVI software. First, the Mann-Whitney U test was used to assess whether there is a difference in DCs in FBs compared to NFBs. Then, Spearman's rank correlation coefficient was applied to assess the relationship between DCs and performance. Finally, the logistic regression was made, aiming to ascertain whether the environment's dynamism is a moderator of the relationship between ability and performance in FBs and NFBs. The significant  $p$ -level was set below 0.05.

#### 4. Research results

Respondents' answers for the questions regarding the DCs of their companies varied. In general, however, most indications were about 4 or above. The average response given by representatives of FBs was 5.13 (median = 5.13; standard deviation = 0.902), and among NFBs, it was only slightly lower with a value 4.98 (median = 5.00; standard deviation = 0.956). The data concerning that issue were analyzed using the Mann-Whitney U test to verify the first hypothesis (H1) and establish whether there are statistical differences between FBs and NFBs in their DCs. The results indicate that the two groups of analyzed companies do not differ regarding their DCs (Table 1).

**Table 1.**

*The results of Mann-Whitney U test concerning the differences in the dynamic capabilities between family and non-family firms*

		Statistic	P	Mean difference
Dynamic capacities	Mann-Whitney U	19960	0.106	0.125

Source: own elaboration.

Then, the gathered data were used to identify the relationship between DCs and performance in FBs and NFBs (H2). For that aim, Spearman's correlation coefficient analysis was adopted. The results of it are shown in Table 2. The analysis reveals that DCs correlate with the

performance of both FBs and NFBs. However, it must be emphasized that the relationship is weak in both cases (0.275 and 0.285).

**Table 2.**

*Correlation Matrix concerning the relationship between dynamic capabilities and performance in family and non-family firms*

		Financial performance
<b>NON-FAMILY FIRMS</b>		
	Spearman's rho	0.275
	p-value	< .001
<b>FAMILY FIRMS</b>		
	Spearman's rho	0.285
	p-value	< .001

Source: own elaboration.

The next part of the analysis focused on identifying whether the environment's dynamics moderates the relationship between DCs and the performance of the companies under study (H4). Moderation estimates concerning the role of the environment's dynamics and the relationship between DCs and performance in FBs and NFBs are presented in Table 3.

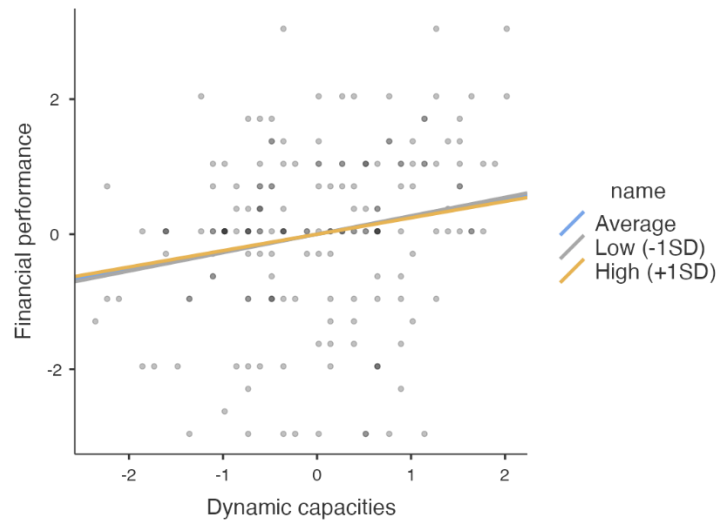
**Table 3.**

*Moderation estimates concerning the role of the environment's dynamics the relationship between dynamic capabilities and performance in family and non-family firms*

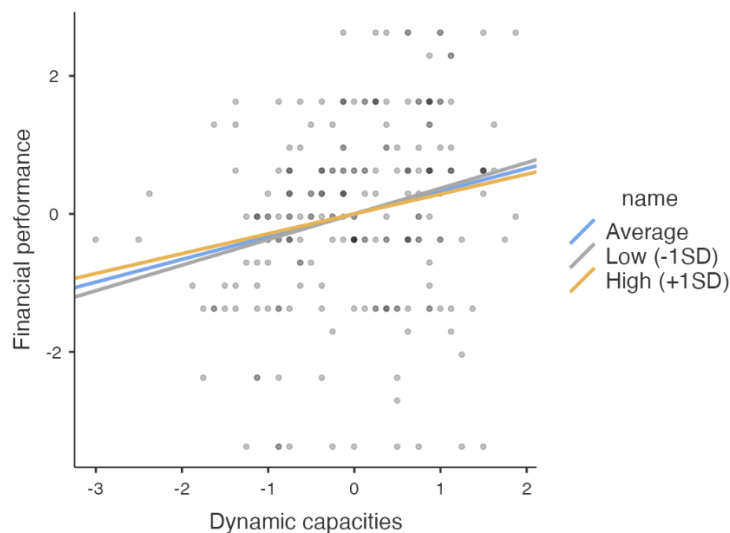
	Estimate	SE	95% Confidence Interval		Z	p
			Lower	Upper		
<b>FAMILY FIRMS</b>						
Dynamic capacities	0.2579	0.0904	0.0808	0.435	2.853	0.004
Environmental dynamism	0.3441	0.0805	0.1864	0.502	4.276	< .001
Dynamic capacities * Environmental dynamism	-0.0139	0.0804	-0.1714	0.144	-0.173	0.863
<b>NON-FAMILY FIRMS</b>						
Dynamic capacities	0.3295	0.0943	0.1447	0.514	3.495	< .001
Environmental dynamism	0.1252	0.0742	-0.0203	0.271	1.686	0.092
Dynamic capacities * Environmental dynamism	-0.0369	0.0792	-0.1920	0.118	-0.466	0.641

Source: own elaboration.

The analysis results in Table 3 reveal that the changes in the environment's dynamism do not affect the performance of FBs and NFBs. The effect of the DCs on the performance at different levels of the moderator (environmental dynamism) is visible in Figures 1 and 2.



**Figure 1.** Simple Slope Plot presenting the effect of the dynamic capabilities on the performance at different levels of the moderator (environment's dynamism) in family firms.



**Figure 2.** Simple Slope Plot presenting the effect of the dynamic capabilities on the performance at different levels of the moderator (environmental dynamism) in non-family firms.

The complete analysis results allow for the verification of the hypotheses adopted in the study. Namely, the findings indicate that hypotheses H1 and H4 are negatively verified; in contrast, hypotheses H2 and H3 is positively verified.

## 5. Discussion

The results of the study presented in the article indicate that the performance of businesses depends on their DCs regardless of whether it is a FBs and NFBs. In particular, they reveal that in FBs and NFBs, the higher the company's DCs are, the better its performance is. That positive relationship between DCs and performance in FBs and NFBs allows concluding that DCs help FBs and NFBs obtain better results from their activities.

Previous research has confirmed that companies can proactively scan the environment and acquire new markets with DCs. Moreover, they have established that DCs allow companies to create the necessary configuration of resources that lead them quickly seize opportunities in the environment (Eisenhardt, Martin, 2000; Teece, 2007; Stadler et al., 2013; Wilden et al., 2013). These studies also have shown that due to DCs, enterprises can prepare an appropriate response to external changes (Wang et al., 2015). Thus, considering that the DCs enable FBs and NFBs to better use their resources in adapting the organization to the surroundings, the positive influence of DCs on the performance of FBs and NFBs seems entirely justified.

The literature review by Baía and Ferreira (2019) reveals that most of the studies dedicated to the impact of DCs and performance indicate that there is a positive relationship between these variables. Hence, the present study supports the results of most studies on DCs on performance. However, the particular value of the current study lies in the fact that it analyses at the same time FBs and NFBs. Such studies have been lacking, although FBs differ from NFBs in many areas (Moreno-Menendez, and Casillas, 2021). Therefore, it is worth emphasizing that the present study's findings not only match previous research but also extend the knowledge about the relationship between DCs and performance.

The other added value of the present study is that it compares FBs and NFBs ' DCs. Given the differences in the resources of FBs and NFBs, it was assumed that their DCs would differ. Nevertheless, it was found that there are no significant differences in the DCs between these two groups of companies. The main reason for this may be related to the fact that the study was conducted in Poland. Like most firms in Poland, Polish FBs were mainly established after the transformation, and many have not yet undergone succession. Thus, the differences between FBs and NFBs in Poland may not be as apparent as those between their counterparts in developed market economies. Consequently, the DCs of FBs and NFBs in Poland may be comparable. It seems possible, as similar results from studies conducted on the Polish market have already been obtained (Bratnicka- Myśliwiec et al., 2022).

Another factor that may have influenced the result concerning the differences between the DCs of FBs and NFBs is the specific time of the study. The research was carried out during a pandemic when all enterprises exhibited increased sensitivity in observing their environment and unusual activity in adapting to changing market conditions (Cepel et al., 2020). Consequently, the DCs of all companies could be higher than in more stable surroundings, and thus, the DCs of FBs and NFBs could be more similar.



The pandemic could also influence the results regarding the moderating role of environmental dynamism in the relationship between DCs and the performance of companies. During that unusual time, the competitive landscape of all companies became completely different than in the past, as the needs of customers and other firms' stakeholders drastically changed. These market changes required unusual responses from enterprises and sometimes even abandonment of their activities. Therefore, managers' assessment of the dynamics of the environment may have been different compared to their previous pre-pandemic period assessment.

Due to the economic disruption caused by Covid-19, many FBs and NFBs companies had to introduce different innovations adjusting their firms to the new and specific expectations of their stakeholders and new formal requirements (Adam, Alarifi, 2021; Caballero-Morales, 2021; Steinerowska-Streb, Wronka-Pośpiech, 2022). Many even implemented new business models to avoid company closure (Steinerowska-Streb, Głód, 2022). Given that the environment of all firms was unusual and highly dynamic and that all firms showed increased activity in their interactions with the environment, it seems justified that environmental dynamism did not emerge as a moderator of the relationship studied.

## **6. Implications/Limitations**

The study develops the present knowledge concerning the DCs of FBs and NFBs. Therefore, its outcomes support both theory of FBs and the theory of DCs. Moreover, the research extends the understanding of how businesses operate in a challenging and dynamic environment in which there are extraordinary changes. The survey was conducted during a pandemic when many companies were forced to operate beyond their usual risk level and undertake sub-ordinary activities. Therefore, the study's results can contribute to the debate as to whether enterprises in all types of environments need DCs. Indeed, they show that, independently of the environment's dynamism, DCs are reflected in the performance of enterprises, both family-owned and non-family-owned.

In addition, our research considers the operating conditions characteristic of post-transition economies. The results of it should encourage their continuation, especially regarding the lack of differences between FBs and NFBs. As we pointed out in the introduction, most studies relating to FBs have been conducted in countries with mature market economies.

When considering the results of the present study, it is essential to note that it was conducted at a particular time, a pandemic period. Possibly, the study's results would have been different in a not-so-unusual environment. Thus, the study presented in the article should inspire further research into the role of the dynamic environment in the relationship between DCs and performance in FBs and NFBs.

The study's outcomes have practical value. Namely, they can motivate entrepreneurs to increase the DCs of their companies, as it shows that they influence firms' performance.

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