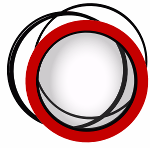

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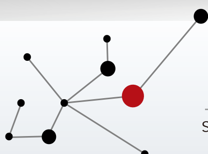

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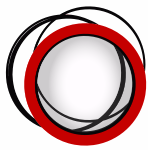

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Beyond Money: Wealth and Wellbeing of the Business Family

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Business family, Family wealth, Ownership competences, Responsible owner, Socioemotional wealth, Wellbeing.

Abstract This article offers a conceptual discussion about the relationship between wealth and wellbeing of the business family. It provides a psychological perspective on ownership that explains the effect of wealth on individual and collective dimensions relevant to business families, namely psychological ownership, socioemotional wealth, and ownership competences. The study provides an integrative framework and offers propositions that illustrate the theoretical and practical implications of the model as regards the relationship between wealth and wellbeing of the business family.

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PALABRAS CLAVE
Familia empresaria, Riqueza familiar, Competencias de propiedad, Propiedad responsable, Riqueza socioemocional, Bienestar.

Más allá del dinero: Riqueza y bienestar de la familia empresaria

Resumen Este artículo ofrece un debate conceptual sobre la relación entre riqueza y bienestar de la familia empresaria. El mismo aporta una perspectiva psicológica de la propiedad, lo que permite explicar el efecto de esta riqueza en dimensiones individuales y colectivas relevantes para las familias empresarias, a saber, la propiedad psicológica, la riqueza socioemocional y las competencias vinculadas a la propiedad. El estudio proporciona un marco integrador y ofrece proposiciones que ilustran las implicaciones teóricas y prácticas de este modelo en lo que se refiere a la relación entre riqueza y bienestar de la familia empresaria.

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1. Introduction

The connection between wealth and wellbeing is a particularly relevant topic to wealthy families, and subjective wellbeing was identified by recent research as a new way of studying the family business (Porto-Robles et al., 2022). Business families (BF) are families that own and control companies (Steier et al., 2015), and they generate wealth through a combination of resources, some of which are unique to family firms (Sirmon & Hitt, 2003). However, for those families, more fortune is not a direct predictor of more wellbeing (Carney & Nason, 2018). As prosperity increases, financial wealth becomes a more inexact predictor of wellbeing, given that individuals' overreaching goal goes behind any economic achievement (Diener & Seligman, 2004).

A general positive connection of financial wealth and income with wellbeing and happiness has been demonstrated in psychology studies (Brzozowski & Spotton Visano, 2020; Hagerty & Veenhoven, 2003; Jantsch & Veenhoven, 2019). However, this connection has a diminishing marginal utility, meaning that any extra unit of financial wealth creates less happiness than the last one. Moreover, some studies have addressed the psychological costs of the very affluent (Luthar, 2003), highlighting the dark side of material wealth (Kasser & Kanner, 2004), and showed that even inherited wealth can create suffering and psychological pathologies in the recipients (Bernhard & Labaki, 2021; Zheng, 2002). Furthermore, BF are not only concerned with making fortune in monetary forms but also with pursuing the achievement of other goals (Chrisman et al., 2003), which the literature on family business usually describes as the preservation of socioemotional wealth (SEW) (Berrone et al., 2012; Gómez-Mejía et al., 2007, 2011).

While BF pursue the creation of value aiming to a diverse set of goals that influence each other in various ways and create different forms of wealth, including financial and socioemotional (Vazquez & Rocha, 2018), the relationship between fortune and wellbeing in the BF is a rather unexplored topic.

Leveraging on the authors' experience in engaging with BF, we agree that material wealth can have both positive, although marginally diminishing, and negative effects on the wellbeing and happiness of the members of the BF (Bernhard & Labaki, 2021; Kasser & Kanner, 2004). Moreover, this article aims to explore the phenomenon to better understand the relationship of wealth and wellbeing in BF, considering the multidimensional nature of wealth in such families. To address this question, we identify the main intervening issues, integrate this conceptual body in the proposal of a framework that displays previously unexplored connections between constructs, and propose avenues for theory and practice to develop and increase the positive effects of wealth on wellbeing and happiness.

In the next section we present the key constructs identified in the literature regarding wealth and wellbeing of the BF and we propose a framework integrating those concepts. In the third section, we discuss how to manage material wealth for increasing wellbeing and happiness of the BF, and elaborate propositions that suggest lines for further research. The last section includes the concluding remarks and limitations of this study.

2. Research Design and Conceptual Framework

In order to better understand a newly emerging topic, the relationship of wealth and wellbeing in BF, our purpose is to advance a preliminary conceptualization through the combination of perspectives and insights from various fields (Snyder, 2019) to inform what we consider a relevant matter to BF and their advisors (i.e., the relationship of wealth and wellbeing in BF). Therefore, we rely on arguments through the assimilation and combination of evidence from previously developed concepts and theories (Hirschheim, 2008). Starting from the focal empirical phenomenon (the fact that more fortune is not directly a predictor of more wellbeing) we have identified some conceptual elements that have an adequate fit and complementary value for achieving a better understanding of the relationship between wealth and wellbeing in the BF through the development of a conceptual model (Jaakkola, 2020). Due to the conceptual nature of this article, we build our arguments for a conceptual model based on a variety of knowledge and literature that does not need to be comprehensive to achieve a better understanding of a specific phenomenon in a relatively narrow context such as wealth and wellbeing of the BF (Elsbach & van Knippenberg, 2020). The process for selecting the most suitable concepts included the examination of literature of the Management and Family Firm fields related to the relevant topic of wealth and wellbeing, the incorporation of insights emerged from several courses to members of BF in schools of various countries over several years (as experienced by the authors as business school professors), and the consideration of discussions with several expert academics as well as practitioners interacting with BF. This allowed us to make sure that the critical concepts selected were adequate and sufficient to provide

a more elaborated explanation of the relationship between wealth and wellbeing in the BF.

This section provides key definitions and introduces relevant selected theoretical perspectives around wealth and wellbeing of the BF. These include the expanded concept of ownership, SEW, and ownership competences, stemming from a psychological perspective.

2.1. Definitions

While there are different conceptions involved when assessing whether a business is a family firm, in this study we focus on the definition of BF (Steier et al., 2015). The concept of BF focuses more on the controlling family than the (family) business itself and involves a family that will always own one or more businesses and other financial as well as nonfinancial assets (although those businesses and assets may not be the same over time). A family that starts and controls a single (family) business with intention of transgenerational legacy may evolve over time into a BF that controls several kinds of assets, usually including major participations in businesses. Furthermore, the BF usually implies implementing actions aimed at wealth generation, diversification, and preservation.

Financial wealth is generally defined as "a large amount of money or valuable possessions that someone has" (Cambridge Dictionary, 2022). In the context of BF, valuable possessions include money and other material assets, as well as "noneconomic benefits" that cannot be measured in monetary terms, such as family harmony and many others (Chrisman et al., 2003, p. 363). Family businesses are less likely than non-family firms to pursue wealth maximization as their dominant objective (Sharma et al., 1997). This does not mean that BF are unconcerned with making money. Rather, BF are likely to have important noneconomic goals or constraints, such as maintaining family harmony or job creation for family members, ensuring they contribute substantially to family members' wellbeing (Chrisman et al., 2012).

Finally, with wellbeing we intend peoples' positive evaluations of their lives, and this includes positive emotion, engagement, satisfaction, and meaning (Seligman, 2002).

2.2. The ownership concept expanded

Ownership is essentially a relationship between one person/animal (subject) that claims another thing/person/animal (object) to be their own. This relationship can be of three kinds: occupation, possession, and property (Rudmin, 1991).

Occupation (Rudmin, 1991) refers to the real-time temporary use of the object by the subject. We can think about a seat in a public bus that is used individually by different passengers during the course of their trip. Or we can imagine a child using his mother's phone to play games in a waiting room.

In the case of possession (Rudmin, 1990), the subject does not only temporarily use the object but claims exclusivity over it. Unlike occupation, possession requires an effort to carry and/or defend the object possessed, as it could also be claimed by others. One of the first words a person utters besides "mom" and "dad" is "mine". This idea of "mine" can be seen in interactions between siblings at a very young age, as if it were imprinted in our genes. Relationships of possession emerge very early in human childhood and play a key role in building and maintaining self-identity (Furby, 1980).

Occupation and possession relationships have biological roots and are observable in animal life. A dog can occupy an object such as a ball and play with it for a while, leave it unattended later, and forget about it. A tiger may keep possession over a territory, utilizing marks for other tigers to know about its claimed land, patrolling it, and, if necessary, fighting for it. Possession puts a limit to the potentially owned object(s), and this limit is where the cost of defense is higher than the benefits extracted from what is owned. In the animal kingdom, for example, a tiger will defend an area of land up to the point where an extra square meter protected brings higher marginal benefits in potential prey than the marginal costs of energy needed to defend it.

While occupation and possession can be observed in human beings, people have perfectioned ownership through the concept of property. Property is possession sanctioned by a social regime. When the law recognizes private property, with a title or other instrument of social legitimation, it institutionalizes possession and removes the burden of carrying and/or defending the object owned. The social group and its institutions will make sure that property rights are respected.

Property, and therefore material wealth, is socially sanctioned and has to be experienced and acknowledged by the subject in order for her/him to recognize an ownership relationship with the object (Rudmin, 1991). For example, an individual whose parents have transferred to her/him the property of a portfolio of shares and interests in investment funds, but who has not been informed about it, does not experience any relationship with the owned objects. Therefore, property is "a dual creation, part attitude, part object, part in the mind, part 'real'" (Etzioni, 1991, p. 466). Thus, in order to understand the dynamics of property and wealth, it is

crucial to include their cognitive and emotional components.

2.3. Psychological ownership

Psychologically speaking, ownership has both a cognitive and an emotional component. On the one hand, ownership relationships of occupation, possession and/or property can be cognitively recognized by individuals due to various information sources, making them aware of such relationships. On the other hand, people may develop feelings of ownership, an attitude that has been referred to as psychological ownership (Pierce et al., 2003).

For example, while a child is cognitively aware that he[1] has no property right on the house where he lives with his family, he perceives it as "his home". Conversely, he may be aware that he owns a particular book; however, as he is not interested in, he may not feel this object as his. Another example could be a young adult that works in the family firm owned by his parents and has strong feelings of ownership due to his daily relationship with the company, and to the fact that he will inherit shares of the firm. Conversely, this person may be the rightful owner of a house transferred to him by his living grandparents but may not feel he is the owner of the house since it is still the home of his grandparents.

The three different ownership relationships mentioned in the previous subsection engender several different psychological aspects (Becker, 2014). While occupancy is mostly associated with the instrumental utilization of an object, it can trigger feelings of comfort and enjoyment, personal appearance, and personal history, as well as sense of belonging and relatedness. Possession is usually associated with feelings of self-efficacy and competence, self-identity and individuality, extension of the self, social control, ability of sharing, as well as memories and feelings of home (Furby, 1991). Finally, property inspires feelings of security and control, power and status, as well as ability of legacy (Rudmin & Berry, 1987).

Psychological ownership has a positive and a negative side. On the positive side, it supports the development of citizenship, cooperation, personal sacrifice, responsibility, and stewardship; on the dark side, when psychological ownership develops over-possessive characteristics, excessive materialism, inability of sharing, and feelings of overwhelming responsibility may arise (Pierce et al., 2001).

Attachment to, and psychological ownership of an object, can be much better developed when such object is visible (tangible), attractive, accessible, usable, and influenceable, receptive and hospitable, socially esteemed, as well as self-revealing (allows to learn about the self). Psychological ownership develops better when the target object provides identity, feelings of competence, and feelings of "having a place" (Pierce et al., 2009).

While several different perspectives can be used to explore the complex phenomenon of psychological ownership, some studies sustain that biology as well as social experiences play a very relevant role in shaping relationships between individuals and their property (Dittmar, 1992; Pierce et al., 2003). Offering an intra-individual perspective, Pierce, Kostova and Dirks (2003) propose that psychological ownership has its roots mainly in three individual human motives. Firstly, efficacy and effectance refer to an individual's desire to interact effectively with his environment, as well as to exert control over the environment. Secondly, self-identity reflects the dynamics associated with getting to know oneself, expressing one own's recognition and social prestige to others, and maintaining this symbolic extension of oneself over time. Finally, having a place to dwell means that individuals have a territoriality need that provides physical and psychic security, a home or place of one's own. Thus, overall, these motives explain why individuals experience feelings of ownership and, we can argue, they foster the development of psychological ownership.

Pierce, Kostova and Dirks (2003) also conceptualize that there are several routes that can engender psychological ownership, acknowledging those experiences that develop feelings that satisfy the above-mentioned motives. Control over the object of possession is a key experience that nurtures the sense of self and effectance. Think about control over a car: the access to use it makes individuals feel they own it, independently of the actual legal ownership of the vehicle. Driving it and the ability to make it perform will develop the feeling of possession via control, which in turn develops psychological ownership of the car. Knowing intimately the object of possession is an alternative route to psychological ownership, as deep knowledge inspires tight links to things. Consider teachers and their pupils: the close and continuous relationship reflects the attachment, which translates to familiarity and deep knowledge, so that they would point to students as "theirs". Further, investing themselves into the object of possession represents a relevant route to psychological ownership. Imagine the herdsmen who know the needs of the cattle they tend. Even if the animals are not their own, they

[1] In order to improve readability, only the male form is used in this document. Nevertheless, we refer to both genders equally.

feel psychological ownership towards the cattle, as they invested themselves in breeding the animals and, hence, feel responsible for them. These routes have been discussed, for example, in the organizational context to explain how employees develop psychological ownership in businesses that are not their own, as this affects their behavior in both positive and negative ways (Pierce et al., 2001).

Besides individual psychological ownership, we can distinguish collective psychological ownership, namely the collectively held sense (feeling) that a *target of ownership is collectively owned* (Pierce & Jussila, 2010). In BF, both individual and collective psychological ownership affect several aspects of the family firm (Heino et al., 2019; Rantanen, 2011) and usually create positive cognitions and feelings increasing effort and contribution to the goals and success of the family firm by family members (Narcikara, 2017) and non-family members (Bernhard & O'Driscoll, 2011; Ramos et al., 2014).

The construct of psychological ownership is very relevant to the BF (Mustafa et al., 2022) and there is evidence showing its role for stimulating initiatives that generate wealth for the business (Pittino et al., 2018). Thus, we advance that psychological ownership plays a distinct role in BF as it represents the cognitive and affective mechanisms that explain the family attachment to the business (Henssen et al., 2014) and can, thus, contribute to explain the relationship between the wealth and wellbeing perceived by its members, as BF particularly value wealth of a socioemotional nature besides its material aspect.

2.4. Socioemotional wealth

The BF owns the family firm, and the value creation process of such firm provides not only sufficient material outcomes, but also positive psychological outcomes to the owners. One of the most salient characteristics of family firms is their particular approach to value creation, as they are inclined to a variety of goals which can be harmonized (Vazquez & Rocha, 2018). With "a purpose that transcends profitability" (Chrisman et al., 2003, p. 468), a set of typical socioemotional goals of the family firm has been ascribed to this type of organization.

Goals aimed at preserving the so-called s (SEW—namely, the stock of affect-related value the owning-family has invested in the firm (Gómez-Mejía et al., 2011)—encompass the benefits that family members expect from their involvement in the business (Chrisman et al., 2012). SEW has been considered an important factor to explain family business behavior, as this set of affective endowments represents a reference point against which BF make risky decisions (Hoskisson et al., 2017; Nason et al., 2019).

SEW encompasses several dimensions, which have been framed around five main elements using the acronym FIBER: Family control and influence, Identification of family members with the firm, Binding social ties, Emotional attachment of family members, and Renewal of family bonds to the firm through dynastic succession (Berrone et al., 2012). These aspects, which are of non-economic nature, reflect the "wealth" that is most important to family businesses when the family is the priority (Basco & Rodríguez, 2011). Thus, family members who avoid profitable opportunities to raise capital (e.g., equity by non-family shareholders or IPO) in order to maintain control over the business and establish family meetings to nurture identification with the business, are examples of decisions in place to preserve SEW. Furthermore, it has been suggested that, beyond various characteristics related to the FIBER dimensions, several aspects of ownership affect the perceptions of BF regarding their SEW (Zellweger & Dehlen, 2012). Different types of measures have been used to grasp the concept of SEW and different constructs have been introduced as well (Swab et al., 2020). Debicki et al. (2016), indeed, have developed the SEW importance scale, which includes three dimensions: Family prominence, related to building and maintaining the family image in the eyes of stakeholders; Family continuity, i.e. family preservation and sustainability; and Family enrichment, which deals with the ability of family members to satisfy family needs while operating the business on a daily basis.

As ownership can create value or wealth, both financial (Foss & Klein, 2018) and socioemotional (Zellweger & Dehlen, 2012), the BF will have to achieve the necessary competences for proactively managing its wealth (financial and socioemotional) and wellbeing.

2.5. Ownership competences

Ownership competences include the specific knowledge and capabilities of current and future family business shareholders that are required to effectively enact their ownership role(s) and function(s) with the ultimate goal of successfully managing the business and contribute to the harmonious functioning of the family (Binz Astrachan et al., 2021). Different conceptualizations have been advanced to describe and discuss ownership competences, and we combine some synergic approaches that encompass individual and collective competences that contribute to effective ownership in BF. BF and their members benefit particularly from competences aimed at motivation for ownership

(purpose competence), management of ownership for business success, and management of ownership for family and individual success.
Firstly, the competence of purpose is very important to positively influence ownership relationships. The purpose of business is defined as the creation of optimized collective value (Donaldson & Walsh, 2015). The owners of the business, as one of the main stakeholders, are legitimately entitled to influence business governance and direction, and to obtain part of the value generated. In companies with family control, goals and purpose of the business are strongly influenced by the goals and purpose of the controlling family (Vazquez & Rocha, 2018). Individuals engage in the creation of wealth of different kinds, such as financial, physical, human, and social capital. Such creation arises not only from extrinsic and self-interested motivations (e.g., accumulation of financial wealth) but also from motives such as the entrepreneurial spirit, the enjoyment of discovering and creating, and the desire to serve others (Enderle, 2009). Individual meaning and purpose have been linked to wellness (Savolaine & Granello, 2002), identity, and business performance (Craig & Snook, 2014). Moreover, performance in achieving any targeted goals is enhanced when these goals are related to a purposeful end (Haradkiewicz & Elliot, 1998). The ability to identify and to work on a set of goals to accomplish, as well as the understanding of "why" those goals are valuable provide individuals with energy, direction, satisfaction, and persistence (Damon, 2009). Developing the ability of pursuing purposeful goals will increase the positive experience of ownership relationships.
Secondly, competences for the exercise of property rights strongly influence value creation at the firm level, and specific competences, such as the matching competence, governance competence, business competence, and timing competence have been recently highlighted (Binz Astrachan et al., 2021; Foss et al., 2021). The matching competence is the ability to foresee novel resource combinations that achieve a valuable purpose. This competence, related to the entrepreneurial environment, contributes to decide "what" to own, therefore defining the boundaries of family ownership. The matching skills enable a better recognition of underpriced assets and a better arrangement of assets for superior value creation, therefore achieving the development of better portfolios. The governance competence is the capacity to design and to implement the processes and structures for effective organizational decision-making. This competence, related to "how" to own, includes the governance bodies (shareholders assembly, board of directors, top executive team, etc.), incentives, rules, and other elements that enable the adequate alignment of interests, management of information asymmetries, reductions of agency costs, and others necessary for an adequate delegation of decisions by the owners. The business competence refers to the ability to understand industry-related issues, strategy, finance, and others that enable "owners to guide and hold management accountable and make sound, data-based decisions" (Binz Astrachan et al., 2021, p. 5). Finally, the timing competence refers to the ability to decide ownership entry and exit decisions, such as whether to buy underpriced or to sell overpriced assets, or as when to hold ownership during asset crises (usually pricing those assets also considering the SEW involved). In family firms, this ability is not restricted to the firm level but also includes family outcomes, as effective successions require a very good timing competence.
Thirdly, there are ownership competences specifically targeted at BF that address the influence of ownership in the success at family level and individual level (for family members). This set of competences is expected from the shareholders of a family business (or a group of businesses in the hands of the same family). The family competence is the ability to manage family dynamics and to influence the functionality of the family. This is strongly interlinked with efficacy and effectance, which permit owners to benefit from high psychological ownership (Narcikara, 2017). The self-competence relates to personal development and growth, thanks to the abilities of self-regulation and engagement in continuous self-development and education. Finally, the contextual and zeitgeist competences encompass the knowledge, skills, and capabilities to cope with challenges unique to the family business and BF.
The ownership competences for purpose, business success and family success interact with each other with positive and synergistic effects as they target the social system of the BF (which includes the individual, the family, and the business), aimed at creating transgenerational wealth (Habbershon et al., 2003).

2.6. Integrative framework of wealth and wellbeing of the BF

The identification of the key intervening mechanisms regarding wealth and wellbeing of the BF that were presented in the previous subsections, allows us to propose some relationships that compose an integrative conceptual framework (see Figure 1).
In this model, in the context of the BF, wellbeing is an outcome affected by the BF wealth,

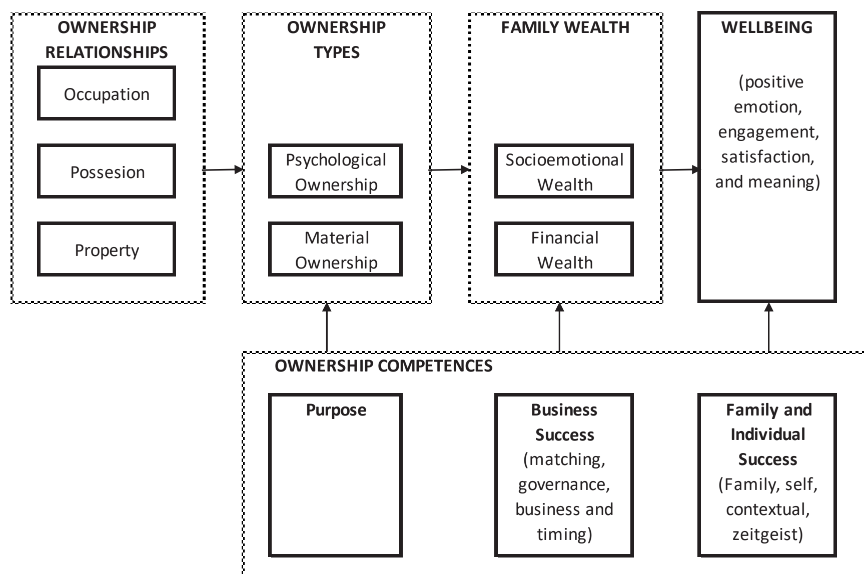
which includes money and other assets as well as socioemotional elements, and by certain ownership competences. Indeed, the wellbeing of a family member can be positively affected by material wealth as this may provide access to better nutrition, education, and healthcare (Hagerty & Veenhoven, 2003). On the other hand, material wealth may lead to easy access to disposable income that does not encourage effort or that favors materialistic behaviors (Burroughs & Rindfleisch, 2002). Furthermore, material wealth may lead to intrafamily competition for access and control of such wealth, which may generate internal family competition, negative relationship conflicts, and family division (Jayantilal et al., 2016). In that same way, SEW may also generate positive and negative effects on wellbeing. For example, the social ties provided by the BF may be a source of positive relationships to its members (Berrone et al., 2012). On the other hand, an increased orientation towards dynastic succession may originate career impositions to family members who would preferably pursue their career and calling elsewhere and may feel their wealth associated to a burden (Huang et al., 2020).

In our model, the wealth (financial and socioemotional) of the BF is affected by material and psychological components, which are generated through the ownership relationships (occupation, possession, and property), as well as by ownership competences. This allows us to see the connections of the different ownership experiences with the generation of different ownership types (material and psychological) and their effect on the wealth and wellbeing of the BF. In line with this, even experiences of occupation, such as the interaction of family members with specific assets of the BF (such as a house, summerhouse, restaurant, etc.), which are not their property, play a role in the formation of psychological ownership that will in turn influence wellbeing. For example, in the extreme, we can have the case of an in-law that is not, and maybe will never be, legal owner of any asset of the BF, but that through relationships of occupation and possession has developed the material and psychological aspects (such as belonging) that contribute to play a positive role within the BF, increasing its wellbeing (Santiago, 2011).

This model also highlights the influence of the ownership competences on the ownership types (material and psychological), types of BF wealth (financial and socioemotional), and wellbeing. The presence of competences regarding purpose, business success, as well as family and individual success, can affect the nature and degree of ownership types and wealth. For example, high matching and governance competences are usually related to increased business performance and material wealth (Foss et al., 2021). Moreover, developed purpose, family, and self-competences can contribute to mitigate affluence-related risks of the pressure to achieve and isolation from parents that can be behind substance abuse, anxiety, and depression (Luthar, 2003).

In sum, this framework allows to offer a comprehensive picture of how wellbeing is directly affected by the stock of the different types of wealth as well as by the ownership competences available. It also shows that there is an indirect influence of ownership relationships affecting material and psychological ownership that will, in turn, contribute to shape the diverse BF wealth.

Figure 1. Integrative framework of the role of ownership in the wealth-wellbeing relationship



3. Managing Financial Wealth for Increasing Wellbeing and Happiness of the Business Family

BF are not just families in business, but families that have a family-as-investor mindset and entrepreneurial-strategy methods (Habbershon & Pistrui, 2002). As the BF generates and increases material wealth, it is very important to develop ownership relationships that are beneficial for the wellbeing and happiness of family members and other important stakeholders.

We have elaborated on the concept of ownership, and linked it with psychological ownership, socioemotional wealth and ownership competences. Considering the boundary conditions of our theorizing, which focuses on the psychological underpinnings of ownership and related competences, our framework provides some avenues to develop positive (and to avoid negative) effects of wealth on wellbeing and happiness, as well as to overcome the diminishing marginal utility of financial wealth on happiness.

3.1. Recognizing goal diversity and integrating all types of wealth

It is very important to acknowledge the diverse goals and kinds of wealth relevant to the BF and each of its members. Conversations about what is intended to be achieved by the family firm, the family, and each of its members will inform all relevant individuals and increase awareness of the specific opportunities and challenges to be approached. For instance, it is acknowledged that goals are set and pursued thanks to the contribution of several individuals belonging to the family, the business, or both, and that those goals are fundamental to the success of family businesses, given their influence on strategic decisions, family dynamics, and organizational behavior (Williams et al., 2019). However, the process of setting goals is not free from issues, especially in an imminent succession event, where goal diversity is at its peak (Kotlar & De Massis, 2013). Thus, it is fundamental to recognize the diversity of goals and emphasize how this can be considered an advantage owing to the characteristics of the BF, rather than a hindrance to family functioning.

BF naturally manage their wealth for its material development and its impact on their wellbeing. However, in order to overcome the marginal diminishing effect that wealth has on wellbeing, they will have to integrate other aspects, especially those related to individual interests and expectations, and create additional psychological and socioemotional value for themselves, as well as create and distribute value to other stakeholders. In other words, family wealth needs to be pursued also as a function of individual goal pursuit, considering all involved goals, including those of non-family members, which can contribute to SEW (Kammerlander, 2022) and understanding that those goals are not required to be completely aligned. The way to minimize the marginal diminishing effect of wealth on wellbeing implies the acknowledgment and utilization of goal diversity, which needs to be viewed as a positive enriching feature of the BF.

Proposition 1. BF that recognize and manage goal diversity and various individual preferences have more ways to generate various types of wealth and therefore to increase the overall wellbeing.

3.2. Sharing the purpose of the business family and helping to develop the individual calling

The purpose competence as well as the "motivation to belong" and pro-social behavior of younger generations of BF are characteristics than can (and must) be developed to increase wellbeing from ownership. The process of sharing purpose is supported by ensuring that all members of the BF are aligned with the goals to be pursued by the BF (Kotlar & De Massis, 2013). The members of the young generations who perceive a calling for getting involved in the family firm will experience this involvement as an end in itself that provides fulfillment and enjoyment when performed, thus increasing individual happiness as well as the probability of business success (Vázquez et al., 2021). For the development of this calling, it is critical to nurture psychological ownership and, in turn, develop affective commitment of the next generation (Gimenez-Jimenez et al., 2021). Furthermore, the availability of attractive professional opportunities in the family firm creates strong incentives for the next generation to commit and to pursue involvement in entrepreneurial experiences that contribute to the organization (Vázquez et al., 2021). Finally, the family is the first institution for education and ethical development of individuals and family dialogue, behavior of senior family members, family legends, and other elements that help to "guide the beliefs and values of the next generation of family members" (Sharma & Sharma, 2011, p. 318). Pro-social and specific characteristics of ethical behavior in family firms are strongly influenced by the involvement of the owning family, the inclination to SEW, and the typical social interactions of the BF (Vazquez, 2018). Indeed, it is not uncommon to observe BF establishing formal organizations to manage their contribution to society, through philanthropic

initiatives (e.g., via foundations or family offices (Lungeanu & Ward, 2012; Rivo-López et al., 2020).

Purpose, calling, entrepreneurial opportunities, and pro-social behavior are elements that enable the creation of value from ownership beyond financial wealth, therefore avoiding the mentioned diminishing marginal returns.

Proposition 2. BF that nurture the purpose competence and the calling of the family members (especially the younger generations) can positively affect family wealth without undermining wellbeing.

3.3. Promoting routes to psychological ownership for members of the BF

While the value of financial wealth can be the same for two different individuals, developing psychological ownership can create wellbeing beyond the material ownership. For example, being a shareholder of a family firm can be a source of joy and pride to one individual, but just a source of dividends for another (Bee & Neubaum, 2014). While both individuals will receive the same material income (provided that both hold the same proportion of shares), one will obtain more psychological value (in terms of socioemotional benefits) than the other.

Therefore, it is worthwhile to consider the availability and promotion of routes to psychological ownership. Besides voting rights and participation in governance roles of the firm, there are other aspects that can provide a sense of control, knowledge and involvement. Several families offer activities to young family members in order for them to get to know the firm better. Others create spaces of participation for family members who are not directly involved in governance bodies. Many BF propose specific projects, such as the research of family history and production of a book, which engage individuals who do not enjoy or cannot play a business role (Eddleston et al., 2018).

Nurturing psychological ownership by engaging all members of the BF in initiatives that contribute to their sense of control over their job and life, as well as to their sense of self and place associated to being a member of the BF, would help reinforce the positive association between ownership and wellbeing, even at high level of ownership.

Proposition 3. BF that nurture psychological ownership in BF members can positively affect family wealth without undermining wellbeing.

3.4. Developing ownership competences

In order for the BF to achieve adequate wealth management and wellbeing for all family members involved across generations, roles and responsibilities, the necessary competences have to be developed. These competences include not only those related to business success, but also those directed at the development of purpose and also family success.

On the one hand, members who already have an active or direct experience with business operations might develop psychological ownership more easily and pursue SEW as their main goal. Their participation in the business activities might, thus, guide them to develop appropriate and significant ownership competences. On the other hand, members of the BF who have never experienced working in the family business(es) might have more challenges in understanding what their role and responsibilities are within the family and the business. Assuming these individuals will become shareholders of the business(es), it is relevant to understand how to develop ownership competences, which can make the difference in the effectiveness of the future business(es) owners' decision-making.

Proposition 4a. BF that nurture the development of ownership competences in family members can positively affect the development of different ownership types and the creation of various types of family wealth, that influence wellbeing.

There is research showing that next-generation members in particular might be put under pressure by incumbents/parents regarding their future involvement in the business (Grote, 2003), sometimes also influenced by gendered norms (Byrne et al., 2019). Given the potential different goals, as mentioned above, first of all, the development of ownership competences necessarily depends on the freedom of next-generation members to choose their progressive involvement in the business, deciding the content and the extent of their involvement. This would help individuals to develop the matching competence, i.e., to decide what to own and take responsibility over that. Freedom of choice, in turn, stimulates learning and exploration, both fundamental for next-generation members to find out whether they can increase their wellbeing and happiness from the wealth derived from owning the family's assets. Experimenting with family resources, e.g., starting up a new venture, accompanied by the luxury to fail in this venturing activity, will support members of the BF to identify areas of interest, to stimulate purposeful motivation, and then to develop ownership competences, especially business competence (Corbetta & Amore, 2014).

There are further opportunities to engage more actively with the activities of the BF and to develop all competences for the effective exercise of ownership, thus covering the distance between passive and active family members with respect to the business. Firstly, to offer internship opportunities within the business and/or family formal bodies, if existent, such as family office, family foundation, or family council (Schickinger et al., 2021; Van der Heyden et al., 2005). This can also help develop governance competences above all others. Secondly, to appoint a formal mentor that can help new family members learn how the BF functions and the business works (Distelberg & Schwarz, 2015). This can be an important mechanism to develop and disclose matching and timing competences, enabling the succession planning at the right time (Michel & Kammerlander, 2015; Salvato & Corbetta, 2013). Finally, more on an informal basis, arranging family events, such as a gathering at Christmas, and managing family-level communications, e.g., a family or family office app might help develop family competences (Bloemen-Bekx et al., 2021).

Proposition 4b*. BF that nurture the development of ownership competences in the family members can positively affect family wealth without undermining wellbeing.*

3.5. Early development of the young generations

Grooming and cultivating an BF, thus creating the family-as-investor mindset, and developing entrepreneurial strategies (Habbershon & Pistrui, 2002) requires parents to transfer information, knowledge, values, and practices that spill from the family over the business to their children. We highlight four dedicated mechanisms that can warrant ownership translates into wellbeing for the members of BF.

On the one hand, parents need to provide meaning as regards ownership to their children, instilling into the future generations the motivations to embrace the entrepreneurial mindset that can engender their willingness to take over the firm and manage it (Hammond et al., 2016; Jaskiewicz et al., 2015). On the other hand, at the same time, families need to understand and manage expectations of next generation members. It is fundamental not to add too much pressure on young family members and enable them to make a passionate, free choice, if they decide to join the family business, rather than embrace an entrepreneurial career on their own, or get a job elsewhere (Baù et al., 2020). In any case, it is important to groom children as responsible and competent owners, as they may inherit shares of the business (though this depends on the governance system adopted by the family to manage the business over time).

Proposition 5*. BF that develop ownership competences and psychological ownership early in family members (while allowing independent decisions) have more chances to positively affect family wealth without undermining wellbeing.*

4. Conclusions

The diminishing marginal utility of the positive effect of wealth and income on wellbeing and happiness, as well as the dark side of financial wealth, are challenging facts particularly relevant to BF. The family business field has elaborated on concepts such as psychological ownership, SEW, and ownership competences that allow the identification of strategies for those families who intend to overcome the challenges of wealth on the wellbeing of its members.

We contribute to literature of the family business field through the integration of existent knowledge that allow a better understanding regarding the relationship of wealth and wellbeing in BF. Furthermore, we provide propositions that can be empirically tested to increase knowledge on the relationship of wealth and wellbeing in the BF. The empirical examination of those propositions should include exploring the different conditions in which they would be more likely to be observed. Furthermore, this inquiry could also consider the BF in relation to sustainable development goals, such as the specific goal of ensuring healthy lives and promoting wellbeing for all at all ages included in the targets of sustainable development of the World Health Organization.

Besides academia, our propositions are also relevant for members of BF and for practitioners that support those families. This is because we propose that recognizing goal diversity, integrating all sources of wealth, sharing the purpose of the FB, helping to develop the individual calling, promoting routes to psychological ownership, developing ownership competences, and working early with the young generations are all avenues for developing positive (and avoiding negative) effects of wealth on wellbeing and happiness, and for overcoming the diminishing marginal utility of financial wealth on wellbeing. Moreover, all the mentioned strategies, linked to the inclination toward pro-social behaviors of the BF, can increase its members' wellbeing not only at individual level, but also at group and community/organizational level. This is because the proposed strategies integrate motivations for ownership, individual, family and business success of the BF, which provides the alignment needed for the value creation and distribution

that satisfies results for multiple stakeholders (owners, environment, society, etc.). This approach implies that wealth and wellbeing captured by the BF can be synergic to the collective distribution of wealth and wellbeing.
The integrative framework proposed in this study must be taken cautiously, considering that the discussion of types of ownership and wealth is derived from a psychological perspective. The assumption that the emotional and affective endowments associated with the control of the family over the business activities (namely, SEW) is directly linked with a bundle of material and psychological ownership can be challenged in future research. Stemming from other perspectives, e.g., building on the literature on sociological, legal and anthropological meaning of ownership, the ownership relationship (occupation, possession and property) might provide additional nuances to the complex nature of ownership, which can further contribute to explain the relationship between wealth and wellbeing. We hope this conceptual piece opens us the avenue for further investigation on the role of ownership in understanding what makes BF, their family members, and their stakeholders happy and satisfied.

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Speed of Retrenchment Strategies of Family Firms in Times of Crisis

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Abstract Family businesses face difficult situations throughout their lives, with declining results, which they must be able to overcome if they want to maintain themselves in the long term. At this time, not only the decisions that are made are important, but also the speed with which they are made. The study of speed, both in cases of success and failure, has been scarcely investigated in the field of family businesses. This paper analyzes how fast do family businesses react to a decline in their financial performance. We study the differences between family and non-family businesses in relation to closure and recovery speed, and the role of firm age and size as contingent factors. The empirical research analyzes panel data comprising more than 23,000 declining Spanish firms, over an eleven-year period (2006-2016), including prior financial crisis (2008-2014). Our findings show that family businesses will close earlier than non-family businesses without significant difference between family and non-family businesses recovery speed. These results open new doors to research on the temporality of decision-making and its influence on the results of family businesses.

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PALABRAS CLAVE
Empresa familiar, SEW, estrategias de reestructuración, plazo, recuperación, fracaso

Velocidad de las estrategias de reestructuración de empresas familiares en tiempos de crisis

Resumen Las empresas familiares se enfrentan a lo largo de su vida a situaciones difíciles, con resultados en declive y que deben ser capaces de superar si desean mantenerse a largo plazo. En estos momentos no sólo son importantes las decisiones que se adoptan sino también la velocidad con las que se toman. El estudio de la velocidad, tanto en casos de éxito como de fracaso, ha sido escasamente investigado en el ámbito de las empresas familiares. Este artículo analiza qué tan rápido reaccionan las empresas familiares ante una caída en su desempeño financiero. Estudiamos las diferencias entre empresas familiares y no familiares en relación con el cierre y la velocidad de recuperación. La investigación empírica analiza datos de panel que comprenden más de 23.000 empresas españolas en declive, durante un período de once años (2006-2016), que incluye la anterior crisis financiera (2008-2014). Nuestros hallazgos muestran que las empresas familiares cerrarán antes que las empresas no familiares sin una diferencia significativa entre la velocidad de recuperación de las empresas familiares y no familiares. Estos resultados abren nuevas puertas a la investigación sobre la temporalidad de la toma de decisiones y su influencia a sobre los resultados de las empresas familiares.

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1. Introduction

The financial and economic crisis of the last times has challenged businesses the world over. During this period, many firms experienced declining performance; some have survived while others failed, but all of them have had to react to environmental adversity (Mellahi & Wilkinson, 2004; Williams et al., 2017). There is a long-established tradition of turnaround literature in the organizational field (Hambrick & D'Aveni, 1988; Pearce & Robbins, 1993; Robbins & Pearce, 1992; Trahms et al., 2013) and this research question is now gaining importance in the organizational literature (Josefy et al., 2017; Suárez & Utterback, 1995).

This context is especially relevant for investigating the potential differences in behavior between family and non-family businesses (Alonso-Dos-Santos & Llanos-Contreras, 2019; King et al., 2022). If there is something that identifies and personalizes family businesses of those that are not, it is the existence of a kind of complementary to economic wealth: socio-emotional wealth (socioemotional wealth or SEW) (Gómez-Mejía et al., 2007; Gómez-Mejía & Herrero, 2023; Swab et al., 2020). This is mainly due to the existence of a corporate structure in which the separation between family and company is often confused. The emotional level of bonding of family owners with respect to non-family owners differentiates so much that it becomes a hallmark of this type of business with respect to the rest (Laffranchini et al., 2020, 2022). SEW can be understood as the set of non-financial benefits linked especially to the emotional well-being of family business members, and that conditions both their behavior and the company's decision-making based on different objectives—economic and non-economic (Belling et al., 2022; Gómez-Mejía et al., 2007)—that demonstrate their distinct time orientation, showing that family businesses have a greater long-term orientation (Lumpkin & Brigham, 2011; Lumpkin et al., 2010), and alternative governance systems (a relationship of agency rather than stewardship between the agent and principals).

However, we still know little about how family businesses react to survive long-term through periods of crisis, that is, how family businesses react to declining performance, turnaround strategy (Cater & Schwab, 2008), failure (Revilla et al., 2016) and exit (DeTienne & Chirico, 2013; King et al., 2022; Kotlar et al., 2014). We know that family businesses try to preserve their SEW, avoiding exit by lowering their performance threshold (DeTienne & Chirico, 2013). Casillas et al. (2019) have shown that family businesses are able to take radical retrenchment strategies in the face of declining performance, particularly when their survival is threatened. Nevertheless, while decline, retrenchment and recovery are essentially process concepts, most papers have adopted a cross-sectional perspective, with a few exceptions (Revilla et al., 2016). Recent authors have been keen to adopt a dynamic perspective for turnaround strategy research (Barbero et al., 2017, 2020; King et al., 2022).

We know how underperforming family firms react in order to improve their outcomes, but we still do not fully understand the pacing of their behavior during these processes (Agustí et al., 2021; Laffranchini et al., 2022). We believe that this knowledge can help to understand the impact of the family character on strategic decisions taken by a family business and especially from the perspective of the SEW (Belling et al., 2022; Hernández-Linares et al., 2019; Laffranchini et al., 2020). We therefore propose the following research question: What is the probability of a quick response from family businesses to a decrease in financial performance? A decline has two final consequences: The first has a "sad ending", that is, the firm does not recover and ultimately ceases its commercial activities and exits (closure); while the second represents the "happy ending", where the firm is able to restore its financial performance to its former level, prior to decline (recovery). We want to know what is the difference between the two processes (King et al., 2022).

The purpose of this paper is twofold. Firstly, we want to identify the differences between family and non-family businesses in relation to closure speed and recovery speed, and secondly, we seek to understand the role of two contingent factors that may influence the relationship described: firm age and firm size. The consideration of 'time' as a variable introduces a factor usually forgotten in the literature, but of great importance when it comes to understanding the success or failure of restructuring strategies. Faced with declining results, it is not only important to make the right decisions, but also the speed with which these decisions are put into action (Barbero et al., 2020). Likewise, the work contributes to the literature on the heterogeneity of family businesses, identifying differences based on size (Schmitt & Raisch, 2013; Sciascia et al., 2012) and age (DeTienne & Chirico, 2013; Moreno-Menéndez & Casillas, 2021) of family businesses in relation to the Effects of speed on the final outcome—success/failure—of restructuring decisions.

The next pages of the paper are structured as follows. In the following section (section 2), the theoretical background is presented, followed by section 3, that includes the hypotheses development. Section 4 describes the empirical methodology, detailing the sample selection,

measures of the variables used in the empirical research, and the statistical techniques used. The main results are presented in section 5, followed by a discussion and conclusion in the final section of the paper (section 6).

2. Background

2.1. Decline and turnaround strategy

The business environment has undergone radical changes in recent decades in terms of technological and social upheaval, market globalization and so on. Those changes have generated opportunities for some companies, but proved a dramatic challenge to the survival of many firms all around the world. As a result, the study of firm decline is gaining significance. Firm decline is a process that occurs when the performance of an organization deteriorates or when its resources become eroded over a period of time (Hambrick & D'Aveni, 1988; Weitzel & Jonsson, 1989). Previous literature differentiates between the internal and external causes of a firm's decline (Argenti, 1976; Cameron et al., 1988). In a period of decling performance, a business will usually take decisions to reverse the situation, developing so-called turnaround strategies (Pearce & Robbins, 1993; Robbins & Pearce, 1992) to recover performance, which involve taking a number of actions in response to a situation of decline.

The prior literature identifies two main phases in a turnaround strategy (Pearce & Robbins, 1993, 1994a, 1994b): (1) the retrenchment phase; and (2) the recovery phase. The first stage involves the adoption of measures oriented to the control of cash-flow by reducing operational expenditure and divestment processes (Hambrick & Schecter, 1983; Robbins & Pearce, 1992), in tandem with decisions to replace members of the corporate governance bodies (CEO, board of directors, TMT). The recovery phase requires a reorientation of the firm to enable a new phase of improved long-term performance. During this stage the firm adjusts its area of operations to align itself better to the environment. The actions carried out during this stage are strategic in nature (Trahms et al., 2013) because the company's aim is to reposition itself in order to grow and recover profitability (Barker & Duhaime, 1997; Schmitt & Raisch, 2013).

However, some authors argue that both of these measures —retrenchment and recovery— are not always necessary (Barker & Mone, 1994), or that they can be implemented simultaneously (Schmitt & Raisch, 2013). Within this area of research, a new stream is investigating the role of "time" in the turnaround strategy, given that (a) it is a process in itself, and (b) timing is important because the point at which the turnaround develops, and its pacing will affect the final outcome (Arogyaswamy et al., 1995; Hambrick, 1985; Slatter, 1984). For example, Arogyaswamy et al. (1995) posit that timing and speed are important during retrenchment —the initial stage of a turnaround— and will affect the firm's survival.

2.2. Family firms and turnaround strategy

Turnaround strategy is of particular interest in the case of family business (Gimeno et al., 1997; Hernández-Linares & Arias-Abelaira, 2022; Revilla et al., 2016), where decision-making processes are influenced by SEW (Gómez-Mejía et al., 2007; Laffranchini et al., 2020; Swab et al., 2020). Berrone et al. (2012) define SEW as the stock of affect-related value that a family derives from its controlling position in a company, in accordance with Gómez-Mejía et al. (2007) who define SEW as the non-financial aspects of the firm that meet the family's affective needs, including family-business overlap, identity, the capacity to exercise family influence, perpetuation of the family dynasty, etc. (p. 106). The SEW perspective assumes that family businesses view the avoidance of potential loss as a priority, accepting a lower performance threshold than non-family businesses, and argues that these companies are able to survive at lower performance levels than non-family companies (DeTienne & Chirico, 2013; Gimeno et al., 1997). Family businesses interpret declining performance in a different way to non-family businesses (Belling et al., 2022; Laffranchini et al., 2020). Firstly, family involvement on boards and the potential role of a family member as CEO is based on a stewarding relationship that exists between directors and shareholders, rather than an agency relationship (Gómez-Mejía et al., 2001). The stewardship role of family directors involves the responsibility to assure the long-term continuity of the firm, above any higher short-term performance (Lumpkin & Brigham, 2011). This role, however, has a contradictory effect on how family businesses react to declining performance. On one hand, this may be down to the family directors' misperception of their own decisions, where they assume that the causes of declining outcomes are mainly external (Shepherd & Haynie, 2011), and there is a reluctance to take difficult decisions that may damage the internal and external social capital of the family business (Miller et al., 2008). On the other hand, family involvement allows family-run companies to take quicker and more intensive decisions to cut expenditure and implement other retrenchment measures over a short period of time (Kammerlander,

2016; Zellweger et al., 2012). This is due to the highly centralized structure of family-managed businesses, compared to the more formalized management structure of non-family companies that are in evidence (Nordqvist & Melin, 2010), particularly when survival is threatened (Casillas et al., 2019).

3. Hypotheses Development

3.1. Closure speed and family business

One of the main differences between family and non-family businesses is the priority of long-term survival over short-term performance (King et al., 2022; Revilla et al., 2016). Family firms demonstrate a long-term orientation (Lumpkin & Brigham, 2011; Lumpkin et al., 2010) in their desire to develop and nurture a legacy to pass on to subsequent generations (Zellweger & Astrachan, 2008; DeTienne & Chirico, 2013). Exit is the last option for a family business, even in a period of poor performance. Threshold theory suggests that exit strategy depends on a certain level for the economic and organizational threshold of performance; "the level of performance below which the dominant organizational constituents will act to dissolve the organization" (Gimeno et al., 1997, p. 750). DeTienne and Chirico (2013) argue that a higher level of SEW drives down the performance threshold in family businesses.

Family businesses tend not to leave a business in difficult economic times (decline), not only because it is necessarily a "good business", but because there is a controlling family that is willing to make personal sacrifices (Haynes et al., 1999). This argument supports one of the dimensions of the SEW model, specifically the one that refers to the family identification of its members with the Company, to the point that it is sometimes difficult to separate the identity of both (Laffranchini et al., 2020; Micelotta & Raynard, 2011).

Chirico et al. (2018) identify a series of factors in family businesses that help to understand the strengthening of family commitment and that in the case of family businesses with low profitability supposes a drag to carry out change. From this it can be deduced that factors such as emotional property, the sense of responsibility, investment in capital, the time since the founder created the business, and individualism / collectivism will not prevent a business closure (since they do not facilitate the taking of decisions to reverse the situation) and will only delay it. This argument has also recently been reinforced by Revilla et al. (2016), who identify a lower ratio of failure among family businesses due to the higher level of SEW and financial costs for family members when they are involved in the firm's management or serve on the board of directors. These results are consistent with previous research that demonstrates a higher resilience among family businesses (Acquaah et al., 2011; Brewton et al., 2010; Schulze & Bövers, 2022). From the process perspective, family businesses try to avoid failure, not only by taking retrenchment decisions but also by taking measures such as delaying dividend distribution or lowering family members' wages in order to ensure survival.

Other researchers state that generally in the case of family businesses with a business portfolio and when it is time to part with it (sell or liquidate), they prefer to "turn it off" (leave them on stand-by, without selling the assets and prepared for a possible activation later) to be sold to a third party in spite of the succulent income that this sale could generate that could be destined to other destinations. They claim that from the perspective of SEW, family businesses do not prioritize profit maximization. Therefore, the "off" instead of the sale of satellite companies in a situation of deterioration in performance may be conditioned by identity issues that impact them on greater emotional benefits. Therefore, these measures could be interpreted as a slowdown of a possible final closure of some lines of the family business. We argue that family businesses delay potential failure and closure for as long as possible. We therefore expect that, at times of declining performance, family businesses take longer to close than non-family firms, and we propose the following hypothesis:

> *Hypothesis 1. The probability that family businesses in decline close earlier is lower than in the case of non-family businesses.*

Family businesses do not constitute a homogeneous population. Several characteristics influence how family firms behave in relation to strategic decisions, such as firm age and firm size. Firm age is associated with the generational level, and the existing literature offers contradictory views. On one hand several authors argue that SEW decreases as the family business ages. For example, Ensley and Pearson (2005) state that greater dispersion between family members, typical of multi-generational firms, would further dilute "the strong central beliefs and ties of a more closely knit social group" (p. 269). Corbetta and Salvato (2012) refer to "generational drift"; the gradual evaporation of the family owners' emotional attachment to the business across generations (DeTienne & Chirico, 2013). These ideas, together with the increased professionalization of multi-generational companies (Gersick et al., 1997), would increase

the dilution of SEW across generations (Gómez-Mejía et al., 2007), reducing the socio-emotional barriers to pursuing potential exit strategies when older companies are faced with declining performance (DeTienne & Chirico, 2013; Doughty & Hill, 2000).

On the other hand, different research argues that older firms value their accumulated legacy (Burton & Beckman, 2007; Miller & Le Breton-Miller, 2005), which has developed over time. In older, multi-generational family firms, family leaders perceive themselves as a bridge or link between generations. As in a relay race, their mission is to pass on an improved legacy from their predecessor to their successors. History and culture become an intangible asset of the family firm that may strengthen as the firm ages (Price et al., 2000). Similarly, as firm age rises, social capital and intangible resources also tend to be more developed than in younger firms. For example, long-established family firms benefit from a higher family reputation and social image (Deephouse & Jaskiewicz, 2013; Miller et al., 2008).

Social capital also needs time to develop in family businesses (Arregle et al., 2007). We argue that older, multi-generational family businesses have a greater incentive not to close than younger, non-family enterprises. Despite arguments to the contrary, entrepreneurial non-family businesses have developed fewer internal and external links with stakeholders (partners, employees, customers, owners, and so on) and have not yet generated a robust culture and legacy. Conversely, older family businesses have not only established social capital, reputation, and other intangible assets that make it worthwhile avoiding a potential exit, but have also engendered specifically family-related motivations that endure over time, maintaining the legacy that will be passed on to the next generation, preserving SEW (Arregle et al., 2007; Gómez-Mejía et al., 2007; Miller et al., 2008). For this reason we propose the following hypothesis:

> *Hypothesis 1a. The age of the company will have a negative effect on the probability of early closing of the company (time between decline and exit).*

Different arguments can accelerate or delay the potential closure of family businesses experiencing a decline in performance. Firm size is highly correlated to the availability of resources and capabilities. Smaller businesses suffer from a lack of resources, which can have dramatic consequences for both family and non-family businesses when performance is declining (Mellahi & Wilkinson, 2004; Thornhill & Amit, 2003), due to their "liability of smallness" (Aldrich & Auster, 1986; Stinchcombe, 1965) —their limited access to resources such as specific knowledge, human capital, networks, customer relationships, and financing (DeTienne, 2010). The lack of resources experienced by small firms tends to be higher among family SMEs. Prior research underlines this lack of resources in family firms (Sciascia et al., 2012), mainly in relation to financial and managerial resources (Graves & Shan, 2014), assuming that family firms have less access to the best human and managerial capabilities (Barbero et al., 2012) and that there is an unwillingness to accept non-family expertise.

Prior research has also demonstrated that smaller firms show less ability to implement changes (Schmitt & Raisch, 2013). Consequently, they are less able to develop turnaround strategies that make it possible to reverse negative performance and avoid failure and exit. We argue that the greater availability of resources and capabilities enjoyed by larger family businesses provides a buffer, enabling them to undertake retrenchment and recovery measures in an attempt to reverse declining performance, extending the time until failure (lower closure speed), when the firm finally ends with closure. If, despite the measures taken, the company fails to reverse the situation, it will be subject to bankruptcy and closure. Often some large companies postpone the closure of the company (from the declining performance) through the reduction of activity; other companies try to generate cash through the sale of the acquired assets while other entities try to get out of lines with reduced profit margin and liquidating profitable pore strategic units (Miller & Friesen, 1984). For this reason, we propose the following hypothesis:

> *Hypothesis 1b. The size of the company will have a negative effect on the probability of early closing of the company (time between decline and exit).*

3.2. Recovery speed and family business

Our previous hypotheses refer to a "sad ending" for declining firms; we hypothesize about the timing of a firm's closure from a situation of declining performance. However, not all businesses in decline are destined for closure or bankruptcy. Thanks to turnaround strategies, many firms are able to reverse the fall in their outcomes, to survive and regain a positive financial performance. For that reason, we now hypothesize about the recovery speed, rather than the closure speed, in other words, the "happy ending" scenario.

In this case, we propose five main reasons for

a family business' ability to recover sooner than a non-family business. Firstly, SEW implies that the declining performance stage has more severe consequences for the family controlling the business than for non-family shareholders, directors or managers in non-family companies. As stated above, declining performance erodes the firm's reputation (Deephouse & Jaskiewicz, 2013) and has a negative impact on its social connections with external agents (partners, customers, suppliers, etc.) and internal stakeholders (shareholders, employees, etc.). In family-controlled companies (Miller et al., 2008), the negative consequence of poor performance is transferred to the family, also damaging the family system, relations between family members, and the family's reputation. Secondly, directors and managers who are members of the controlling family suffer higher exit costs than non-family ones. Family members adopting the role of stewards have a greater involvement in running the company, as they are responsible for driving the firm's recovery and survival (Alonso-Dos-Santos & Llanos-Contreras, 2019; Eddleston et al., 2012). Every day that passes with negative outcomes erodes the stewardship role and trust of family shareholders in a family member who is active in the firm's management. Thirdly, due to the higher exit costs for family leaders, they will be the first to show an interest in taking retrenchment and recovery measures to reverse a situation of poor performance (Laffranchini et al., 2022). In fourth place, the managerial structure and style of family business make it easier to implement a turnaround strategy, thanks to the more centralized, informal structure and clearer family leadership (Hernández-Linares & Arias-Abelaira, 2022; Nordqvist & Melin, 2010). All of this leads us to hypothesize:

Hypothesis 2. The probability that declining family businesses will recover earlier is greater than with respect to non-family businesses

As with closure speed, we expect that firm age will also affect the probability of a rapid or late recovery of family businesses. Family leaders of multi-generational family firms, which usually have a more dispersed ownership structure, experience greater demands from passive family members to solve the negative situation and recover the firm's performance, profitability, and potential dividends (Lansberg, 1999; Schulze et al., 2001). However, these demands may negatively affect the stewarding relationship of the family members involved in the business and the passive family members, leading to potential conflicts. The more complex ownership structure of older, multi-generational firms may create further problems if they adopt rapid turnaround measures in order to protect SEW, especially when this is linked to their external and internal social capital (Miller et al., 2008). Older family firms accumulate and protect the history on which the family's business reputation, culture and values are built (Astrachan et al., 2002), meaning that they avoid less popular retrenchment measures, which delays recovery.

Faced with a situation of decline, where measures are being proposed to get out of it, they may have a marked conservative character or, on the contrary, risky. The riskiest strategies (Sutton & D´Aunno, 1989) can help the recovery of the company (along with the most prudent) through measures such as innovation and structural modernization. Zahra (2005) indicates that those older family businesses have a lower level of innovation compared to younger ones, which can delay the recovery of the company. Also, this author indicates that the introduction into new markets and the creation of new business lines can be slowed by the permanence in the business of old managers who are characterized with a more prudent sense and less prone to take risks. For all these reasons, we propose that age has a different effect when we are facing a closure or a recovery. While the age of the company provides a cushion of resources that allows it to endure poor results longer (closing later), it also implies a wide set of routines that prevent it from adopting rapid changes, thus delaying a possible recovery. As a consequence, we propose the following hypothesis:

Hypothesis 2a. The age of the company will have a negative effect on the probability of an early recovery of the company (time between decline and recovery).

Finally, we expect that firm size has a moderation effect on the relationship between the family nature of a business and recovery speed at a time of declining performance. Small family business are entities with a great capacity to adapt to the surrounding environment, especially when large and sudden changes occur. However, although a priori can be a great advantage in declining scenarios, small family businesses frequently due to lack of resources and qualified personnel do not anticipate these environments with the consequent damage it generates (Alonso-Dos-Santos & Llanos-Contreras, 2019). Therefore, access to resources available to larger companies may allow a faster decrease in a decline (Agustí et al., 2021).

As mentioned above, firm size is linked to the firm's available stock of resources and

capabilities (Penrose, 1959). As Josefy et al. (2017, p. 779) state, firm size has emerged as one of the strongest antecedents of survival outcomes. In the case of family business, their stock is combined with family-related resources (Sirmon & Hitt, 2003) that make it possible to hire external, professional and non-family managers and directors, improving human and social capital, as well as other, such as financial, resources (Agustí et al., 2021; Brewton et al., 2010). Larger family firms will be able to take quick turnaround decisions, mobilizing a wider set of resources and capabilities in order to achieve rapid performance recovery. In light of these arguments, our final hypothesis is the following:

Hypothesis 2b. The size of the company will have a positive effect on the probability of early recovery of the family company (time between decline and recovery).

4. Methodology

4.1. Sample

This research is based on a sample of declining family and non-family small and medium-sized enterprises in Spain during the period 2006-2016. We collected the information from the SABI database (Iberian Balance-Sheet Analysis System; Bureau van Dijk, 2015), which includes economic, financial and demographic information of nearly all Spanish companies (rather than individuals) that are legally obliged to file their annual reports with the Mercantile Registry Offices (more than 1 million firms). In order to reduce business heterogeneity, we focused on small and medium-sized firms (SMEs), defined as non-listed private firms with fewer than 250 employees (Naldi et al., 2007; Stockmans et al., 2010) because SMEs are the most common type in family businesses in Spain. We also excluded firms that had been founded up to and including the 10 years prior to the study period, to exclude entrepreneurial ventures. We consider consolidated companies with some experience in the market to assess how the SEW affects the company's behavior in the face of a decline.

The study only considers firms in decline. Turnaround literature tends to consider a company to be in decline when it meets two conditions (Ndofor et al., 2013): (1) the company experiences a drop in operational profitability (typically ROA, or a similar measure) over two consecutive years (Barbero et al., 2017; Trahms et al., 2013); and (2) a negative ROA in the second year of decline (Barker & Duhaime, 1997). We obtained information from 2006 to 2016. The year 2008 is considered to be when the economic crisis began (finishing in 2014), and 2016 was the last year with available information for the firms' financial statements. Within this eleven-year period, we identified a total of 213,301 observations (firm-year) relating to declining SMEs.

4.2. Statistical methodology

Our research requires a longitudinal perspective, since the data can be described as survival data. We used the Cox proportional hazards model to test the hypotheses. This method is suitable for measuring the speed of a variable, having been applied in different contexts relating to 'speed measurement': the speed of an international response between competing firms (Yu & Cannella, 2007); the speed of the internationalization process (Casillas & Moreno-Menéndez, 2014; Fuenteslaz et al., 2002; Nachum & Song, 2011); and so on. The Cox proportional hazards model has some advantages over conventional regression models, such as its capacity to include events at different moments in time; data normality does not have to be assumed; and its suitability for data with a temporal bias. This method attempts to explain the probability that an event (failure/recovery) will occur as a function of a set of explanatory variables through the following expression:

$$h(t) = h_0(t) \exp(\beta_1 x_1 + \beta_2 x_2 + \dots + \beta_k x_k)$$

where, $h_0(t)$ is the baseline hazard function, and β are the regression parameters. The model is estimated through the maximization of the partial likelihood function (Cox, 1975). In this case the model fixes the focal year as the year in which the firm suffers a decline in its performance. From that year, the Cox model estimates the probability of firm failure or recovery in the following years. We estimated the Cox proportional hazard model with multiple-record data and multiple events, to reduce problems of endogeneity.

4.3. Variables

4.3.1. Dependent variables

We have used two different dependent variables to investigate the two sets of hypotheses. The first is closure speed. This is measured as the time that elapses between the year of decline and the year of failure (cessation its regular activity). The cessation of the activity may be the consequence of a business bankruptcy, when the strategies adopted have not taken effect. Failure includes different situations, such as bankruptcy, closure, and so on, that indicate that the firm has ceased its regular activity. The probability of closing

speed is measured by the time that elapses since it enters decline and its activity ceases. Each year it is assigned a value: 0 if it survives and 1 if its activity ceases. The second dependent variable is recovery speed. This variable has been measured as the difference between the year of recovery and the year of decline. We consider, following Dawley, Hoffman, and Lamont (2002) and Barker and Duhaime (1997), that firm recovery occurs when the business is able to reach, as a minimum, the same positive ROA as in the year prior to the process of decline. As in the previous variable, given the methodology used, we have employed a dummy variable for each firm-year, assigning the value 1 if the firm recovers and 0 if it does not.

4.3.2. Independent and moderator variables

Family nature: Due to the diversity of family business definitions and in order to categorize a company as a family business or non-family business, we followed the methodology developed by Casillas et al. (2015) which is similar to that used in prior investigations (Franks et al., 2012; Pindado & Requejo, 2015).

This classification is based on the ownership structure and family members' participation on the board of directors. Specifically, we differentiate between (a) firms with a concentrated ownership structure (a shareholder controls more than 50.01% of the ownership), where a family company is considered to be one in which family shareholders have a high controlling ownership (50.01%) or where shareholder-directors' holding is above 50.01%; and (b) firms with a dispersed ownership structure (no shareholder controls more than 50.01%), when a family company is considered to be one in which an individual has a shareholding of 5% or a family has a shareholding of 20%. In this case, we require family-owners to show a direct involvement on the board in order for it to be considered as a family firm.

Two further moderator variables have been included in our estimations: Firm age has been measured by the logarithm of the year previous to growth (Log Age i), previously standardized to be included as a moderator variable; and Firm size, measured as the logarithm of the number of employees in each year, previously standardized for its moderation effect (Log Size i).

The reason for choosing these two moderating variables is due to their impact on strategic decision making in family businesses. The age and size of the family business are two of the variables that have the most impact on turnaround strategies in the face of a decline in business performance. The age of the company influences the accumulated experience to face a decline, in the adequate management of resources and capacities, flexibility and elasticity in the face of complicated situations and also in the evolution of the SEW over the years (internal relations, external, risk, generational transmission, etc.). On the other hand, size affects the availability and access to financial resources, the professionalization of the company, the maintenance or reduction of the number of workers, the taking of risky or conservative decisions and ultimately the maintenance of the SEW.

4.3.3. Control variables

Our models include five additional variables. The first is the Legal form of the companies, differentiating between the two main types of societies in Spain: (a) public limited company; and (b) private limited company, measured through a dummy variable (value 0 for Ltd). The legal form influences ownership structure and how owners are connected, which may potentially affect exit decisions (Harhoff et al., 1998), and is the primary reference point for performance (Kotlar et al., 2014). We also consider four financial variables as controls, given their potential influence on turnaround strategies: (1) ROA_i as a measure of performance for each year; (2) ΔROA_i, as the difference between ROA_i and ROA_{i-1}, in order to consider performance in two consecutive years: it is positive if the firm is improving its outcomes, and negative if these are dropping; (3) Leverage, taken to be the ratio of long-term debt to total assets (Lim et al., 2013); and (4) Cash flow, in logarithmic form (Pearce & Robbins, 1993), as an indicator of financial liquidity. Finally, we have included three industry dummy variables, differentiating between manufacturing (the reference sector), trade, and building and service sectors.

5. Results

As we indicate in the methodology section, the data refers to declining businesses over an eleven-year period (2006-2016). The complete sample includes 23,331 firms ¾63.34 per cent of which are family-businesses (14,778 firms) and 36.66 per cent are non-family businesses (8,553 firms). Table 1 sets out the descriptive statistics and correlation matrix. The average number of employees is 60, with family firms being smaller than non-family firms (34 versus 104 employees). Firm age is similar in both groups of firms (22.3 years for family business and 23.6 years for non-family businesses). Table 1 also shows the zero-order correlations between the variables in the models. All correlations are below 0.3, with all variable inflation factors below the threshold of 5 (max VIF = 3.401). Although all firms in the

sample experienced a decline in their performance, with two consecutive decreases in ROA and a negative ROA in the second year at least, only 2,753 cases ended in bankruptcy or a similar state of closure; and 9,157 cases were able to recover, regaining higher levels of ROA than in the year prior to the initial decrease that drove the company into decline.

Table 1. Descriptives and correlation matrix

	Mean	Std Dev.	1	2	3	4	5	6	7	8	9
1. Firm age	3.151	0.404	1.000								
2. Firm size	-0.075	0.965	0.184***	1.000							
3. Family	0.643	0.479	-0.033***	-0.239***	1.000						
4. Legal form	1.632	0.482	-0.228***	-0.246***	0.145***	1.000					
5. ROA	-2.556	40.075	0.003	0.002	-0.004	-0.004	1.000				
6. ΔRoa	-2.443	1.079	0.005	0.005	-0.004	0.000	0.006	1.000			
7. Liquidity	6.481	14.200	0.001	-0.009**	-0.001	-0.005*	0.000	0.000	1.000		
8. Leverage	0.192	3.593	-0.003	-0.002	0.003	0.004	-0.999***	0.006	0.000	1.000	
9. Failure speed	0.026	0.159	-0.073***	-0.014***	0.027***	0.0229***	0.001	-0.024***	-0.001	0.000	1.000
10. Recovery speed	0.086	0.281	-0.068***	0.0164***	-0.017***	-0.015***	0.002	-0.029***	-0.002	0.001	0.110***

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Table 2 sets out the results of the models relating to hypothesis 1. These models use the Cox proportional hazard models to consider the probability of failure, that is, the probability that the closure is slower or faster. Hazard ratios (odd ratios) represent the proportional change in the hazard rate for a one-unit increase in the independent variable. Model 1a is the baseline model, including only the control variables, taking firm age and size as controls. Model 1b adds family business as a direct effect. Models 1c and 1d include the separate moderation effects of firm age and firm size, while Model 1e shows the two moderations jointly. Model 1a shows the probability of a quick closing of the company when firm age is lower and when firm size is higher[1]. Model 1b shows a positive coefficient of the family nature of firms explaining closure speed. That is, we find that family firms close sooner than non-family ones. When the moderation effects of firm age and firm size are included separately, the results in Models 1c and 1d show a negative coefficient for firm age moderation and a positive one for the moderating influence of firm size. Finally, Model 1e includes all variables simultaneously: the control, independent and moderation variables. The log-likelihood ratio tests show that the inclusion of all variables significantly improves the fit of the model. Model 1e therefore provides the most rigorous test of the hypothesized effects and offers the greatest explanatory power (Bowen & Wiersema, 2004). To summarize the results, Model 1e shows that (1) the probability that declining family businesses close earlier is higher than those that are non-family businesses (h.z.=1.592; $p<0.001$); (2) The age of the company will have a negative effect on the probability of early closing of the company (h.z.=0.812; $p<0.010$); and (3) the size of the company will have a positive effect on the probability of early closing of the company (h.z.=1.395; $p<0.001$).

Table 3 summarizes the results relating to hypothesis 2, where the Cox proportional hazard models estimate the probability of recovery, and consequently the dependent variable represents recovery speed, that is, the probability that recovery is slower or faster. Model 2a, as the baseline model, shows the direct effect of firm age and firm size, showing that a high age slows

[1] In Cox modelling, a hazard ratio smaller than 1 represents a negative coefficient, while a hazard ratio greater than 1 indicates a positive coefficient (Greene, 2018).

down the speed of quick recovery. The effect of firm size is less clear, with a hazard ratio slightly over 1, showing a positive relationship between firm size and quick recovery. Model 2b suggests a non-significant influence of the family nature of firms on recovery speed. Models 2c and 2d demonstrate that the hazard ratios of the individual moderation effects of firm age and firm size are around 1, or slightly below in the case of firm age, and above this threshold for firm size. Finally, Model 2e integrates all of the effects, showing the lower log-likelihood ratio tests and the best explanatory power. A summary of the results of Model 2e show that (1) the family nature of firms has no significant influence on recovery speed; however (2) firm age and its family nature exert a negative interaction effect, in such a way that older family firms experience a probability slower recovery speed (h.z.=0.938; $p<0.05$); and (3) there is a positive interaction effect of firm size and its family nature (h.z.=1.077; $p<0.01$).

Table 2. Cox-proportional hazard model. Failure = Closure

	Model 1a	Model 1b	Model 1c	Model 1d	Model 1e
Firm age	0.445*** (0.029)	0.421*** (0.028)	0.510*** (0.055)	0.420*** (0.028)	0.551*** (0.061)
Firm size	1.045* (0.023)	1.117*** (0.027)	1.114*** (0.027)	0.938* (0.035)	0.924* (0.035)
Family		1.644*** (0.086)	1.672*** (0.089)	1.559*** (0.078)	1.592*** (0.080)
Age x Fam			0.866* (0.055)		0.812** (0.053)
Size x Fam				1.365*** (0.063)	1.395*** (0.065)
Legal form	0.970 (0.049)	0.907† (0.047)	0.903† (0.047)	0.912† (0.047)	0.907† (0.047)
ROA	0.993*** (0.000)	0.993*** (0.000)	0.993*** (0.000)	0.992*** (0.001)	0.992*** (0.001)
ΔRoa	0.999** (0.000)	0.999** (0.000)	0.999** (0.000)	0.999** (0.000)	0.999** (0.000)
Liquidity	1.000 (0.000)	1.000 (0.000)	1.000 (0.000)	1.000 (0.000)	1.000 (0.000)
Leverage	0.999 (0.001)	0.999 (0.001)	0.999 (0.001)	0.999 (0.001)	0.999 (0.001)
Observations	67,843	67,843	67,843	67,843	67,843
Failures	2,119	2,119	2,119	2,119	2,119
Wald chi2	287,28***	330,19***	365,41***	397,85***	445,84***
Log-likelihood	-23,089	-23,030	-23,036	-23,019	-23,014

† $p< 0.1$; * $p< 0.05$; ** $p< 0.01$; *** $p < 0.001$

Table 3. Cox-proportional hazard model. Failure = Recovery

	Model 1a	Model 1b	Model 1c	Model 1d	Model 1e
Firm age	0.588*** (0.020)	0.587*** (0.020)	0.620*** (0.030)	0.587*** (0.020)	0.629*** (0.031)
Firm size	1.085*** (0.130)	1.087*** (0.013)	1.086*** (0.014)	1.060*** (0.016)	1.056** (0.017)
Family		1.017 (0.025)	1.029 (0.026)	1.007 (0.024)	1.023 (0.027)
Age x Fam			0.951† (0.055)		0.938* (0.030)
Size x Fam				1.069** (0.025)	1.077** (0.026)
FJ	0.770*** (0.020)	0.768*** (0.020)	0.766*** (0.020)	0.770*** (0.020)	0.767*** (0.020)
ROA	0.993*** (0.000)	0.993*** (0.000)	0.993*** (0.000)	0.993*** (0.000)	0.993*** (0.000)
ΔRoa	0.999** (0.000)	0.999** (0.000)	0.999** (0.000)	0.999** (0.000)	0.999** (0.000)
Liquidity	1.000 (0.000)	1.000 (0.000)	1.000 (0.000)	1.000 (0.000)	1.000 (0.000)
Leverage	0.999** (0.001)	0.999** (0.001)	0.999** (0.001)	0.999** (0.001)	0.999** (0.001)
Observations	67,843	67,843	67,843	67,843	67,843
Failures	7,545	7,545	7,545	7,545	7,545
Wald chi2	432,18***	431,53***	365,09***	438,65***	440,65***
Log-likelihood	-81,665	-81,665	-81,664	-81,662	-81,660

† p< 0.1; * p< 0.05; ** p< 0.01; *** p < 0.001

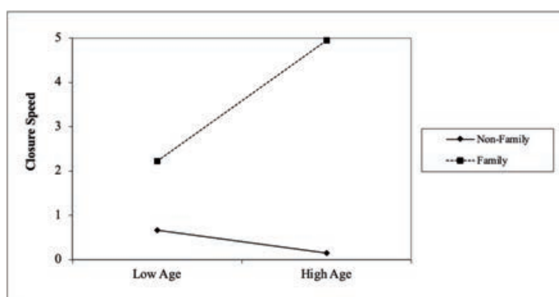
6. Discussion and Conclusion

By adopting a longitudinal perspective, the present study seeks a clearer understanding of how fast family businesses react when faced with declining performance and in particular, when they finally are forced to exit or are able to regain their positive performance. The first hypotheses propose that family businesses try to avoid exit, delaying the decision for as long as possible, although this effect is contingent on firm age and size. With respect to hypothesis 1, the results show a significant but positive relation between the family nature of the firm and the probability of an early closure (cessation) of the activity, which is the opposite of what was proposed in hypothesis 1, and we therefore reject it. Our results suggest that declining family firms close sooner than non-family firms. Different arguments would point out that this is not the expected result. Firstly, the lower level of resources and capabilities of family firms would render them more fragile and weaker, forcing them to close earlier than their non-family counterparts. For example, small family businesses suffer from a lack of access to financial resources, and can only depend on family resources, which may be insufficient in a period of deteriorating performance and in the context of a financial crisis. Secondly, family firms would be able to diagnose the severity of the economic crisis and react faster than non-family businesses, reaching an agreement between family members that facilitates a quick exit and avoids greater loss of the family's SEW. In a period of declining performance it may be possible for family relatives to agree to close more quickly than it would be for non-family partners. Finally, closure speed may be contingent on the type of family business, with regard to firm age and firm size, as we discuss in the following paragraph.

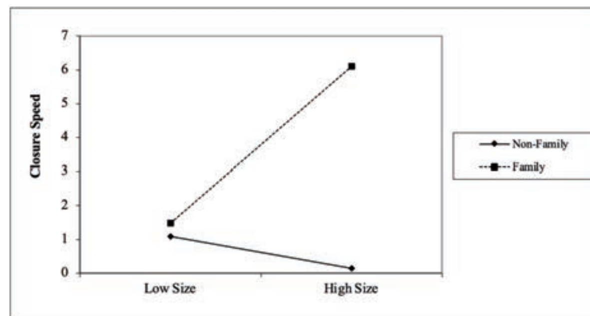
Hypothesis 1a proposes that older family businesses are more likely to close later than non-family businesses. Model 1e shows a significant negative interaction effect between the firm's family nature and firm age (odd ratio below 1). In order to interpret these results, we have represented the moderation effect in Figure 1a, showing that as the family business gets older, the likelihood of an earlier closure is lower compared to non-family businesses.
This result supports hypothesis 1a. Hypothesis 1b proposes that larger family businesses will experience a probability of closing later with respect to non-family businesses. As we have mentioned above, Model 1e in Table 2 shows a significant and positive interaction effect of the firm's family nature and size on closure speed. Figure 1b represents this effect, showing that in larger family firms the probability of closing will accelerate rather than decrease, as proposed in hypothesis 1b, and so we reject it. In this case, we find that while the probability of an early closure is lower as the company increases in size, the probability of an early closure of large family businesses is greater when there is a decline. A possible explanation of this unexpected result may be rooted in the more fluid relationship that exists between relatives than the relationship between non-related partners, which is tested when they have to take difficult decisions such as whether to exit. We propose that delaying the closure of a declining family business may undermine family SEW and family relationships. At the same time, the family's embeddedness in the business may mean that the family is reluctant to sell the business, preferring instead to close it. This behavior may allow the family to save as much as possible and to start a new venture in a more benevolent future environment. Conversely, larger non-family firms may find it more difficult to close the business due to potential disagreements between the partners, and furthermore they have more options and less resistance to selling the business on to a third party.

Figure 1. Interaction effect. Cox-proportional hazard Model. Failure = Bankrupcy

a. Firm age



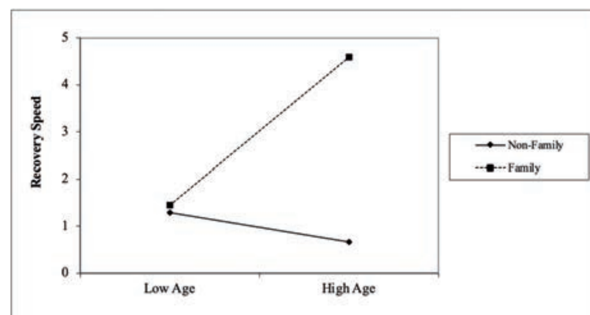
b. Firm size



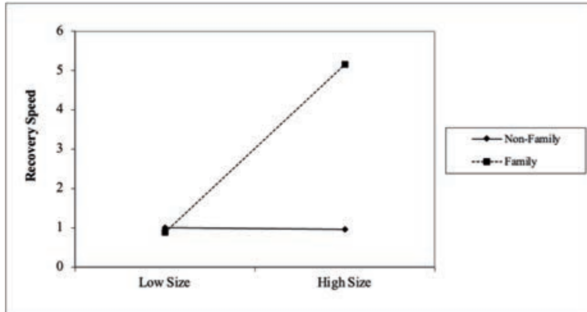
The second hypothesis proposes that family firms react faster than non-family firms in adopting turnaround measures and achieving recovery; a relationship that is moderated by firm age and firm size. Our results show there is no significant relationship between the family nature of companies and recovery speed, so we cannot support hypothesis 2. With regard to the effect of firm age, firstly we observe a negative effect of firm age on the probability of an early recovery. In relation to the interaction effect, our results show a significant and negative interaction influence on the probability of an early recovery, an effect that is represented in Figure 2a. We see that the probability of an early recovery is lower as companies get older, get older in non-family business in non-family businesses, which supports hypothesis 2a. Finally, Figure 2b represents the interaction effect of the family nature of the firm and firm size on recovery speed. As this figure shows, larger family businesses increase their probability of rapid recovery, while this acceleration is not observed in non-family businesses, as proposed in hypothesis 2b, and it is therefore supported.

Figure 2. Interaction effect. Cox-proportional hazard Model. Failure = Recovery

a. Firm age



b. Firm size



In summary, our findings show that, contrary to expectations, declining family firms will close their business sooner than non-family ones. We also find that firm age reduces the probability of early closure and firm size increases the probability of early closure, and this is more marked among family businesses than non-family ones. These findings show that exit is not always the last option for family businesses, which is likely to be because family members prioritize the preservation of the family's SEW over financial business outcomes (DeTienne & Chirico, 2013). With regard to recovery speed, our findings are closer to the hypotheses proposed. Although we are unable to find a direct effect of the family nature of the firm on recovery speed, the results show that the probability of a speedy recovery is lower among older family businesses and higher in larger ones. These findings support the idea of the greater agility and speed of family firms when taking decisions (Casillas et al., 2019; Nordqvist & Melin, 2010). In summary, the results show that older companies seem to have more experience and resources that allow them to endure bad results for longer, although it also means dragging more inertia in decisions, thus also delaying the chances of recovery.

6.1. Theoretical implications

This research contributes to the family business literature in a number of ways. First, it refines our knowledge of the effect of SEW on business behavior (Davila et al., 2022; Gómez-Mejía et al., 2007), showing that exit is not always the last option for underperforming family firms (King et al., 2022). Our results show that declining family businesses close sooner than non-family businesses; this is most likely to be in order to rapidly protect the family's SEW (Cennamo et al., 2012). However, this probability of early closure decreases as the age of the family firm rises, showing that firm age helps to generate greater family involvement with the company and reinforces the concept of the firm as a family legacy (Berrone et al., 2012). Secondly, our research underlines the greater agility of family businesses when adopting turnaround decisions (King et al., 2022). Our results show that family businesses are able to take decisions faster than non-family firms —particularly larger firms— which is likely to be due to their specific ownership and governance structure (Mellahi & Wilkinson, 2004), and their lower structural rigidity (MacMillan & Overall, 2017). Thirdly, by adopting a longitudinal perspective, this research shows the dynamic differences between family and non-family businesses. Prior research argues that family and non-family firms differ in their conception of "time" (Lumpkin & Brigham, 2011). Our research adds to this line of investigation, showing that the two types of firms react at different speeds when they face declining performance in the context of a global economic crisis.

6.2. Implications for practitioners

From an applied point of view, our work underscores the importance of making quick and flexible decisions in the face of uncertain and difficult environments. It is not only important for family businesses to make the right decisions in the face of declining results, but also to adopt them quickly. Likewise, our findings underline the role of resources when the company goes through bad results. Larger companies better withstand periods of crisis, which should call the attention of family businesses, generally less growth-oriented, with a very small average size. Finally, the results reveal the role of routines and organizational inertia in crisis and uncertainty environments and how it can slow down and even prevent the recovery of family and non-family businesses.

6.3. Limitations and future research

However, our research also has limitations, which point to future areas of research. First, our study only uses secondary data from Spanish firms. The available data does not allow us to directly measure relevant variables such as SEW, family involvement, or long-term orientation. Future research should make further advances by trying to obtain direct primary data or at least secondary information as proxies that measure some of these relevant variables. Second, our research was conducted within a specific time frame and country context. While we consider this context to be of particular relevance, given the deep economic crisis in Spain during the period analyzed, we recognize that it will be difficult to generalize our results in other economic and geographical environments. We therefore suggest a replication of the research to test the robustness of our results, using different samples in a variety of industry, geographical,

and environmental contexts (Bettis et al., 2016). Third, apart from the considerations of size and age, we have taken family and non-family firms as homogeneous samples for our categories, while the prior literature has stressed the heterogeneity of family businesses (DeTienne & Chirico, 2013; Kotlar et al., 2014; Stockmans et al., 2010), and the need to consider the family nature of the firm more in terms of degrees rather than as a single category (Astrachan et al., 2002; Shanker & Astrachan, 1996). We believe that this study will open new avenues of research and improve our understanding of family business behavior; especifically when these businesses face financial difficulties. Finally, in this article, we do not consider mergers, acquisitions and sales as exit strategies used by family businesses in the face of a decline in corporate performance (Chirico et al., 2018). This decision is due to the fact that this consideration would entail greater difficulty in the statistical analysis and could also be incorporated into a new line of research.

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New Research Trends in Sustainability in Family Businesses: A Bibliometric Literature Review

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Abstract Sustainability in family businesses is becoming an exigent, interesting, and ever-evolving topic in the field of business research, owing to the requirements of sustainable development agendas for all types of companies. The growing body of research on this topic, considering traditional and new challenges for family firms, encourages the synthesis and organization of existing knowledge through a literature review. This study conducts a combination of different analyses with bibliometric techniques to provide an overview of the evolution of scientific literature on sustainability in family businesses and its structure in terms of relevant groups of researchers, most cited articles, and the contributing journals. Finally, future research endeavors are suggested for each identified open theme. Unlike previous reviews, the present work considered emergent sub-fields such as environmental studies and environmental sciences in document selection, which have been incorporated into the traditional research fields like business, management, and economics and finance in the context of family businesses.

CÓDIGOS JEL
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PALABRAS CLAVE
Sostenibilidad en la empresa familiar, desarrollo sostenible, bibliometria, revisión sistemática de la literatura, SPAR-4-SLR protocolo.

Nuevas tendencias de investigación sobre sostenibilidad en la empresa familiar: revisión bibliométrica de la literatura

Resumen La sostenibilidad en las empresas familiares se está convirtiendo en un campo de investigación actual, necesario e interesante debido a las exigencias de la agenda de desarrollo sostenible para todo tipo de empresas. El creciente cuerpo de investigación sobre este tema, considerando los desafíos tradicionales y nuevos para las empresas familiares, anima a sintetizar y organizar elconocimiento existente a través de una revisión de la literatura. Este artículo realiza una combinación de diferentes análisis con técnicas bibliométricas para ofrecer una visión global de cómo se ha desarrollado el campo de investigación de la sostenibilidad en la empresa familiar, y de su estructura en términos de grupos relevantes de investigadores y las principales temáticas abiertas. Finalmente, se sugieren algunas líneas de investigación futuras. A diferencia de las revisiones anteriores, en el presente trabajo se han tenido en cuenta subcampos emergentes como los estudios medioambientales y las ciencias medioambientales en la selección de artículos, que se han incorporado a los campos de investigación tradicionales como la empresa, la gestión, la economía y las finanzas en el contexto de las empresas familiares.

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1. Introduction

Literature on corporate sustainability has grown over the last two decades, partly in response to the social, human, and environmental costs and externalities of unsustainable firm practices. Sustainable Development Goals (SDGs) require companies to play an active role in their commitment to sustainable development. Furthermore, a well-developed sustainability plan can help the company reduce risk and position itself to leverage value creation opportunities (Carroll et al., 2022). A large-scale global effort is required over the next decade to accelerate sustainable solutions to the world's economic, environmental, social, and governance challenges and deliver on the UN's SDGs by 2030.

Family firms represent the most extended organization type globally (Family Firm Institute, 2018) and play an important role in generating employment in the private sector and contributing to the GDP (D'Angelo et al., 2016). Thus, their involvement in sustainable development through an active contribution to the 2030 sustainability agenda is critical.

This forms the purpose of the global initiative-Family Business for Sustainable Development (FBSD) (https://fbsd.unctad.org/about-us/). This is a partnership between the UNCTAD—the UN body responsible for sustainable development—and Family Business Network (FBN) – the world's leading organization of business families. The purpose of the initiative is to actively promote sustainability in the family business (SFB) strategies, committing them to concrete, measurable contributions toward the SDGs. The FBSD represents a renewed framework of activities to boost Polaris- an FBN initiative and a growing global movement of business families focused on maximizing the positive economic, environmental, and societal impact.

Furthermore, Family businesses (FBs) are key to building a transformative and sustainable future because of their intrinsic long-term and local orientation aligning with family values and firm culture. Thus, the rationale of SDGs is intrinsic to family businesses; the inclusion of these goals and managerial strategies is a new compromise for this kind of firms. Following Patuelli et al. (2022), SDGs are new drivers behind transcending corporate social responsibility in family firms. The authors carry out a case study to analyze how these goals enter a family firm's strategy and activities.

Economic, social, and environmental concerns change over time, and the sensitivity to act on them varies depending on the industry, as stakeholders in different industries have different perceptions and interests (Barnett, 2007). To address these issues, family businesses have been identified as potential bastions of stewardship, management, and practices that promote a long-term, socially responsive orientation in dealing with stakeholders (Le Breton-Miller & Miller, 2016), and take particular care to perpetuate a positive family image and reputation (Sharma & Manikutty, 2005). Socioemotional wealth substantially influences a firm's environmental practices (Berrone et al., 2010). However, there are also darker views of this form of enterprise in relation to its involvement in sustainability (Miroshnychenko & De Massis, 2022).

Sustainability has emerged as a relevant and established subject in the family business research (Rovelli et al., 2022). This growing body of research shows the specific processes by which family firms achieve sustainable goals (Ferreira et al., 2021). However, despite the contributions of family business scholars, the literature lacks a theoretical understanding and empirical analysis on how sustainability can be integrated into family businesses (Clauss et al., 2022).

Previous reviews have made significant research advances on SFBs (see Table 1).

However, the present work differs significantly from previous studies, primarily because it identifies emerging subjects because of new research areas regarding the different dimensions of sustainability in family firms and not just regarding the sustainability of the family business model. In this sense, periodic reviews of the literature are essential for observing and analyzing how the research field is developing, especially when there is a sharp increase in the number of articles in general, as well as those in emergent subfields (Feng et al., 2017). Therefore, it is necessary to review the research in the field of SFB, as previous reviews only covered the period up to 2019 (Ferreira et al., 2021). Specifically, research in the field of SFB experienced exponential growth during 2020-2022 (as shown in Figure 2), with the emergence of new subfields such as environmental studies and environmental sciences.

Moreover, management and business research has addressed the issue of sustainability from different perspectives (Fellnhofer et al., 2014). The SFB literature has defined concerns related to the perseverance, continuity, and control exercised by the family in pursuit of firm survival (Memili et al., 2018). Socioemotional wealth has also promoved the goal of sustainability of companies and successful transgenerational business succession (Berrone et al., 2012). However, in the era of the SDGs, unlike previous reviews (Table 1) and following Claus et al. (2022), who provided a comprehensive integration of sustainability research and family business,

the scope of this research must consider family businesses as active agents of a paradigm shift in economic development.

Table 1. Overview of the literature reviews on sustainability in family businesses

Author(s) (year)	Source title	Type of review	Dataset	Main findings
Broccardo et al. (2018)	Corporate social responsibility and environmental management	Systematic literature review	21 articles published between 2006 and 2017	Internal corporate sustainability drivers in family firms, do not have a homogenous impact on sustainability initiatives due to the distinctiveness of these types of firms
de las Heras-Rosas & Herrera (2020)	Sustainability	Bibliometric (SCIMAT)	286 articles published between 2003 and 2019	Structures the SFB literature regarding three lines: factors that drive sustainability, methods or practices that favour sustainability and factors that endanger survival
Ahn et al. (2021)	Sustainability	Bibliometric (Network analisys)	947 articles published between 1981 and 2019	Three knowledge networks of the family governance literature: keywords networks, citations networks, and authors networks
Ferreira et al. (2021)	Technological Forecasting & Social Change	Bibliometric	161 articles published between 2003 and 2019	Four thematic clusters: family business capital, family business strategy, family business social responsibility, and family business succession.

To include these new perspectives, this review provides an overview of SFB research through a systematic literature review using bibliometric techniques. This methodology presents the bibliometric performance and analyzes the intellectual and conceptual structures of academic research in the field. To this end, the specific research questions (RQ) for the present literature review are as follows: RQ1: What are the past and current publication trends in the SFB research field?; RQ2: What are the main journals, authors, and the most followed papers in the SFB research field?; RQ3: What is the intellectual structure of the SFB research area as defined by the co-authorship collaborations?; RQ4: What is the conceptual structure of the SFB research area along with the main research themes?.

This study follows the structure and methodology of other literature reviews in family business research field (Brito-Ochoa et al., 2020; Maseda et al., 2023) in combination with the Scientific Procedures and Rationales for Systematic Literature Reviews protocol (SPAR-4-SLR) by Paul et al. (2021). While Section 2 describes the details of the methodology, Section 3 presents the results of the analyses. Sections 4 offers the concluding remarks along with the avenues for future research on SFB. As suggested by Kraus et al. (2022), literature reviews can be helpful in starting new research.

2. Methodology

A Systematic Literature Review (SLR) is a form of research that analyses the existing publications and follows a systematic methodology for synthesizing the publications (Tranfield et al., 2003). A SLR, unlike other common reviews, follows a review protocol to guide the decisions made in the literature review, thereby making it more transparent and replicable (Lim et al., 2022). The SLR is a scientific and rigorous secondary research method widely used in family businesses research area (Calabrò et al., 2019; Hernández-Perlines et al., 2023; Maseda et al., 2022).

The review protocol that we used was based on the SPAR-4-SLR, which is a rigorous protocol for systematic review of the literature (Paul et al., 2021). Following this protocol, the steps of this systematic literature review of the SFB research field are presented in table 2.

Table 2. The SPAR-4-SLR protocol for SFB literature review

Assembling

- **Identification**

Review domain: Sustantability in family firms.
Research Questions: (RQ1) What are the past and current publication trends in the SFB research field?; (RQ2) What are the the main journals, authors, and the most followed papers in the SFB research field?; (RQ3) What is the intellectual structure of the SFB research field as defined by the co-authorship collaborations?; (RQ4) What is the conceptual structure of the SFB research field along with the main research themes?.
Source type: Conceptual and empirical arrticles in journals.
Source database: Web of Science (Science Citation Index Expanded and Social Sciences Citation Index).

- **Acquisition**

Search mechanism and material acquisition: Web of Science (Science Citation Index Expanded and Social Sciences Citation Index).
Search period: Until December 2022.
Search Keywords: [("family firm*" OR "family business*" OR "family enterprise*" OR "family control*" OR "family own*" OR "family SME*" OR"family capital" OR "founder* firm*" OR "family involvement") AND ("firm*" OR "busines*" OR "company")]
AND (Sustainab*) in the topic tab (article title, abstract and keyword).

Total number of articles returned from the search strategy: 330.

Arranging

- **Organization codes**: Lenguage, Subject area, and Source quality.
- **Purification**

Document type: Articles or reviews.
Lenguage: English.
Subject areas: "Business, "Management", "Economics", "Business and finance", "Environmental studies" AND "Environmental sciences".
Source quality: List in the Academic Journal Guide (AJG) (2021).

Total documents returned from arranging stage 180 (dataset of articles)

Assessing

- **Evaluation**

Analysis method: Bibliometric analysis.
Analytical technique:
o Performance analysis: article publication trend, main articles, authors, and journals.
o Science mapping: coauthorship and keywords co-curreces.
Software: Microsoft Excel, VOSviewer.

- **Reporting**

Conventions: Figures (charts and networks), tables (metrics) and interpretations (narratives).
Limitations: Data limited to WOS and AJG (source quality). Review limited to bibliometric information.
Source of support: No funding received. The authors convey their deepest and most sincere appreciation to the editor and anonymous reviewers.

Source: adapted from Paul et al. (2021)

2.1. Assembling

Identification and acquisition are the steps of the assembling. This review aims to identify academic publications (*identification*) related "Sustainability in family business" (*domain*). This is the topic of this literature review.

This review focuses on journal publications only (*source type*) because they are rigorously peer-reviewed documents (Paul et al., 2021). These journals must be indexed in the Web of Science (WoS) database (*Source database*). Many international rankings, such as the Times Higher Education World University Ranking and the Academic Ranking of World Universities, use the WoS database (Maseda et al., 2022).

In *acquisition*, the search mechanism employed were the WOS, Social Sciences Citation Index and Science Citation Index Expanded. These databases provide all metadata required for bibliometric analysis. Articles published until December 2022 were considered.

The data retrieval strategy is a combination of search words used to capture all published works in the research domain. The words used in the search were based on previously recognized family business literature reviews (Maseda et al., 2022), but delimiting the field of sustainability (Ferreira et al., 2021):

[***("family business*" OR "family firm*" OR "family enterpris*" OR "family own*" OR "family control*" OR "family SME*" OR "founder* firm*" OR "family capital" OR "family involvem*") AND ("firm*" OR "busines*" OR "company")] AND (Sustainab*)***

This combination of search words was considered for the "Topic" tab, which means including them into the titles, abstracts, and keywords, of the WoS. Using this search strategy, a total of 330 publications were returned.

2.2. Arranging

This step involved the organization and purification of the 330 documents. This review relied (*organization*) on the categorical filters used by WoS Specifically, in relation to the *purification*, this SFB review includes only "articles" or "reviews" (*document type*), because other documents may not have undergone peer review. The articles and reviews written in "English" (*language*) and categorized under the "Business," "Management," "Economics," "Business and Finance," "Environmental Studies," and "Environment Sciences" sub-areas were considered. Finally, to apply a more quality rigorous selection of documents into the WOS, the review preferred only articles published in journals listed in the Academic Journal Guide (AJG, 2021), elaborated by the Chartered Association of Business Schools (*quality filter*). The AJG provides ratings indicating the quality of the journal: 4*, 4, 3, 2, and 1, where a rating of 4* indicates the highest quality and a rating of 1 represents compliance with the minimum level of quality required (source quality). All filters reduced the dataset for literature review to 180 documents.

2.3. Assessing

This is the final stage of the protocol. This includes the evaluation and reporting of the documents under review. In the *evaluation*, bibliometric analysis has two main methods: performance analysis and science mapping (Cobo et al., 2011). The performance analysis reports descriptive metrics to evaluate the publications. Science mapping aims to identify the scientific field's structure and dynamics (Zupic & Čarter, 2015).

This SFB review analizes the 180 articles of the dataset, first by showing their performance and second by mapping the co-authorships and thematic themes that collectively represent and contribute to SFB research developments.

The performance analysis reports the metrics for the first two research questions (RQ1 and RQ2), whereas *science mapping* responds to the last two research questions (RQ3 and RQ4).

The co-occurrence analysis of authors provides information into collaborations among authors, and the keyword co-occurrence analysis provides insights into themes (knowledge clusters) and related topics.

Bibliometric software assists in this task by making mathematical and statistical calculations of co-occurrence. This SFB literature review was conducted using Microsoft Excel for the performance analysis, and VOSviewer (Van Eck & Waltman, 2010) for science mapping analysis and network visualization.

In terms of *reporting*, this review followed past bibliometric review reporting standards, using figures (*charts and network visualizations*), tables (*metrics*), and interpretations (*accompanying narratives*) to report the results.

3. Analyses and Results

This section presents the visualization and the interpretations of bibliometric indicators.

First, we conducted a performance analysis. The current publication trend is represented by the number of articles published per year and the main authors, journals, and articles by the total number of citations and/or publications. Second, although there are several approaches for mapping a bibliographic dataset, we used co-authorship and co-word analysis to present a holistic view of the main groups of researchers

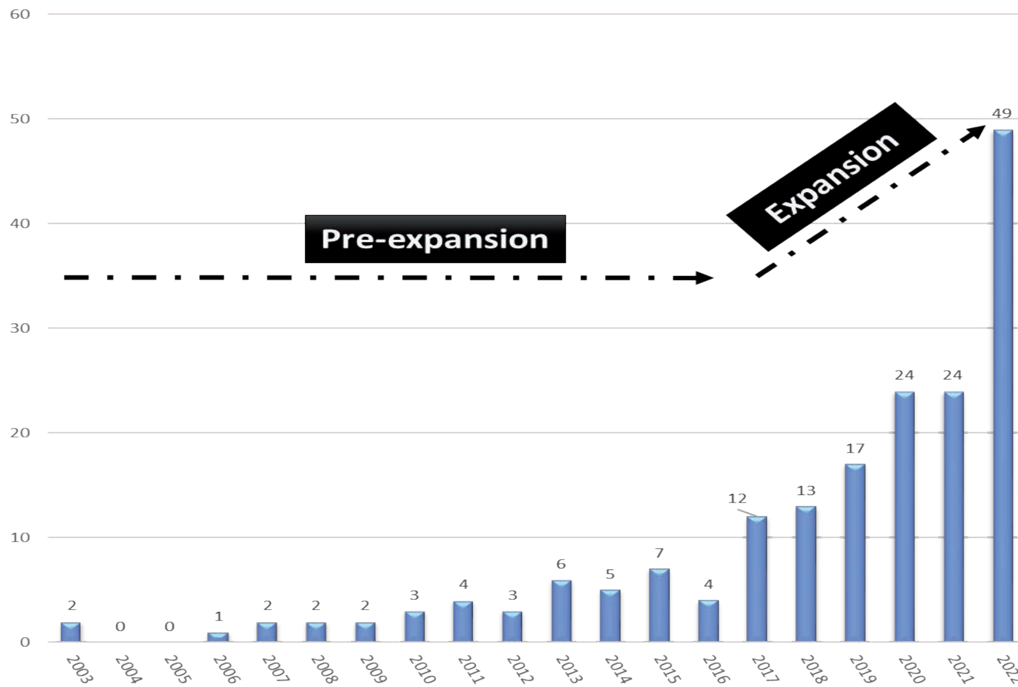
and themes in the SFB research field.

3.1. Descriptive overview of the field

3.1.1. Publication trend

Figure 1 shows the evolution of scientific research on SFBs based on the number of articles per year. There is a progressive expansion in the number of publications, beginning in 2017. Therefore, two different research periods can be distinguished in the dataset: the pre-expansion period (2003-2016) and the expansion period (2018-2022). Special issues of journals, such as Technological Forecasting & Social Change (2022) addressing specific topics in SFB, contribute significantly toward this increment in the number of publications.

Figure 1. The evolution of scientific research on the SFB research field



The first article in accordance with the dataset was published in 2003. Thus, SFB is not only an emergent research area, but also a relatively recent creation in family business scholarship.

3.1.2. Journals' performance

The top journals for SFB research are presented in Table 1, which shows the journals with over 100 citations and/or more than four published articles. As can be inferred from the table, the most influential journals in the SFB research field, considering the number of published articles, are *Business Strategy and the Environment*, *Journal of Business Ethics*, and *Technological Forecasting and Social Change* with 22, 15, and 15 articles, respectively. This fact represents the specific approach of these three journals toward the different aspects of sustainable development.
Journal of Family Business Strategy and *Family Business Review*, two journals with specific publication topics on family firms, have the fourth and fifth positions in this productivity ranking. However, other journals with only one or two publications have reached high citation rankings and thus represent their influence on the research area. These journals include *Entrepreneurship Theory and Practice* and *Journal of Business Venturing*, among others, with sub sequential positions in the ranking. It is worth noting the upcoming special issue "Sustainability in Family Firms: The Path Forward," to be published by the Business Ethics, the Environment & Responsibility journal. This is an indicator that the SFB is an interesting research field and thus is gaining attention of the academic community.

Table 3. Main journals in the SFB research field

R	Journal	TP	TC	TC/TP
1	Business Strategy and the Environment	22	684	31,09
2	Journal of Business Ethics	15	495	33,00
3	Technological Forecasting and Social Change	15	197	13,13
4	Journal of Cleaner Production	11	366	33.27
5	Journal of Family Business Strategy	9	323	35,89
6	Family Business Review	7	465	66,43
7	Journal of Small Business Management	6	347	57,83
8	Corporate Social Responsib and Environmental Manag.	5	280	56,00
9	International Journal of Entrepreneurial Behavior & Research	5	157	31,40
10	Journal of Business Research	5	84	16,80
11	Entrepreneurship Theory and Practice	4	836	209,00
12	Entrepreneurship Research Journal	4	35	8,75
13	Journal of Business Venturing	1	291	291,00
14	Entrepreneurship and Regional Development	2	193	96,50
15	Economic Geography	1	135	135,00
16	Journal of Product Innovation Management	2	131	65,50
17	European Accounting Review	1	130	130,00

Abbreviations: R = ranking, TC = total citations, TP = papers

3.1.3. Articles' performance

The number of citations of a document reflects its popularity, influence, and interest it has received from researchers. Table 4 lists the top ten articles with the highest number of citations. These articles have a significant impact on academic literature and should inspire prospective authors to pursue high-quality standards.

Further, the older the article in terms of year of publication, the more the opportunity of it receiving higher citations. Therefore, the years of publication of the most cited articles in the dataset generally correspond to the pre-expansion period (2003-2016). Le Breton-Miller and Miller (2006) and Zellweger et al. (2013) are the most cited articles focused on a classic research theme in family businesses: the long-term survival of the business through family generations. However, the AJG ranking corroborated the high quality of these articles, with scoring standards of 4 and 3, respectively.

Table 4. The most cited articles in the SFB research field

R	Authors	Article Title	Journal	Year	TC	AJG
1	Le Breton-Miller, I; Miller, D	Why do some family businesses out-compete? Governance, long-term orientations, and sustainable capability	Entrep. Theory Pract.	2006	440	4
2	Zellweger, TM; Nason, RS; Nordqvist, M; Brush, CG	Why do family firms strive for nonfinancial goals? An organizational identity perspective	Entrep. Theory Pract.	2013	327	4

R	Authors	Article Title	Journal	Year	TC	AJG
3	Olson, PD; Zuiker, VS; Danes, SM; Stafford, K; Heck, RKZ; Duncan, KA	The impact of the family and the business on family business sustainability	J. Bus. Ventur.	2003	291	4
4	Danes, SM; Stafford, K; Haynes, G; Amarapurkar, SS	Family capital of family firms bridging human, social, and financial capital	Fam. Bus. Rev.	2009	200	3
5	Westhead, P; Howorth, C	'Types' of private family firms: An exploratory conceptual and empirical analysis	Entrep. Reg. Dev.	2007	186	3
6	Niehm, LS; Swinney, J; Miller, NJ	Community social responsibility and its consequences for family business performance	J. Small Bus. Manag.	2008	167	3
7	Lopes, CM; Scavarda, A; Hofmeister, LF; Thome, AM; Vaccaro, GL	An analysis of the interplay between organizational sustainability, knowledge management, and open innovation	J. Clean Prod.	2017	143	2
8	Wagner, M	Corporate social performance and innovation with high social benefits: A quantitative analysis	J. Bus. Ethics	2010	137	3
9	Wei, YHD; Li, WM; Wang, CB	Restructuring industrial districts, scaling up regional development: A study of the Wenzhou model, China	Econ. Geogr.	2007	135	4
10	Achleitner, AK; Gunther, N; Kaserer, C; Siciliano, G	Real earnings management and accrual-based earnings management in family firms	Eur. Account. Rev.	2014	130	3

3.1.4. Authors' performance

The data indicated that 451 authors contributed to the publication of 180 papers on SFB research. It should also be noted that 416 authors (92.239 %) published only one article, 29 authors published two articles, and 6 published more than two articles. Table 5 shows the top authors of SFB research, along with their productivity and impact. Danes, with 718 citations and 9 articles, has been the most cited and most productive author. Kallmuenzer, Miller, Stafford, Basco, and De Massis are the remaining authors, who have published more than two articles. The top seven SFB authors based on total citations were Danes, Miller, LeBreton-Miller, Stafford, Brush, Nordqvist, and Zellweger.

Table 5. Influential authors in the SFB research field

	Authors with two or more articles and more than 100 cites					Authors with 200 or more citations			
	Authors	TP	TC	TC/TP		Authors	TP	TC	TC/TP
1	Danes, SM	9	718	79,78	1	Danes, SM	9	718	79,78
2	De Massis, A	4	176	44,00	2	Miller, D	3	536	178,67
3	Kallmuenzer, A	4	7	1,75	3	Le Breton-Miller, I	2	535	267,50
4	Miller, D	3	536	178,67	4	Stafford, K	3	528	176,00
4	Stafford, K	3	528	176,00	5	Brush, CG	1	327	327,00
4	Basco, R	3	175	58,33	5	Nason, RS	1	327	327,00
7	Le Breton-Miller, I	2	535	267,50	5	Nordqvist, M	1	327	327,00
7	Wagner, M	2	210	105,00	5	Zellweger, TM	1	327	327,00

	Authors with two or more articles and more than 100 cites						Authors with 200 or more citations			
	Authors	TP	TC	TC/TP			Authors	TP	TC	TC/TP
7	Short, JC	2	119	59,50		9	Duncan, KA	1	291	291,00
7	Zachary, MA	2	119	59,50		9	Heck, RKZ	1	291	291,00
7	Haynes, GW	2	109	54,50		9	Olson, PD	1	291	291,00
7	Payne, GT	2	102	51,00		9	Zuiker, VS	1	291	291,00
						13	Wagner, M	2	210	105,00
						14	Amarapurkar, SS	1	200	200,00
						14	Haynes, G	1	200	200,00

Abbreviations: R = ranking, TC = total citations, TP = papers

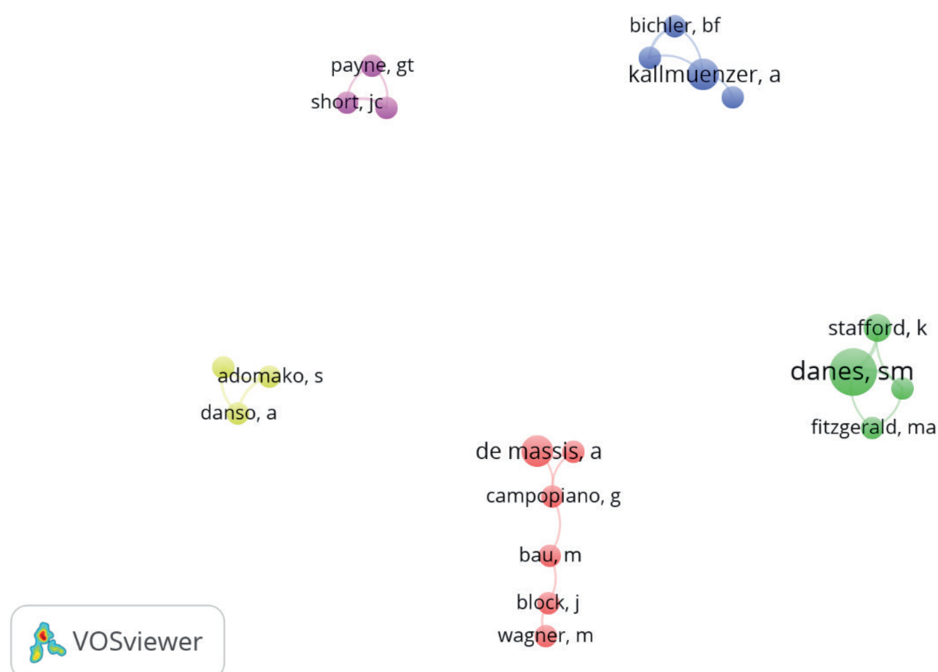
3.2. Structured overview of the field

3.2.1. Co-authorship analysis: intellectual structure of SFB field

To analyze collaboration trends in this research field, we analyzed the co-authorship of the SFB article dataset. This analysis provides details on the nature and scope of collaborations between co-authors (Donthu et al., 2021). This social network of scholars, created by their research concerns, offers an overview of the intellectual structure of the research area.

In this study, the networks were reduced to focus on groups of a minimum of three authors who have published two or more documents by one of the authors in the research field. The collaborative network of leading authors is shown in Figure 2. The size of the circle represents the number of articles by the authors, while the thickness of the lines between two nodes indicates the frequency of collaboration between the two authors. Table 6 shows the articles of the group members in SFB research. The analysis of coauthorship among the most productive authors provides a holistic view of the main research groups in the SFB field and their research domains.

Figure 2: Co-authorship networks in the SFB research field



Based on the results of the collaboration network analysis (Figure 2 and Table 6), five clusters of author collaborations emerged. The first group, comprising of Danes, Fitzgerald, Haynes, and Stafford (green network), has the oldest publications, most of the articles published before 2015. It is the main group considering the number of articles and citations, with 10 articles and 724 citations, respectively. Based on the articles published in the SFB research field by the authors of this group, Olson et al. (2003) and Danes et al. (2009) stand out with 291 and 200 citations, respectively, with the sustainability of the family business model being their core research theme.

The second most important collaborative network (red network) was formed by Baù, Block, Campopiano, Siascia, De Massis, and Wagner, with 426 citations from nine articles. In the pre-expansion period, Wagner (2010) discussed the link between innovation with social benefits and corporate social performance, along with the role played by family businesses in this relationship. More recent publications of members of this group focus on the active implications of family businesses on environmental sustainability and sustainable development. Doluca et al. (2018) find that family firms lag in environment-related activities, beneficial products, processes, organizational innovations, and value creation. Despite their increasing proactiveness in sustainability practices, Miroshnychenko and De Massis (2022) found differences between family and nonfamily firms in their sustainability practices. They showed that, compared with the non-family businesses, the family businesses were relatively less involved in green supply chain management, pollution prevention, and green product development practices. According to Baù et al. (2021), other issues related to sustainability during the expansion period were the influence of globalization, digital technologies, and social and environmental concerns in the way family businesses operate both locally and internationally.

Payne, Short, and Zachary formed the third group of interrelated authors (pink network), with three articles in the pre-expansion period and 130 citations. The authors of this cluster are fundamentally concerned with the sustainability of family businesses. Specifically, their sustainable competitive advantage, transgenerational sustainability, and the problem of dissolution of the multifamily businesses.

Adomako, Amankwah-Amoah, and Danso, researchers from English universities, represent the fourth authorship group (light green network) with two publications in the expansion period, focusing on the relationship between environmental outcomes and family business value creation. Adomako et al. (2019) and Lartey et al. (2020) focused on environmental sustainability and sustainable development as important research issue in family business field. Adomako et al. (2019) used insights from the research on environmental sustainability orientation and family businesses to introduce firms' age and family involvement as moderators in the environmental sustainability orientation-value creation linkage; while Lartey et al. (2020) discussed the possibility that the influence on lean-green strategy and company growth is due by different levels of managerial power, industry competition and family influence.

Finally, Bichler, Kallmuenzer, Kraus, and Peters formed the fifth major author collaboration network (blue network). Kallmuenzer is the central author of this group and co-author of four out of six articles published by the authors of this group, all of which were published in recent years during the expansion period. Nikolakis et al. (2022) studied the issue of environmental sustainability, family dynamics, and social sustainability, showing that family dynamics (family conflict, trust, and socioemotional wealth) can motivate the social and environmental and strategies in family businesses.

3.2.2. Co-word analysis: Conceptual structure of SFB field

Co-word analysis aims to identify relationship and s connections between keywords in a research domain (Ding et al., 2001). The doctrine behind this analysis is that keywords represent the content of an article (Maseda et al., 2023). When two keywords co-occur in an article, the two topics they represent are interrelated.

To analyze the content structure of SFB research and establish the co-word networks, each keyword in a network must appear in at least four articles. By applying the keyword co-occurrence technique, VOSviewer software identified 25 keywords that appear in at least four articles.

Table 7 presents the list of keywords in each of these clusters as well as their total number of occurrences, while Figure 4 displays information on the connectedness among the keyword clusters.

Table 6. Authors, universities, countries, and articles on SFB topics

Research Group 1		
Authors, University, Country	Articles	TC
Danes, SM (Univ Minnesota, USA)	Olson, PD; Zuiker, VS; **Danes, SM; Stafford, K**; Heck, RKZ; Duncan, KA (2003), The impact of the family and the business on family business sustainability, J. Bus. Ventur.	291
	Danes, SM; Stafford, K; Haynes, G; Amarapurkar, SS (2009), Family capital of family firms bridging human, social, and financial capital, Fam. Bus. Rev.	200
	Fitzgerald, MA; Haynes, GW; Schrank, HL; Danes, SM (2010), Socially responsible processes of small family business owners: exploratory evidence from the national family business survey, J. Small Bus. Manag.	72
Fitzgerald, MA (N Dakota State Univ, USA)	Werbel, JD; Danes, SM (2010), Work family conflict in new business ventures: the moderating effects of spousal comitment to the new business venture, J. Small Bus. Manag.	64
	Stafford, K; Danes, SM; Haynes, GW (2013), Long-term family firm survival and growth considering owning family adaptive capacity and federal disaster assistance receipt, J. Fam. Bus. Strateg.	37
Haynes, GW (Montana State Univ, USA)	Yang, YX; **Danes, SM** (2015), Resiliency and resilience process of entrepreneurs in new venture creation, Entrep. Res. J.	22
	Hanson, SK; Hessel, HM; **Danes, SM** (2019), Relational processes in family entrepreneurial culture and resilience across generations, J. Fam. Bus. Strateg.	19
Stafford, K (Ohio State Univ, USA)	Jang, JY; Danes, SM (2013), Are we on the same page?: Copreneurial couple goal congruence and new venture viability, Entrep. Res. J.	9
	Lee, YG; **Fitzgerald, MA**; Bartkus, KR (2017), Adjustment strategy use in minority family businesses: Differences across gender, J. Fam. Econ. Iss.	6
	Jang, J; **Danes, SM** (2013), Role interference in family businesses, Entrep. Res. J.	4
Research Group 2		
Authors, University, Country	Articles	TC
Baù, M (Jonkoping Int Business Sch, Sweden)	**Wagner, M** (2010), Corporate social performance and innovation with high social benefits: A quantitative analysis, J. Bus. Ethics	137
	Kotlar, J; Fang, HQ; De Massis, A; Frattini, F (2014), Profitability goals, control goals, and the R&D investment decisions of family and nonfamily firms, J. Prod. Innov. Manage.	111
Block, J (Trier Univ, Germany)	Doluca, H; **Wagner, M**; **Block, J** (2018), Sustainability and environmental behaviour in family firms: A longitudinal analysis of environment-related activities, innovation and performance, Bus. Strateg. Environ.	73
	Astrachan, JH; Astrachan, CB; Campopiano, G; **Baù, M** (2020), Values, spirituality and religion: Family business and the roots of sustainable ethical behavior, J. Bus. Ethics	39
Campopiano, G (Univ Lancaster, England)	**Campopiano**, G; Rinaldi, FR; **Sciascia, S**; **De Massis, A** (2019), Family and non-family women on the board of directors: Effects on corporate citizenship behavior in family-controlled fashion firms, J. Clean Prod.	31

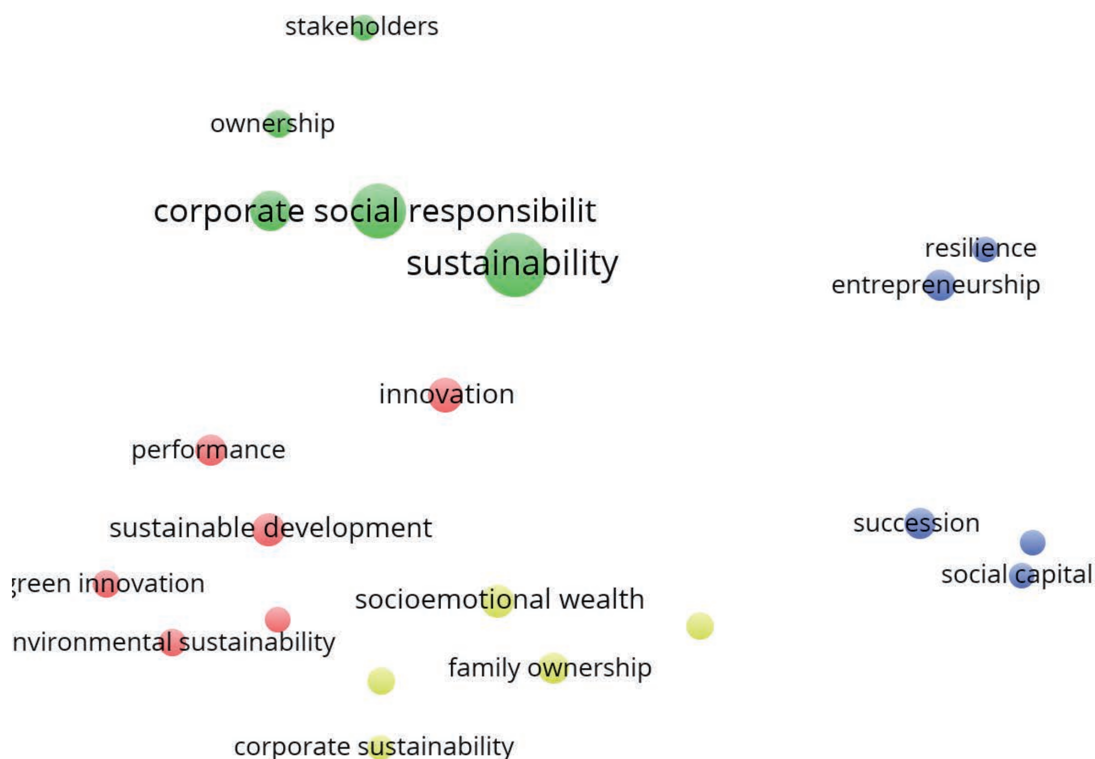
Sciascia, S (LIUC Univ Cattaneo, Italy)	Gjergji, R; Vena, L; Sciascia, S; Cortesi, A (2021), The effects of environmental, social and governance disclosure on the cost of capital in small and medium enterprises: The role of family business status, Bus. Strateg. Environ.	30
Wagner, M (Julius Maximilians Univ Wuerzburg, Germany)	Mariani, MM; Al-Sultan, K; De Massis, A (2022), Corporate social responsibility in family firms: A systematic literature review, J. Small Bus. Manag.	24
De Massis, A (Free	Miroshnychenko, I; De Massis, A (2022), Sustainability practices of family and nonfamily firms: A worldwide study, Technol. Forecast. Soc. Chang.	10
Univ Bozen Bolzano, Italy)	Baù, M; Block, J; Cruz, AD; Naldi, L (2021), Bridging locality and internationalization - A research agenda on the sustainable development of family firms, Entrep. Reg. Dev.	7
	Research Group 3	
Payne, GT (Texas Tech Univ,	Zachary, MA; McKenny, A; Short, JC; Payne, GT (2011), Family business and market orientation: Construct validation and comparative analysis, Fam. Bus. Rev.	91
Short, JC (Texas Tech Univ, , USA)	Anglin, AH; Reid, SW; Short, JC; Zachary, MA; Rutherford, MW (2017), An archival approach to measuring family influence: An organizational identity perspective, Fam. Bus. Rev.	28
Zachary, MA (West Virginia Univ, USA)	Brigham, KH; Payne, GT (2015), The transitional nature of the multifamily business, Entrep. Theory Pract.	11
	Research Group 4	
Adomako, S (Univ Bradford, England)	Adomako, S; Amankwah-Amoah, J; Danso, A; Konadu, R; Owusu-Agyei, S (2019), Environmental sustainability orientation and performance of family and nonfamily firms, Bus. Strateg. Environ.	42
Amankwah-amoah, J (Univ Kent, England)	Lartey, T; Yirenkyi, DO; Adomako, S; Danso, A; Amankwah-Amoah, J; Alam, A (2020), Going green, going clean: Lean-green sustainability strategy and firm growth, Bus. Strateg. Environ.	33
Danso, A (De Montfort Univ, England)		
	Research Group 5	
Bichler, DF (Univ Innsbruck,	Pikkemaat, B; Peters, M; Bichler, BF (2019), Innovation research in tourism: Research streams and actions for the future, J. Hosp. Tour. Manag.	55
	Clauss, T; Kraus, S; Jones, P (2022), Sustainability in family business: Mechanisms, technologies and business models for achieving economic prosperity, environmental quality and social equity, Technol. Forecast. Soc. Chang.	11
Kallmuenzer, A (Excelia Business Sch, France)	Bichler, BF; Kallmuenzer, A; Peters, M (2020), Entrepreneurial ecosystems in hospitality: The relevance of entrepreneurs' quality of life, J. Hosp. Tour. Manag.	5
Kraus, AS (Free Univ Bozen Bolzano, Italy)	Mc Fritz, M; Ruel, S; Kallmuenzer, A; Harms, R (2021), Sustainability management in supply chains: The role of familiness, Technol. Forecast. Soc. Chang.	1

Peters, SMm (Univ Innsbruck,	**Nikolakis, W; Olaru, D; Kallmuenzer, A (2022), What motivates environmental and social sustainability in family firms? A cross-cultural survey, Bus. Strateg. Environ.**	1
	Kraus, S; Kallmuenzer, A; Kanbach, DK; Krysta, PM; Steinhoff, MM (2023), An integrative framework for business model innovation in the tourism industry, Serv. Ind. J.	0

Table 7. Main keywords and themes in the SFB research field

Clusters	Keywords and frequency	Themes
Cluster 1	Sustainability (26), Corporate social responsibility (19), Corporate governance (10), Ownership (5), Stakeholders (4)	Corporate social responsibility in family business as a sustainability paradigm
Cluster 2	Entrepreneurship (6), Succession (6), Resilience (4), Small business (4), Social capital (4)	Sutaintability of the family business model
Cluster 3	Innovation (8), Sustainable development (7), Performance (6), Environmental sustainability (5), Green innovation (5)	Family business environmental sustainability orientation outcomes
Cluster 4	Socioemotional wealth (7), Family ownership (6), Environmental performance (5), Firm performance (5), Corporate sustainability (4)	Antedecents of a proactive strategy for sustainability in the family business

Figure 4. Co-word network in the SFB research field



Cluster 1. Corporate social responsibility in the family business as a sustainability paradigm

It is generally acknowledged that family businesses have some characteristics that make them different from nonfamily firms, and in this thematic area, these characteristics are considered under the sustainability research topic. That is, the underlying research question in the research field is about the internal determinants that can facilitate, or hinder, the adoption of sustainability attitudes in family businesses.

Le Breton-Miller and Miller (2016), an early reference article in this thematic, developed some propositions about the family business conditioning characteristics to be more or less likely to embrace sustainability practices due to the specificities of family business corporate governance (ownership structure and control), executive management, and board composition.

To develop the research stream, the reference point of comparison in most studies is the differences between family and non-family firms based on their intrinsic business model characteristics (Halme et al., 2020; Hou, 2019). In the fundamentals of comparison with non-family counterparts, Family business stakeholders' interests are considered as part of company values and objectives. Thus, corporate social responsibility (CSR) activities can be viewed as internal determinants of sustainability in this family business research field (Mariani et al., 2022).

Nevertheless, the heterogeneity in family business characterization determines a diffuse reality to consider family business sustainability as a separate field of study. Faller et al. (2018) reviewed the literature on the relationship between corporate social repsonsibility and different forms of equity ownership, suggesting that some family firm corporate governance characteristics are moderators in discussing the relevant benefits and motivations of shareholders in different kinds of enterprises, family, and non-family business. This is a valuable approach to resolving the debate about diversification in family business categories and their sustainability attitudes.

As an advancement in this thematic cluster, Patuelli et al.'s (2022) work is a step forward in the traditional conception of family business corporate responsibility. Their proposition was that SDGs serve as further motivators for responsibility, building on existing family and firm's values. In this way, SDGs help align a firm's strategy with global challenges.

Cluster 2. Sustainability of the family business model

Family business represent the most common business entities worldwide, contributing greatly to gross domestic product and social well-being, and play an essential role in generating employment, and contributing to communities' development (Nave et al., 2022).

Long-term family firm survival, growth, and entrepreneurship for family business ecosystem development are specific research topics in the field of family business. Successful firm management, creation, development, and business succession across generations (Bulut et al., 2021; Mallon et al., 2018; Porfirio et al., 2020; Tobak et al., 2018) are some of the key issues discussed under this thematic area. Family capital was defined as the total resources owned by the family comprising of human, social, and financial capital. Family capital contributes significantly to firm achievement and sustainability (Danes et al., 2009). Therefore, some of these articles also clarified the link between this general thematic research area and sustainable development research through the social capital and community ties of the family business ecosystem (Bichler et al., 2020; Dinger et al., 2020; Janjuha-Jivraj, 2003; Korber & Naughton, 2018).

Cluster 3. Family business environmental sustainability orientation outcomes

Environmental sustainability is not only a matter of social responsibility but also of business growth and survival, as social and legal obligations in this regard have increased. However, environmental involvement as part of the broader business sustainability agenda is of particular interest to family business because of its long-term orientation and commitment to stakeholders. This thematic area focuses on the relationship between the outcomes of environment-related activities, such as green innovation, and family business performance.

The relationship between addressing environmental issues and business value cration is not fully understood, especially in family firms (Bauweraerts et al., 2022; Dangelico et al., 2019). Research at the beginning of the expansion period revealed that scarce evidence of environmental sustainability orientation on firm performance are available as few studies have addressed the issue (Adomako et al., 2019; Doluca et al., 2018). Recent research has shed more light on this topic. Bauweraerts et al. (2022) show that the influence of green innovation adoption on value creation is contingent on two important family business specific sources of top management team diversity: generational involvement and family

involvement. Adomako et al. (2019) suggested that the impact of environmental sustainability orientation on firm performance is stronger among older firms than among younger ones. Aiello et al. (2021) analyzed the differences between family and non-family firms in the implementation of innovations in green technologies. Other studies have focused on specific relationships, such as family business motivations to develop green products (Dangelico, 2017) or on the relationship between environmental commitment and export performance (Haddoud et al., 2021). The green-lean approach of a business model to global competition and climate change has also been considered (Barth & Melin, 2018).

Cluster 4. Antecedents of a proactive strategy for sustainability in the family business

This thematic area addresses the paradox between the greater predisposition toward corporate sustainability of family business due to socio-emotional reasons (Berrone et al., 2010), and yet, the lesser proactivity in corporate sustainability initiatives that they develop, especially proactive environmental strategies (Dou et al., 2019). Dal Maso et al. (2020) show that investment in development and training practices explains part of the negative relationship between family block holders and environmental performance. Ernst et al. (2022) work helps to clarify that, as owners, family members adopt a normative corporate sustainability motivation; however, as managers responsible for the growth of the company's wealth, family members are risk-averse to proactive initiatives because they bear the residual risk of management decisions (Ernest et al., 2022).

Nevertheless, the evidence shows that positive family dynamics motivate social and environmental strategies in family businesss. (Nikolakis et al., 2022). Cordeiro et al. (2020), jointly analyzing the impact of ownership structure and board gender diversity, showed that most ownership types interact with board gender diversity to positively influence corporate environmental performance (Cordeiro et al., 2020). Studies explain why and when family firms engage in active corporate sustainability and establish a relationship with board composition, specifically, board gender diversity (Nadeem et al., 2020). Enko (2020) showed that both board size and composition enhance corporate environmental performance confirming the advisory function of boards. Lopes et al. (2017) studied some drivers, such as knowledge management and open innovation for sustainable innovation, to provoke significant changes in an organization's culture toward organizational sustainability.

4. Concluding Remarks and the Future of SFB research field

Over the last decade, there has been a growing body of research on SFB. In this context, this review aims to synthesize and organize the existing knowledge in the field through a systematic review of the literature using bibliometric techniques. The use of the SPAR-4-SLR protocol together with the combination of different analysis techniques constitutes a solid contribution to the literature. In addition, this article provides a comprehensive overview of how the research field has developed and evolved around the main research topics.

SFB is a relatively new research topic and an emerging area in family business research in the recent years. The first work identified on our dataset does not appear until 2003. The evolution of the field shows a rising trend in general publications on the subject, especially since 2017. Thus, the publication time span can be divided into two periods: the initial period prior to 2017 and the expansion period after 2017.

While SDGs, as sustainable development commitments, have only recently entered the family firm's strategic level, the rationale for such commitments have been generally considered in terms of family values and the firm's culture. In the research domains, this is reflected in the four thematic clusters identified using bibliometric analysis. Using co-word analysis, four thematic clusters were identified: Cluster 1: *corporate social responsibility in the family business as a sustainability paradigm;* Cluster 2*: sustainability of the family business model;* Cluster 3*: family business environmental sustainability orientation outcomes, and Cluster 4: antecedents of a proactive strategy for sustainability in the family business.*

These four thematic clusters provide two complementary approaches for SFB research. First, the traditional approach (Clusters 1 and 2) focused on the conditions under which the special corporate governance and ownership structures of family firms determine their intrinsic motivation for sustainability performance compared with non family counterparts. The heterogeneity of family businesses and the comparison between family and non-family firms must be considered to advance the knowledge on this topic.

In addition, the specificities of succession processes and dynamics, with or without formalized protocols, in relation to the transition toward a sustainable family business model need to be considered to advance knowledge on this approach.

The second was a renewed approach to sustainability in family business research

(Clusters 3 and 4). Following this new approach, some studies analyze why family firms engage in sustainable development, but the current challenges in sustainability open new research paths in SFB. For example, among others, the impact of the digital transition of family firms and their ecosystems on sustainable development, the value of collaboration networks to reduce irresponsible behaviors, family firm entrepreneurship initiatives for the good (meeting the Triple Bottom Line), and how to effectively communicate sustainable efforts according to environmental, social, and governance (ESG) disclosures.

This means that in-depth research needs to be undertaken about the SDGs as a new framework for SFB research, broadening the traditional socioemotional wealth approach and opening new research directions in relation to opportunities and challenges in family business sustainability.

Accordingly, authors propose the following interesting open themes:

— Impact of family businesses on SDGs

- ¤ How are family businesses specifically addressing each SDG?
- ¤ What actions are they taking to integrate sustainability principles into their operations?

— Barriers to and facilitators in adopting sustainable practices in family businesses:

- ¤ What specific barriers (family culture, lack of resources, financial constraints, and lack of awareness or knowledge, among others) face family businesses when trying to implement sustainable practices?
- ¤ What specific facilitators (women in boards of directors, organizational social capital, and community ties, among others) promote family businesses' implementation of sustainable practices? How can the roles of family members affect sustainable decision making, commitment to SDGs, succession policies, and governance structures?

- Innovation policies and their outputs as boosters of sustainability in family businesses:

- ¤ How can family businesses foster innovation in products, processes, and business models to address environmental and social challenges?
- ¤ How can innovation policies of family businesses contribute to sustainability and the achievement of SDGs?

- Sustainability values in succession processes:

- ¤ How are knowledge and values related to sustainability transmitted across generations in family businesses?
- ¤ What types of family businesses are rigorous in transmitting the commitment to SDGs?

- Measurement and reporting of sustainability impact of family businesses:

- ¤ Develop methods and tools to measure and report the contribution of family businesses to sustainability to stakeholders, policy-makers, and society in general.

These research themes offer different approaches to exploring the relationship between SDGs and family businesses management and examining them will contribute to a better understanding of how family businesses can play an active role in promoting sustainability and achieving the SDGs.

SFB literature review also bears practical Implications. The sustainability agenda 2030 and SDGs therein are motivators for family firms to behave even more responsibly, aligning firm strategy with sustainable development. However, this kind of firms, usually of small and medium sizes, are not rigorous in public disclosure and reporting on sustainability, that is, environmental, social, and governance (ESG) information. They can escape the ESG reporting obligation because of the current legal threshold of 500 employees (Directive 2014/95/EU2). The SFB literature review evidence that family businesses leaders should become conscious about prioritizing ESG reporting. Business leaders must realize that not only stakeholders but also policy-makers and society at large expect them to actively contribute to resolving global challenges. With public disclosure, family firms can gain legitimacy and strengthen their competitiveness. Their identity and reputation may also be benefit from their disclosure to public of their sustainable development contribution, transferring and robust family business brand image.

The limitations of this study lie in the dataset selection. That is, articles without the Journal Citation Report (JCR) impact and AJG classification were not considered in the present literature review. The authors considered these criteria to reduce possible duplicities with other databases and ensure quality maintenance in the state-of-the-art research field.

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International Partnership Failures in the Context of Family Small and Medium Enterprises Internationalisation

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Abstract This study aims to address the question of why the efforts of family Small and Medium Enterprises (family SMEs) to develop international partnerships fails. In particular, it draws on the network theory of internationalisation and SEW perspective and explores how family managers' interpretation of the behaviour of potential international partners can lead to the failure of the attempt to develop an international partnership in the context of family SMEs internationalisation. To do so, it conducts a multiple case study of four internationalised Greek family SMEs in the food and beverages sector. The findings suggest that family managers set strict criteria, regarding their expectations about international partners' behaviour when evaluating the potential international partners, which emerge from family managers' effort to fulfil family goals (e.g., the preservation of family harmony and family reputation), and reveal that the family managers' priority on the fulfilment of family goals can hinder the international partnership development process. These findings build upon the limited, yet important, family SMEs literature on international partnership failures and enrich previous networking theories about family SMEs' internationalisation.

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PALABRAS CLAVE
Fracaso, PYMEs familiares, Alianzas internacionales, Internacionalización, Objetivos familiares, SEW

Fracasos de las alianzas internacionales en el contexto de la internacionalización de las pequeñas y medianas empresas familiares

Resumen Este estudio tiene como objetivo abordar la cuestión de por qué fracasan los esfuerzos de las Pequeñas y Medianas Empresas familiares (PYMEs familiares) para desarrollar alianzas internacionales. En particular, se basa en la teoría de la red de internacionalización y la perspectiva SEW y explora cómo la interpretación de los gerentes familiares sobre el comportamiento de los socios internacionales potenciales puede conducir al fracaso del intento de desarrollar una asociación internacional en el contexto de la internacionalización de las PYMEs familiares. Para ello, lleva a cabo un estudio de caso múltiple de cuatro PYMEs familiares griegas internacionalizadas en el sector de alimentos y bebidas. Los hallazgos sugieren que los gerentes familiares establecen criterios estrictos con respecto a sus expectativas sobre el comportamiento de los socios internacionales al evaluar a los socios internacionales potenciales, que surgen del esfuerzo de los gerentes familiares para cumplir con los objetivos familiares (por ejemplo, la preservación de la armonía familiar y la reputación familiar), y revelan que la prioridad de los gerentes familiares en el cumplimiento de las metas familiares puede dificultar el proceso de desarrollo de alianzas internacionales. Estos hallazgos se basan en la literatura limitada, pero importante, de las PYMEs familiares sobre los fracasos de las asociaciones internacionales y enriquecen las teorías previas de redes sobre la internacionalización de las PYMEs familiares.

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1. Introduction

Establishing successful international partnerships (IPs) is of particular importance to all firms aiming to internationalise (Johanson & Vahlne, 2006). It is of even higher importance to Small and Medium Enterprises (SMEs), since international partners may yield specific benefits to them, such as to provide the necessary resources that SMEs lack (human capital, social capital, technology etc.) and, thus, they can help SMEs to enter and compete effectively in the international arena (Sandberg, 2014). Establishing successful IPs is of even greater importance to family SMEs, i.e. SMEs "in which family members have substantial ownership and take an active role in management" (Hennart et al., 2019, p. 8), aiming to enter and/or maintain themselves in the international arena. This is mainly due to the fact that the failure of the family SMEs' efforts to develop successful IPs would jeopardize not only the international but also the domestic survival of the family SME, as the entire family's wealth is at stake (Cesinger et al., 2016; Stieg et al., 2018). The reason behind this is that owners and managers of family SMEs are emotionally attached to their firms, something that in many cases leads family owners to sacrifice the family's financial wealth for the sake of the fulfilment of their business goals (Berrone et al., 2012; Gómez-Mejía et al., 2011; Moreno-Menéndez & Castiglioni, 2021). Hence, family owners and managers could sacrifice significant family resources to enter or maintain in the international arena which would jeopardize the entire family's wealth and the survival of the family SME.

Until recently international business research on IPs has mostly focused on the investigation of successful IPs (e.g., Leppäaho & Metsola, 2019; Sharma et al., 2019), whereas fewer studies have explored IP failures although research has shown that more than half of IPs fail (Nummela et al., 2016; Parameswar et al., 2021). Additionally, although limited, international business research has focused on the exploration of large multinational firms or internationalised SMEs. IP failures occur during a relationship developmental process where firms, in general, evaluate the behaviour of potential international partners (Nummela et al., 2016; Parameswar et al., 2021). Yet, in the context of family SMEs internationalisation, family managers' interpretation of the suitable potential international partners' behaviour can differ compared to SME managers' interpretations, when family SMEs evaluate potential partners (Cesinger et al., 2016; Metsola et al., 2021). This is due to the fact that family goals, family values, familial ties, succession issues and non-rational decision-making interact in family SMEs compared to SMEs in general, since these interactions do not appear in non-family SMEs (De Massis et al., 2018; Metsola & Kuivalainen, 2021).

Viewed in this light, and taking into account that international business research on IP failures in the context of family SMEs internationalisation is even more limited (Leppäaho et al., 2021; Pukall & Calabrò, 2014), this study explores how family managers' interpretation of the potential international partners' behaviour can lead to the failure of the attempt to develop an IP in the context of family SMEs internationalisation. Such research is important if we aim to understand what hinders the IP development process of family SMEs and if the effort of the family SMEs to develop an IP is different from the effort of firms with different ownership structures (e.g., non-family SMEs).

In order to meet the purpose, this study adopts the network theory of internationalisation (Johanson & Mattsson, 1988) and the SEW perspective and integrate ideas from the failure literature. We embarked on a multiple case study design, which investigated four Greek family SMEs in the Food & Beverages sector. The case study approach fitted well the purpose of our research in terms of understanding deeply the embedded process of the effort to develop IPs (cf. Yin, 2009) and the behavioural factors associated with it.

This study makes several contributions to the international business research. First, it builds upon the limited, yet important, family SMEs internationalisation literature on IP failures (De Farias et al., 2009; Leppäaho et al., 2021), answers the calls for greater understanding of the reasons for the failure of the IPs that family SMEs' develop (Cesinger et al., 2016; Leppäaho et al., 2021; Leppäaho & Metsola, 2020) and enriches previous networking theories on family SMEs' internationalisation by deepening our knowledge about the role of behavioural factors in the effort of family SMEs to establish an IP, factors that have been insufficiently examined in the family SME internationalisation literature (Cesinger et al., 2016; Metsola et al., 2021). The case study evidence shows that family managers evaluated communication attributes (e.g., inadequate informational and institutional knowledge sharing and unfulfilled financial agreements) as well as attributes of partners (opposing values) and set strict criteria regarding the fulfilment of financial agreements, the potential international partners' behaviour towards the family SMEs' products and the similarities in personal values.

The reason behind these strict behavioural criteria is the aim of family managers to fulfil family goals such as preserving the family harmony and family reputation in international markets. This is

an interesting new finding that brings to the fore that the fulfilment of family goals can hinder the IP development process, thus leading the efforts to develop an IP to fail. In addition, the better understanding of the role of behavioural factors in the context of family SMEs may enrich our knowledge of international partner selection and internationalisation processes of family SMEs and assist family SMEs' management to develop more effective and successful IPs in the future.

Second, this study differentiates its results from existing findings that have appeared in the international business and international management literature on IP failures by unravelling that contextual factors of family SMEs (e.g., the priority family SMEs place on the fulfilment on family goals) can affect international relationship building activities. Previous studies on IP failures have concentrated on multinational enterprises and have often equated family SMEs' to SMEs' internationalisation (Meschi & Wassmer, 2013; Nummela et al., 2016). Yet, this could lead to ambiguities when exploring international business phenomena, especially since decision-making in family SMEs is distinctive from that of large companies and other types of SMEs due to the idiosyncrasies of family SMEs (Barros et al., 2017; Berrone et al., 2012). Indeed, the findings of this study emphasize that the family SMEs' decision making process, when they take IP development decisions, is distinctive from the same process in large companies and other types of SMEs due to the priority that family SMEs place in the fulfilment of family goals (Berrone et al., 2012; Martínez-Romero & Rojo-Ramírez, 2016; Stieg et al., 2018). This finding can help international business scholars to better apprehend how family SMEs internationalise by establishing IPs (Cesinger et al., 2016; Leppäaho & Metsola, 2020; Pukall & Calabrò, 2014) and clarify any other potential ambiguities in the relevant IP literature (De Massis et al., 2018; Kampouri et al., 2017).

The remaining of the paper is organized as follows: we begin with the theoretical background, briefly discussing the family SMEs internationalisation through the lenses of the network theory and the SEW. Next, we discuss methodological considerations. Thereafter, we present and discuss the findings of this study. We conclude with the paper's contributions, the implications for practitioners and its limitations, and the directions for future research.

2. Theoretical Background

2.1. Family SMEs internationalisation through the lens of the network theory

The network theory of internationalisation (Johanson & Mattsson, 1988) shifts the focus from the structure of the foreign establishment (entry modes) to the relationship between the internationalising supplier and the foreign business network (entry nodes) (Sandberg, 2013) and proposes that a firm can compensate for its limited resources by developing its position in an existing network or by establishing new relationships (Johanson & Mattsson, 1988). From a network perspective, family SMEs enter foreign markets by establishing direct or indirect relationships with other nodes (e.g., other businesses or businesses networks) in the local or international market (Graves & Thomas, 2008; Johanson & Mattsson, 1988; Johanson & Vahlne, 2009). The cross-border relationships "between diverse actors based on mutually agreed objectives" (Brinkerhoff, 2002, p. 1286) with network partners (intermediaries, distributors, wholesalers, representatives) that are initially used to connect family SMEs to local firms and customers (Sandberg, 2014) are also defined as IPs.

The existing family firm (FF) internationalisation literature adopting a network perspective has focused mostly on the successful IPs of family SMEs. These studies have revealed that family SMEs with limited resources and organizational capabilities avoid risky options when they first enter a foreign market and internationalise by reactively responding to demands from foreign customers and by developing low-commitment international business relationships (Kampouri & Plakoyiannaki, 2021; Kontinen & Ojala, 2011). Such a reactive mode of decision-making on internationalisation implies that family SMEs do not plan their actions in advance, do not judge the international networking activities by referencing to clear goals, do not follow formal decision rules, and do not compare alternatives (Child & Hiesh, 2014). On the contrary, larger FFs which have the resources and the organizational capabilities that are necessary to internationalise, carefully select international partners to develop high-commitment relationships with them and, hence, those FFs carefully evaluate the potential international partners' characteristics (e.g., Kao & Kuo, 2017; Kao et al., 2013). The decision-making is goal-directed and more rational in the sense of being guided by the assessments of whether a potential course of action satisfies aspiration levels (Child & Hiesh, 2014). However, regardless of the relationship type (high or low-commitment relationships), many IPs are failing (Oerlemans et al., 2007).

The network perspective has been widely used in the industrial marketing and international business literatures. Yet, it focuses mostly on the factors that can lead to the establishment

of successful relationships, without explicitly mentioning the behavioural factors that can lead to IP establishment failures and/or their link to family SMEs idiosyncrasies (e.g., SEW preservation tendencies) that may drive family SMEs' behaviour when they develop an IP (Cesinger et al., 2016; De Farias et al., 2009; Leppäaho et al., 2021; Pukall & Calabrò, 2014).

IP failures: The role of behavioural factors

IPs are created though a developmental relationship process of various stages (Andersen & Buvik, 2002; Brouthers et al., 1995). Although the literature is not entirely consistent with regard to the number and type of stages that are involved in establishing IPs, most authors agree that screening candidate partners is an important stage in this process (Duisters et al., 2011). Screening of the potential international partners occurs in the effort to establish an IP (also known as exploration stage) but it also continues after selecting one and before the firm decides to develop further commitment (Andersen & Buvik, 2002; Dwyer et al., 1987).

To illustrate, initially the potential international partners do not know each other well and there is high uncertainty. Consequently, firms aiming to expand internationally try to understand if the potential foreign partner is a suitable one or not. In doing so, firms usually filter out potential international partners by interpreting, giving meaning and making causal explanations on international partners' attributes (structural or behavioural), having as primary focus the success of their business goals (Andersen & Buvik, 2002; Parameswar et al., 2021).

IP failures refer to the "unintended/unplanned termination or (perceived) unsuccessfulness of a relationship" (Oerlemans et al., 2007, p. 197). IP failures do not only mean termination of an -up to a certain point- successful relationship. Yet, it is mostly seen as the absence of (continuous) success and it implies international relationship instability or unsatisfactory goal accomplishment as well (Oerlemans et al., 2007, p. 197).

IP failures can result from external factors, often beyond the firm's control, such as technological shifts, and from internal factors, such as managerial incompetence (Nummela et al., 2016; Welch & Welch, 2009). Entrepreneurs may suffer from the lack of necessary resources, such as human capital, or even from not using the necessary resources wisely, hence increasing the likelihood of IP failure (Nummela et al., 2016).

IP failures can also result from under-performance, strategic change and personal disengagement of the entrepreneur (Matthyssens & Pauwels, 2000; Welch & Welch, 2009). It is possible that the entrepreneur may want to terminate the IP because of the opportunistic hazards as each partner tries to maximize its own individual interests instead of the collaborative ones (Park & Ungson, 2001). Such opportunistic hazards may influence negatively the level of trust between business partners and their commitment to the development of the IP, hence increasing the likelihood of failure.

External factors (e.g., governmental restrictions), structural factors (e.g., the limited financial strength of a potential international partner) and/or behavioural factors (e.g., limited information sharing) can also affect not only already established IPs but also the effort to establish a new one. Regarding the behavioural factors that can affect IP development, the international marketing literature highlights the important role of communication attributes (e.g., participation in planning and goal setting, the extent and the quality of information sharing) and attributes of the partners (e.g., interdependence, trust) (Kauser & Shaw, 2004; Mohr & Spekman, 1994). Nevertheless, existing FF internationalisation studies have missed to discuss the behavioural factors of failures in the effort to establish an IP in the context of family SMEs internationalisation (e.g., De Farias et al., 2009; Leppäaho et al., 2021). For example, De Farias et al. (2009) has brought into light that a disharmony between the export company's objectives and its partner's objectives can cause a fatal rupture in the IP development process, yet they do not mention how or why this disharmony exists. More recently, Leppäaho et al. (2021) take a network perspective and identify that when the new international partner is not a good fit with the firm, the FF can terminate the IP, thus leading to an IP failure. Nevertheless, the same authors do not focus on dyads but on whole international networks, and do not explain why a potential international partner may not be a good fit from a behavioural perspective (Leppäaho et al., 2021). However, decision-making in family SMEs differs compared to other types of firms with different ownership structures mostly due to family idiosyncrasies, such as SEW preservation tendencies (Barros et al., 2017; Berrone et al., 2012). As a result, behavioural factors that lead to IP development failures may be different for family SMEs in the context of their internationalisation. An understanding of those behavioural factors may illuminate how and why family SMEs select their international partners. Such knowledge is important since it may help family SMEs' management to avoid making incorrect decisions when developing relationships with international partners.

2.2. The SEW perspective

The concept of SEW, i.e., the non-economic rewards that owners may derive from their family SMEs, such as the maintenance of control and/or the identification of the family with the family SME (Cesinger et al., 2016; Metsola et al., 2021), was initially introduced by Gómez-Mejia et al. (2007) to explain the differences among FFs and non-FFs in a variety of phenomena and strategic decisions. It was created as an extension to the Behavioural Agency Model (Gómez-Mejia et al., 2011; Wiseman & Gómez-Mejia, 1998) that posits that firms' choices depend on the reference point of key decision makers, who aim to preserve the endowment in the firm (Wiseman & Gómez-Mejia, 1998). According to Berrone et al. (2012), the SEW endowment includes five dimensions: 1) the ability and desire of family members (usually the owner) to exert control and influence over the FF's strategic decisions, 2) the FF's social relationships, i.e., the sense of belongingness which is shared not only among family members but also among non-family employees and which promotes a sense of stability and commitment to the firm, 3) the strong identification of the FF with the family name (e.g., family members seek to perpetuate a positive family image and reputation), 4) the intention of handing the business down to future generations, and 5) the role of the family members' emotions that permeate the FF (Berrone et al., 2012; Metsola et al., 2020).

Gómez-Mejia et al. (2007) argued that preserving SEW endowment is critical for the family and shapes the framing of problems, becoming the primary reference point for guiding strategic decisions and choices. When there is a threat to that endowment (a potential SEW loss) or an opportunity to enhance it (a potential SEW gain), the family firm is willing to make decisions that may not be driven by an economic logic. In fact, the family members are willing even to put the firm at risk if this is what it would take to preserve that endowment (Gómez-Mejia et al., 2007).

Acknowledging the importance of IP establishment by family SMEs and FFs' idiosyncrasies with regard the SEW preservation tendencies, researchers have recently focused on the exploration of the link between international business relationship decisions (e.g., the selection of high or low-commitment international business relationships) in internationalisation and SEW goals (Debellis et al., 2021). To illustrate, research has shown that family SMEs aiming to enter foreign markets prefer to develop low-commitment instead of high-commitment international business relationships due to their lack of resources, their risk avoidance attribute, the fear of potential economic losses (Eberhard & Craig, 2013; Kontinen & Ojala, 2011; Moreno-Menéndez & Castiglioni, 2021; Scholes et al., 2016) and the fear of not being able to maintain control of the foreign business (Pukall & Calabrò, 2014). Although few family SMEs choose to develop high-commitment international business relationships to confer the highest control (e.g., Boers, 2016; Sestu et al., 2018), these family SMEs usually have already gained extensive international experience and organizational capabilities in order to do so (Tsang, 2020). Research has also highlighted that when family SMEs develop IPs, they try to maintain them mostly for the benefit of the preservation of the family harmony (Scholes et al., 2016).

Nevertheless, existing FF internationalisation studies have missed to discuss the role of SEW in failures that may occur in the effort to establish an IP in the context of family SMEs internationalisation.

3. Methodology

The purpose of this study was met using the case study method (Yin, 2009). This approach was viewed as the most suitable method for this research since it allows a) to capture the "how" and "why" IPs developed by internationalised family SMEs were terminated or perceived as unsuccessful and b) to confront theory with the empirical world (Fletcher et al., 2016). It further offers a contextualised account, helps to unpack the human behaviour and to illuminate the complex, under-investigated phenomenon of family SMEs' international partner relationship development failures by facilitating the collection of rich data from multiple sources of evidence (Welch et al., 2022).

3.1. Case selection

Country and case selection occurred following a purposeful and particularly criterion sampling (Fletcher & Plakoyiannaki, 2011). More specifically, we selected Greece, whose economy relies on family SMEs and whose language (Greek) is not spoken anywhere else, except Cyprus. In Greece, most of the firms are owned and managed by a family (Family Business Survey, 2020). Thus, Greece provided a theoretically interesting context in that it heightened our sensitivity towards the phenomenon under study, namely the role of behavioural factors in family SMEs when evaluating a potential international partner (Johns, 2006).

Multiple case study design was chosen to address the purpose of the study. Despite the popular view that the more cases the better (Eisenhardt & Graebner, 2007), we recognize the importance

of the limited number of cases in the generation of deep contextualized insights of investigated phenomena (Dubois & Gadde, 2002; Dyer & Wilkins, 1991). In this study, we incorporated features of single and multiple case designs and, following a criterion sampling strategy (Fletcher & Plakoyiannaki, 2011), we selected four Greek family SMEs operating in the Food & Beverages sector. Each case was also selected given their informational redundancy (Emmel, 2013).

The selected family SMEs met the following criteria: 1) had at least one IP that had been terminated, 2) operated in the Greek Food & Beverages sector, and 3) had a family ownership of 100%. The aim was to study firms that had at least one IP terminated in order to collect retrospective accounts on "how" and "why" family SMEs decided to terminate international partner relationships (Craig-Lees, 2011). Context sensitivity is also important (cf. Dimitratos et al., 2010), hence the cases were drawn from a single industry in order to limit the effect of external factors on this study. The Greek Food & Beverages sector was selected given its dynamic nature and its growth potential in foreign markets (Karipidis et al., 2020). Moreover, this study aimed to include family SMEs with ownership of 100% because this type of firm places a priority to the preservation of SEW tendencies (Mensching et al., 2016). It should also be highlighted that this study examined one member of the international business relationship (the family SME) since dissolution is more often generated unilaterally (Dwyer et al., 1987).

The criterion sampling strategy generated a pool of 20 family SMEs. To generate this pool of family SMEs we have used databases from the Greek Exporters Association and the Panhellenic Exporters Association. All 20 family SMEs were contacted through telephone or e-mail and nine agreed to participate in this study. From those nine family SMEs, only four were willing to discuss with us on failures in their IPs. The case study firms are of medium (firm A) and micro size (firms B, C, D) that have developed IPs with wholesalers and/or distributors. They internationalise by exporting branded (firms A, B and C) or not branded products (firm D) (see also Table 1).

Table 1. Key information on the investigated family SMEs

Family SMEs	Size	Exports of branded (or not) product	International partner relationships with …
Firm A	Medium	Branded	Exclusive distributors
Firm B	Micro	Branded	Non-exclusive wholesalers
Firm C	Micro	Not branded	Non-exclusive wholesalers
Firm D	Micro	Branded	Non-exclusive distributors

3.2. Multiple sources of evidence

Data were collected in 2017 from multiple sources, including 18 in-depth, open-ended personal interviews, archival records and examination of the family SMEs' documents and publications (Eisenhardt & Graebner, 2007; Yin, 2009). The personal interviews were all tape-recorded and ranged from 60 to 90 minutes. Participants were invited to reflect on the international partner development process and to tease out instances of failure that we further explored in the interview process.

In each firm the owner (usually the founder of the firm) or the CEO was contacted, constituted the primary respondent of the study and was requested to identify other key respondents who were included in this research using snowballing sampling (Miles & Huberman, 1994). These respondents were chosen due to their direct experience with the family SMEs' international partnership activities (cf. Polkinghorne, 2005). Such a selection enhanced the collection of nuanced accounts associated with the purposes of the study.

Additionally, web pages and documents (e.g., trade press publications and internal presentations) were organised and carefully analysed, following the process discussed by Welch (2000), for content and context in order to understand the history of each firm as well as to triangulate with the insights gleaned from the interviews (Yin, 2009) and thus to increase the quality of our evidence.

3.3. Data analysis

In the current research, data analysis was conducted in two phases: first, within-case analysis that included write-ups for each investigated family SME and, second, cross-case analysis that involved the identification of cross-case patterns (Dubois & Gadde, 2002; Miles & Huberman, 1994) across our dataset. In particular, we conducted essential tasks of qualitative data analysis, namely categorisation, abstraction and integration (Spiggle, 1994).

In the categorisation phase, we coded and analysed data emerging from interviews and secondary data. In vivo coding was used in order to organise the data and to facilitate the identification of themes across the different sources (Saldaña, 2013). We then employed

thematic analysis in order to unveil similar thematic aspects across data sources. In the following stage of data analysis, namely the abstraction stage, we linked the themes into conceptual categories (cf. Dimitratos et al., 2010; Spiggle, 1994). In this stage, by employing the internal homogeneity and external heterogeneity criteria (Patton, 1990), we reviewed and refined the emerging themes so as to secure the quality of the findings.

In the final stage of data analysis, i.e. integration, we connected the empirical findings with existing theory. Particularly in this phase, it was crucial to examine the emergent themes and concepts in light of the relevant literature so as to illuminate aspects of international partner relationship development failures of the internationalised family SMEs that have not been the subject of prior theorising.

In order to ensure the quality of the case study findings, the authors followed numerous practices recommended in the literature, such as theory to structure the list of interview topics and between-method triangulation that relied on the use of multiple methods of data collection, such as interviews, observation and archival data. Criterion sampling of the case study aimed at phenomenal variation (Sandelowski, 1995) that allowed the authors to expand the existing literature (Colquitt & Zapata-Phelan, 2007).

The aim of the current study was not (statistical) generalisation, but understanding of the phenomenon of family SMEs' international partner selection (analytic generalisation). We sought to generate a localised account on the behavioural factors associated with the international partner selection of Greek family SMEs in the Food & Beverages sector.

4. Findings

All investigated family SMEs produce and market food products in Greece. They all have managed to conduct direct and/or indirect exports by developing successful IPs with foreign wholesalers, agents and/or distributors. In particular, firm A is active in the international arena for more than 80 years and exports branded products to European countries, USA, Dubai, Australia and others. The last few years the family owners decided to be more active in the international arena by developing only exclusive IPs with distributors in all existing and new foreign markets. Firm B is active in the international arena for more than 10 years and has developed successful non-exclusive IPs with wholesalers and/or distributors. The firm exports branded products in European countries, Singapore, China and USA and aims to enter in other foreign markets as well. Firm C is also active in the international arena for more than 10 years. It has already established successful non-exclusive IPs in Saudi Arabia and China and aims to extend its international operations to multiple countries by exporting mostly non-branded products. Firm D from 2004 until 2008 had conducted sporadic exports of non-branded products to Germany and other European countries through non-exclusive distributors and wholesalers. Yet, during Greece's financial crisis in 2009, the family owners decided to stop the firm's internationalisation activities, mostly due to its limited resources and the limited financial support from the state for such international activities, and to focus on the domestic market. The last couple of years the owners tried to develop an IP in Belgium in order to export branded products but the effort was not successful.

All investigated family SMEs throughout their internationalisation activities combated with IP failures, which made them to change their internationalisation strategies (firms A and D) and to learn from past mistakes (firms A, B, C and D). The reasons behind their IP failures had been both external and internal factors, which is in line with the existing SME literature (Nummela et al., 2016; Welch & Welch, 2009). In particular, in the effort to develop IPs, family owners paid particular attention to the structural characteristics of the potential international partner firms (such as financial strength and stability, reputation and international network) in order to avoid wasting their limited resources, as well as to the behaviour of the decision-makers (e.g., owners and managers) in the potential international partner firm since they first communicated with them. By assessing the structural characteristics of the potential partner firms and by screening the decision makers' behaviour, the management of the investigated firms decided whether they will develop more commitment relationships with them or not.

4.1. Interpreting the potential international partners' behaviour

The investigated family SMEs participated in trade exhibitions in order to meet potential foreign partners and customers. Nevertheless, in all cases it was the potential international partner that first communicated with the family SMEs. After the first screening of the structural characteristics of the potential international partner firms (e.g., international business network, international reputation), the family SMEs focused on the behaviour of the decision-makers of the potential international partner firms (usually the managers who communicated with the investigated family SMEs). In particular, the four case study firms evaluated communication

attributes, such as informational and institutional knowledge sharing, i.e., "knowledge that concerns the macro-environment institutions in the foreign country, such as culture and local government" (Sandberg, 2014, p. 22), and attributes of the potential partners, such as their owners' similarity in personal values with the values of the Greek family SMEs owners. As quoted below:

"We continuously get multiple messages from our partners in our target countries about our products, packaging etc. The information we get from them is extremely important for us, since we can understand what our customers want and, thus, we can adapt to their demands. Different people from different cultures have different needs and preferences. ... In case we realise that we do not get the right information, we immediately terminate the relationship under development."

(Export marketing manager and family owner, Firm A)

"Since we do not have specialised knowledge on each foreign market, we want our partners to know the foreign market. We are selecting partners that know the local customers' needs and the countries' restrictions from the government. For example, there are some countries that require specific standard certifications. If we do not know about them, we cannot enter in these markets successfully. If our partners do not have this knowledge, why should we consider developing an international partnership with them?"

(CEO and family manager, Firm B)

The conservative company culture in family SMEs B, C and D, in combination with informational obstacles, made family managers to terminate the potential IPs very early in the IP development process. Firm A, since it was founded, had a more active company culture with regard to its internationalisation activities and throughout the years the firm managed to save the needed resources to expand its international activities compared to the other three investigated family SMEs.

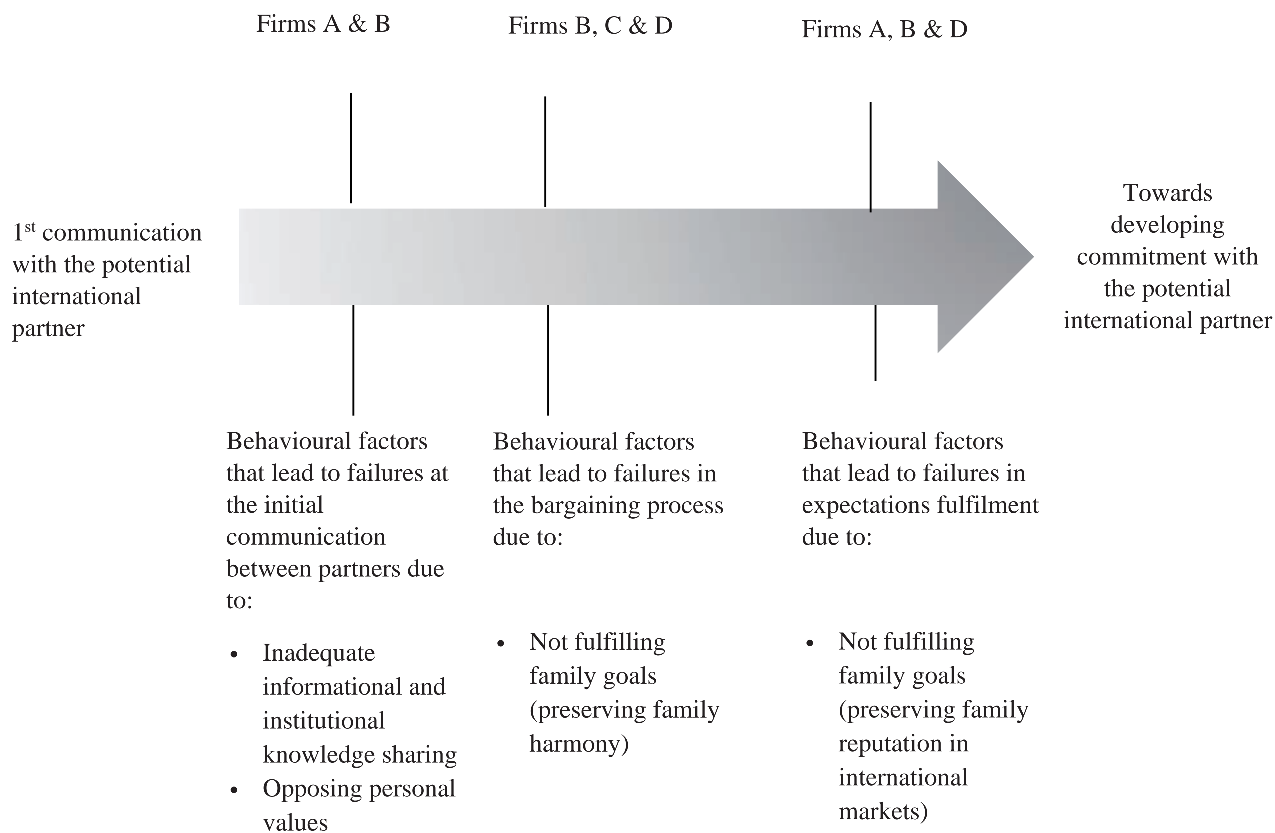
Nevertheless, all the investigated family SMEs illustrated that *informational* and *institutional knowledge sharing* played a significant role in establishing IPs. The quality of information is important since meaningful and timely exchange of information can result in more trusting relationships between potential international partners, thus helping family owners to realise mutual benefits by reducing misunderstandings (Dwyer et al., 1987). Effective information sharing is associated with committed and trusting relationships as well, while it reduces the potential for conflict (Anderson & Narus, 1990). These findings are in line with the SMEs literature highlighting that communication attributes can affect the IP development process (e.g., Mohr & Spekman, 1994). Nevertheless, in the context of family SMEs, our findings provide further evidence that family SMEs also place particular emphasis to the *personal values* of the potential partners' decision-makers and compare them with their own. As quoted below:

"We have mutual goals and mutual respect with our partners. Since we are a small firm, we depend on our partners in order to survive in the international arena. Therefore, we aim at finding partners who are honest, reliable and they understand what we are trying to do. ... In case there are main differences in these issues, we cannot continue to develop the relationship. … To illustrate, we prefer partners that we share the same understanding about the quality of a product. We believe our product is of high quality and its price is high due to the high production costs and our hard work. In case potential international partners do not understand that quality is all that matters to us, and that our products are of high quality, they will insist on price reductions which we do not accept…"

(CEO and family owner, Firm B)

In screening the behaviour of the decision-makers of the potential international partner firms, the investigated family SMEs set strict criteria when they aimed to further deepen the international business relationship under development. In particular, opposing personal values (e.g., honesty, reliability, similar way of thinking) restricted the IP establishment in all investigated family SMEs. In fact, as the above quotation illustrates, in case there were opposing values, the IP development process did not proceed. On the contrary, in case there was similarity in personal values, the developing relationship proceeded in the bargaining process stage in two of our investigated family SMEs (Figure 1).

Figure 1. Failures of the international partnership development of the investigated family SMEs



In fact, firm A (the largest of the investigated family SMEs) and firm C (which exported non-branded products) proceeded in the bargaining process and negotiated the quantities that could be exported, whereas firms B and D hesitated to enter in a bargaining process and negotiate the price of the products they export. As quoted below:

> "Our business partner asked to pay us at a later date twice. This was not acceptable since we did not want to take the risk of losing money, given that our family lives from it. We had clarified it since our first communication and hence we considered this effort to develop an IP as a failed one."
> (CEO and family owner, Firm C)

In the case of family SMEs C and B, the high-production cost that escalated the product price and the difficulties in acquiring quality certificates (i.e. ISO 22000, HACCP) and product guarantees that would ensure product acceptance in international markets, led their efforts to develop IPs to be terminated during the bargaining process, since the international partners asked for a price reduction or to pay at a later date.

Furthermore, it should be noted that although family SMEs A and C were more positive in embarking in a bargaining process, they also did not accept a price reduction or payment at a later date since their families' livelihood depended on that revenue. As quoted below:

> "After a few initial export sales, the international partner asked for a price reduction. We felt angry when we were asked to reduce the price because we had already made a price reduction since our first sale and we couldn't do another one due to high production costs. When he did it again we stopped this emerging cooperation"
> (CEO and family owner, Firm C)

Our case study evidence showed that the family owners in most investigated family SMEs did not have the adequate financial resources to support both the firm in its internationalisation activities and the family. Hence, they set strict financial criteria when evaluating a potential international partner. In case the potential international partner asked to pay at a later date or for a discount, the family SMEs' owners ceased the communication with them. Nevertheless, the strict financial criteria that family SMEs had set may have resulted in the failure of family SMEs to expand to foreign markets or to find new international sales opportunities and, therefore, could have restricted the family SMEs'

international expansion.

The reason behind the strict financial criteria had been also the family SMEs' goal to preserve the harmony of the families which owned the family SMEs. As quoted below:

> "Moreover, during that time my brother intended to get married. … We were forced to re-schedule the wedding in order to be able to pay for the changes in the packaging the international partner asked for. My brother's bride had been furious about this … when we were ready to send the pallet with our products they asked for a discount on the price. So, we felt that this partner was not trustworthy given that the verbal agreement was different with regard to the prices and quantities for exportation. … However, we couldn't risk reducing our prices. Otherwise, we would have lost the financial capital necessary for the survival of our family and our firm and also we would have many arguments inside the family."
>
> (CEO and family owner, Firm D)

The case study evidence fleshes out the fact that not fulfilling family goals could hinder the international partner development since the family harmony would be at stake. The family's financial wealth, but also the family's harmony, were important to all investigated family SMEs. In case the financial criteria had been fulfilled, the investigated firms would have aimed at deepening the relationship with the potential international partners. Prior to the development of more committed relationships with them, family owners continued to screen the behaviour of the potential international partners with regard to the product placement. As quoted below:

> "Our international business partner did not handle the promotion of the product in an appropriate way… The placement of the product was not the one we expected… Nevertheless, our partners should respect our brand… The brand is the image of our family…"
>
> (Export Manager and family owner, Firm A)

The aforementioned quotation highlights that the placement of the brand was an important goal especially for those family SMEs that were exporting branded products, since they link the family's name with the brand. Family owners aimed to perpetuate a positive family image and they linked the brand name with the family's reputation in the foreign markets. This family goal led the owners to re-evaluate their potential international partners and to terminate others that were not perceived as successful for the family SME. This re-evaluation enabled family SMEs to learn from past mistakes (Baumard & Starbuck, 2005) and to develop new criteria when selecting a partner to enter new international markets. That helped them to build new and successful IPs in other foreign markets (Cesinger et al., 2016). As the owner of family SME A highlighted:

> "We have learned from past mistakes and we are now very careful when selecting international business partners. … We select partners that respect our brand and this is important for us since the brand is the image of our family. … Would you let anyone to behave to your child in an inappropriate manner? We adopt the same line of thinking when evaluating the behaviour of others towards our brand. … We have experienced international growth the last years and this is because we have managed to identify international business partners that understand what we want … we prefer to make slow but steady internationalisation steps."
>
> (CEO and family owner, Firm A)

To conclude, family owners chose to terminate their IPs when they realized that the behaviour of the international partner towards the product or the brand was not the one expected. The family SMEs studied expected from the international partners to behave to their brand and their products in the same manner as the family did, i.e., to appreciate the brand and to promote it accordingly. In case the owners of the investigated family SMEs realised that an international partner did not respect the brand and the product, they reduced their export transactions with the specific foreign partner, even if the financial agreements were fulfilled.

5. Discussion and Conclusions

This study examined, from a network and SEW perspectives, why efforts of family SMEs to develop IPs fail. The findings of the empirical examination of the four internationalised family SMEs' enabled us to better understand the behaviour of internationalised family SMEs in their effort to develop IPs and to clarify any ambiguities in the international business literature with regard to the family SMEs' decision-making in their IP building activities (De Massis et al., 2018). To avoid confusion, we point out that existing international business and international marketing literature that examines IP failures mostly focuses on high-commitment IPs developed by large multinationals or SMEs and does not explicitly mention if the results of those studies refer to family SMEs or not (e.g., Nummela

et al., 2016; Zineldin & Dodouva, 2005). Bearing this in mind, and also taking into account the family SMEs' idiosyncrasies (Berrone et al., 2012; Barros et al., 2017), the reader could be blurred about whether the existing findings concerning IP failures apply to family SMEs or not.

In this study, we clarify this ambiguity by bringing into light that IP development failures may occur in family SMEs due to inadequate informational and institutional knowledge sharing, opposing values and unfulfilled financial agreements. Hence, in line with the existing SME literature, we highlight that in family SMEs financial motives drive decision making in international partner selection (cf. Meschi & Wassmer, 2013; Shah & Swaminathan, 2008; Zineldin & Dodouva, 2005). Nevertheless, our findings flesh out that family goals can further affect the IP development process. In particular, this study reveals that the fulfilment of the family SME owners' goals (family harmony and family reputation in international markets) drove the decision-making underlying the development of IPs. The fulfilment of the family goals made family SMEs to set strict behavioural criteria when deepening relationships with the international partners after the evaluation of structural criteria (e.g., financial strength of the international partner). This is an interesting finding that for the first time brings to the fore that the fulfilment of family goals can affect the development of IPs and hence the internationalisation of family SMEs.

With regard to implications for practitioners, the findings of this study could serve as a roadmap for the management of internationalised family SMEs which could help them to better understand where to focus when evaluating potential international partners and/or to avoid certain pathways that may lead their efforts to develop IPs to fail. More specifically, the family managers of family SMEs' should pay attention to the values of the managers of the potential foreign partner firms, from the very beginning of the IP development process in order to decide as early as possible whether it is worth for the family SME to further develop the partnership or discontinue it. In this manner, the family SME management will cease spending its limited time and money resources on a destined to fail IP at early stages of its development and devote them to other alternative and more promising IPs. Without this knowledge, family SMEs aiming to enter foreign markets by forming IPs would sacrifice significant family resources in the effort to establish them and this could jeopardize the entire family's wealth and the survival of the family SME.

Moreover, our findings could also be helpful to the management of firms from abroad who seek for suppliers in other countries and these suppliers happen to be family SMEs. In such cases, it would be useful for the management of these firms to know that the family managers of the family SME focus from the very beginning of their communication on their structural and behavioural characteristics and interpret them according to their idiosyncrasies as well as their family's goals. Then the owners of the family SME take their interpretations of the potential foreign partner's characteristics very seriously into consideration when they decide whether they will continue developing the partnership or not. Consequently, if these firms consider the exporting family SME as a valuable supplier and partner, they should adjust their behaviour accordingly. For example, the management of the foreign firm should make clear and convince the family SME's management that they know very well how their country's market operates as well as the local buyers' preferences and, therefore, they can provide the family SME with all the information they need about the local market and its institutional peculiarities. Such behaviour will make the owners-managers of the exporting family SME feel safe to deepen and strengthen the relationship with the foreign partner and turn it into a successful and long lasting IP. In this manner, the foreign supplier-seeking firm will not waste time and money resources in an effort to develop an IP that will eventually turn out to be a failure.

With regard to its limitations, this study delimits the investigated firms to a specific type of FFs, namely family SMEs, in which family ownership is 100% and, therefore, the intensity of family idiosyncrasies (e.g., family values, the preservation of SEW) is high (Arregle et al., 2019; Pongelli et al., 2016). Hence, this study does not consider IP failures of other types of family SMEs with lower shares of family ownership. Future studies should consider investigating IP development failures within the context of various types of family SMEs, since there seems to be heterogeneity between family SMEs with different ownership structures and different levels of intensity of SEW (e.g., Mariotti et al., 2021; Rienda & Andreu, 2021; Wright et al., 2014).

Also, this study considered failures of low-commitment international business relationships. Although most family SMEs choose low-commitment international business relationships during their internationalisation venture (Kontinen & Ojala, 2011), there are large FFs that choose to develop high-commitment international business relationships (e.g., Kao & Kuo, 2017). Future studies should investigate behavioural factors that restrict the IP development process within the context of larger

FFs that choose higher commitment international business relationships. Moreover, this research draws on family SMEs from a particular country and sector. Although we purposefully investigated one single sector and country in order to limit the effect of other contextual factors, future research may investigate IP development failures of family SMEs from various sectors located in the same country as well as from various sectors and located in different countries. Finally, it should be noted that this study reveals certain ways that the family managers interpret the behaviour of potential international partners and which, in turn, can lead to IP development failures in the initial effort to establish one. Nevertheless, this study does not reveal behavioural factors which can lead to IP failures in the later stages of the relationship building process. Future research should investigate behavioural factors of internationalised family SMEs in the later stages of the IP development process of family SMEs (e.g., in the commitment stage) and consider if SEW preservation tendencies could affect the length of the IPs.

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Family Firms and Research and Development Investment: The Moderator Effect of the Board Composition

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Abstract From the perspective of agency and socio-emotional theories, the family firm's innovation behavior differs from non-family companies. We investigate the relationship between the family element and Research and Development (R&D) investment, and how the moderating effect of the board composition affects this relationship. Using a panel data composed by 1,284 observations-year during the period 2004-2014 from Argentina, Brazil, Chile and Mexico, empirical results show that family firms increase R&D investment when the moderating effect of the board composition is included. For instance, larger boards, the independence of the board, the COB-CEO duality and female directors motivates to a higher R&D and capital expenditures. These results confirm that board composition constitutes a monitoring mechanism of family members' actions, which leads to an increase of innovation strategies and suggest that family firms promote a long-term orientation with the purpose of preserving the wealth for next generations. This research contributes to the international literature analyzing a region not explored before and characterized by a weak institutional framework and lower rates on R&D investment compared to other emerging countries.

CÓDIGOS JEL
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PALABRAS CLAVE
América Latina , Empresas Familiares, Investigación y Desarrollo, Riqueza Socioemocional, Teoría de la Agencia

Las empresas familiares y la inversión en investigación y desarrollo: El efecto moderador de la composición del consejo

Resumen Desde la perspectiva de las teorías de la agencia y socio-emocional, el comportamiento innovador de la empresa familiar difiere del de las empresas no familiares. Se investiga la relación entre el elemento familiar y la inversión en investigación y desarrollo (I+D), y cómo el efecto moderador de la composición del consejo incide en esta relación. Se utiliza un panel de datos conformado por 1,284 observaciones-año durante el periodo 2004-2014 para Argentina, Brasil, Chile y México. Los resultados econométricos muestran que las empresas familiares incrementan la inversión en I+D cuando se incluye el efecto moderador de la composición del consejo. Por ejemplo, consejos de mayor tamaño, la independencia del consejo, la dualidad COB-CEO y la presencia de mujeres en el consejo motivan a una mayor inversión en I+D y gastos de capital. Los resultados confirman que la composición del consejo constituye un mecanismo supervisor de las acciones de los miembros de la familia, lo que motiva a un incremento en la adopción de estrategias de innovación, y sugiere que las empresas familiares promueven una orientación de largo plazo con el fin de preservar la riqueza para las próximas generaciones. Esta investigación contribuye a la literatura internacional estudiando una región no explorada en la literatura previa y caracterizada por un marco institucional débil y menores tasas de inversión en I+D en comparación con otros países emergentes.

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1. Introduction

Family firms play a strategic role in the economic development in countries, since about 85% of companies around the world have had their origin in a family. Family firms are especially important in emerging markets, since they represent 85% in South-East Asia, 75% in Latin America, 67% in India and around 65% in the Middle East (Briano-Turrent, et al., 2020). The market liberalization in Latin America led to an increase in the presence of family firms, showing a strong growth in the last ten years, and generating the 60% of the GPD and 80% of employment in the region (Christensen-Salem et al., 2021; Herrera-Echeverri at al., 2016). In Latin America, private and publicly traded corporations are controlled and owned by families and they face volatile macro-economic policies, political risk, high social and economic inequity, informal economies, among other social challenges (Berrone et al., 2022; Gómez-Mejía et al., 2023; Vazquez, 2017).

Although family firms research have taken great relevance around the world, their implications on the economic value generation through strategies oriented to innovation behavior is limited (Calabrò et al., 2019; Gonzales-Bustos et al., 2020). Innovation becomes a crucial mechanism to develop and maintain the competitive advantages in the ongoing turbulent market (Gonzales-Bustos et al., 2017) but also a key strategy to ensure the company's long-term survival (Schmid et al., 2014; Torchia et al., 2011). A higher research and development (R&D) investment contributes to the country's economic growth and long-term success, which motivates to increase the development and society's quality of life (Kraus et al., 2012). Prior research suggests that firms are different in corporate governance structure and mechanisms, and these differences may partially explain the innovative behaviour adopted by companies (Gonzales-Bustos et al., 2020). However, there are still several gaps and mixed findings regarding how family involvement and contextual factors may impact the innovation activities in family firms (Canale et al., 2023; Kammerlander et al., 2020).

The focus of this study is Latin America, a context characterized by inefficient government, heavy bureaucracy, corruption, high tax rates, political instability, and the low quality of institutions (Fernández-Torres et al., 2019; Transparency International, 2020). Large domestic conglomerates dominate the business sector in the region and the great majority of these groups are family firms with several generations, which hold ownership or leadership positions (Briano-Turrent et al., 2022). From a business dimension, the region is characterized by undeveloped legal, market, and institutional frameworks (Khoury et al., 2015). Thus, Latin America provides a unique context to advance in management and family firms theories (Gómez-Mejía et al., 2023). This paper aims to analyze the relationship between the family element and R&D investment, and how the moderating effect of the board composition affects this relationship, in a sample composed by family and no family firms.

This research contributes significantly in four main dimensions. First, the family culture in business is acknowledged as a possible source of competitive advantage for innovation, since these are hard-to-duplicate resources (Dibrell & Moeller, 2011). Second, Latin America has shown a substantial economic growth over the last two decades and has been home to local and multinational firms (Cadena et al., 2017; Vassolo et al., 2011). However, most of the research has been developed for Anglo-Saxon and European countries (De Massis et al., 2012); consequently, more research is desirable for Latin American landscape, especially as family firm innovation processes and outcomes are likely to differ from governance and ownership archetypes due to the influence of family ownership, risk taking and investment horizons (Aguinis et al., 2020; Lumpkin & Brigham 2011). Third, this study adopts the agency and socio-emotional theories in a context characterized by a weak institutional framework and lower rates on R&D investment compared to other emerging countries. Finally, we compare the empirical results between family vs. no family firms, regarding the influence of the family control on the firm's long-term strategic orientation (R&D investment and capital expenditures), and towards short-term orientation (ROA, ROE and dividends).

Using a panel data composed by 1,284 observations-year during the period 2004-2014 that integrates four emerging Latin American countries (Argentina, Brazil, Chile and Mexico), results are summarized as follows: 1) family firms favor R&D investment only when the moderating effect of the board structure is included, which suggests that Latin American firms, promote a long-term orientation with the purpose of preserving the wealth for next generations; 2) the board size, the independence on the board, COB-CEO duality and female participation on the board increases the R&D investment; and 3) family firms obtain lower ratios on ROA and dividend payouts compared to non-family firms. This research has practical implications on governance structures and innovation strategies for family firms.

The structure of the paper is composed by four sections. In the second section, the theoretical framework is developed and the study hypotheses

are established. Third section establishes the methods, the study variables and the empirical models. Section fourth presents the discussion of empirical results. Section fifth concludes and indicates the limitations and some future research.

2. Theoretical Bakcground

From the perspective of agency theory, the family firm's innovation behavior differs from non-family companies (Aparicio et al., 2019; Chrisman et al., 2007). According to De Massis et al. (2016), the institutional weaknesses lead to different results, since family members may prioritize economic goals, due to weak property rights protection. However, controlling family members can also promote a better supervision role for management, which reduces the agency costs and favors investment in R&D (Block, 2012). The family ownership-innovation relationship is also explored through the socioemotional wealth (SEW) perspective (Chrisman & Patel, 2012; Sciascia et al., 2015). Family members are actively involved in the management and governance structures of the company, being the main objective to transfer the wealth to next generations (Basu et al., 2009, Briano-Turrent, 2022). The SEW theory affirms that family owners may be willing to accept greater risks associated with innovation strategies if this required to preserve the family's SEW for the next generations (Gómez-Mejía et al., 2014; Le Breton-Miller & Miller, 2006). However, results are no conclusive, since depending on the context, family firms may invest less in R&D, when innovation projects are seen as a threat to the preservation of SEW endowments, as they may reduce family control (Pérez-González, 2006). Namely, when the SEW is threatened, family firms inhibit the risky decisions and focus on the short-term results (Gómez-Mejía et al., 2007, 2010). In this context, family firms aim to protect its reputation and long-term visibility on the market, and therefore, may demonstrate greater incentives to increase the R&D investment (Schmid et al., 2014). Corporate governance mechanisms such as the board of directors, have a crucial impact on supervising and monitoring managers and may yield divergent results on innovation (Gonzales-Bustos et al., 2020).

2.1. Effect of family element on the research and development (R&D) investment

R&D investment is an essential resource to promote innovation and business competitiveness (Arzubiaga et al., 2017). When the R&D investment is low, innovation capacity decreases and negatively affects business competitiveness (Kor, 2006). However, R&D investment represents a risky decision in the long-term, since it requires large amounts of financial capital and involves a failure possibility (Wu et al., 2005). Furthermore, financial results are not immediate payback may take several years (Lee & O'Neill, 2003). In this regard, the R&D investment reflects the risk taking orientation from the family firm perspective.

The family ownership may affect risk taking behavior (Fernández & Nieto, 2006) and is a possible source of competitive advantage for innovation (Calabrò et al., 2019). In terms of motivation, if the concentration of family ownership increases, the effect of the family on strategic decisions also increases (Miller et al., 2013). Family business promote an organizational culture characterized by the values of altruism, loyalty, commitment, family ties and stability (Miller & Le Breton-Miller, 2005). These characteristics reduce the incentives to pursue an individual opportunistic behavior and encourage a long-term orientation that seek to protect the interests of the firm's shareholders (Fama & Jensen, 1985). According to the socioemotional wealth theory, family firms have substantial incentives to protect the family's reputation and avoid acgtons to reduce long-run firm value (Tsao et al. 2019). Therefore, family firms are oriented towards long-term strategies, promoting higher R&D investment and capital expenditures (Braun & Sharma, 2007).

Additionally, family ownership pursue the interest's alignment between management and owners, since family members generally hold the CEO position (Lee, 2006). Family CEOs tend to maintain their positions for long periods compared to non-family CEOs, obtaining a greater incentive to act as efficient resource managers (Miller & Le Breton-Miller, 2005; Uhlaner et al., 2007). According to Wu et al. (2005), the leader of the firm plays an important role in the searching of resources and capabilities focused on innovation. In this vein, Jiang, Shi and Zheng (2020), family CEOs enable to family owners to have direct control over firms, making these owners less concerned about potential loss of socioemotional wealth, and therefore, make more intensive R&D investment. Similarly, the family founders aim to transfer the company to next generations. Thus, it is important to strengthen their management team and extend long-term external connections to enhance the transition process (Miller & Le Breton-Miller, 2006). Consequently, the promotion of close relationships with financial institutions may facilitate the access to financial capital, and consequently, an increase is shown for the R&D investment.

Conversely, some studies have found a negative

relationship between the family element and R&D investment. In terms of motivation, family controlling shareholders aim to guarantee the legacy for next generations (Fernández & Nieto, 2006; Thomsen & Pedersen, 2000), and therefore there is an increase on the family CEO risk aversion, promoting the stability and continuity of the firm (Graves & Thomas, 2006). According to Cirillo, Ossorio and Pennacchio (2018), family involvement in ownership reduces firms' R&D investment, and this situation represents a potential threat to the status quo and the wellbeing of the family. Moreover, the participation of family members in the decision-making process limits the wealth generation in the short-term and increases the viability and longevity company's risks (Wu et al., 2005). In the same line, Choi et al. (2015) found that family ownership is negatively related to R&D investment, but the relationship becomes positive when growth opportunities are present. As a result, family-owned firms would prefer a short-term orientation to avoid risky growth opportunities.

The family firms' objectives are focused on maintaining employment for family members, while the family control tends to be more important than corporate objectives such as maximizing economic value, growth and innovation. Likewise, in family firms is common the appointment of family members in managerial positions instead of hiring qualified external personnel, which affects risk management and capabilities to promote innovation activities (Sirmon & Hitt, 2003). A common practice in family firms is the nepotism, which leads to inefficiency and favor the opportunistic behavior of family members (Fernández & Nieto, 2006). In this regard, the nomination of family members or unqualified personnel increases corporate risk and inhibits the R&D investment (Chen & Huang, 2006). Family firms are more cautious with the resources optimization because they are making decisions with the family wealth, so their orientation is focused on a cautious use of corporate wealth (Carney, 2005). According to the above, the following hypothesis is established:

Hypothesis 1. *Family-owned firms have a significant effect on the R&D investment compared to non-family listed firms.*

2.2. Moderating effect of the board composition on the family element and R&D investment.

The board of directors is one of the main corporate governance mechanisms and plays a supervisory role for management action mitigating the agency conflict between majority and minority shareholders, especially if their members are independent (Gillan, 2006). However, if the board members have family ties with the shareholders, independence and financial performance could be affected (Brunninge et al., 2007). Consequently, the moderating effect of the board composition on the family element and R&D investment relationship is relevant for the strategic decision making. We have include four dimensions of the board composition: size, independence, COB-CEO duality and female participation on the board.

2.2.1. Size of the board

Agency theory, affirms that board size may influence the inclusion of a variety number of perspectives on corporate strategy, including innovation in family firms (Gonzales-Bustos et al., 2020). Some authors argue that larger boards favor investment on R&D, increase business information and enhance the efficiency of the board's supervisory role (Zona et al., 2008). In the context of famly firms, the board tends to focus more on advisory role instead of monitoring and controlling (Brunninge et al., 2007). Board size is relatively smaller in family firms compared with non-family business; therefore, their growth in terms of adding more directors may enhance their capacity for advice, which is expected to have a positive influence on innovation strategies (Hussainey & Al-Najjar, 2012). More directors also imply more eyes capable of noticing problems and ensuring accountability, which are valuable especially if the starting point is a small board, like it is the case, frequently, in family businesses (Lane et al., 2006)

Given the above, the following hypothesis is established:

Hypothesis 2. There is a positive moderation effect of the board size over the family element and the R&D investment relationship.

2.2.2. Independence of the board

Several studies evidence a positive relationship between the influence of external/independent directors on innovation in family firms. Independent directors act as a supervisory mechanism for family members and protect the minority shareholders rights (Aragón et al., 2007). According to Chrisman et al. (2007), independent directors inhibit opportunistic behavior or resources improper use by majority shareholders. In addition, the independence of the board improves the making decision process and mitigates the expropriation of wealth by family members (Miller & Le Breton-Miller, 2006). According to Hillman & Dalziel (2003), independent directors have greater incentives to safeguard the shareholders interests and reduce the opportunistic behavior of family members, which in turn may encourage to family managers to promote greater R&D investment, and therefore,

generate a higher long-term profitability. Similarly, Kor (2006) shows that companies with more independent members develop and maintain their innovation capabilities, while companies with less independence on the board limit R&D investment and reduce the corporate value.
According to the approach of agency theory, the presensece of independent directors is positevely associated with innovation (Gonzales-Bustos, 2020), since independent directors offer sufficient experience to identify short-sighted reductions in R&D. In addition, independent directors are related to financial institutions, which promotes greater capital raising from external institutions (Clarysse et al., 2007). Given the above discussion, the following hypothesis is proposed:
Hypothesis 3. *There is a positive moderation effect of the independence of the board over the family element and the R&D investment relationship.*

2.2.3. COB-CEO Duality

The COB-CEO duality is present when the positions of Chairman of the Board (COB) and Chief Executive Officer (CEO) are held by the same person, and generally, is the founder or a direct family member (Van Essen et al., 2012). Some possible explanations for a positive association between COB-CEO duality and innovation are related to the elimination of ambiguity regarding the company's leadership and to increase the legitimacy of a strong leader, avoiding confusion about who wins the power of the company (Baliga et al., 1996). However, from the agency theory perspective, the COB-CEO duality leads to a weakness position's board, in relation to the company's managers; this fact may complicate in changing the status quo and introducing new ideas to the company which deteriorates innovation (Zahra et al., 2000). In this case, the centralization of power in the top corporate positions causes the adoption of strategies that involve certain risk (Chen & Hsu, 2009). When there is a separation of roles, the board of directors is capable to retain the control in decision making and its monitoring function is more effective, which promotes an interest alignment between majority and minority shareholders in family firms (Braun & Sharma, 2007). Hence, the following hypothesis is established.

Hypothesis 4. *There is a negative moderation effect of the COB-CEO duality over the family element and the R&D investment relationship.*

2.2.4. Female participation on the board

The presence of women on strategic positions has a significant influence on corporate performance and promotes new perspectives in decision making and the strategies' formulation. Family firms generally have more women on their boards than non-family business, because female directors are part of the owning family (Bannò et al., 2021). Even if women are more present in family businesses, they usually play informal roles or the spaces available for women are marginal or invisible (Montemerlo & Profeta, 2009). As a consequence, the intersection of gender and innovation appears to favor men (Marlow & McAdam, 2012). In the same line, Francoeur et al. (2008) show that boards with higher women participation operating in complex contexts, tend to be more cautious under risky corporate framework. Barber and Odean (2001) argue that women tend to take fewer risks compared to their male counterparts, since they have a smaller margin for error. Similarly, Faccio et al. (2016) conclude that women who hold strategic positions decrease the leverage level and volatility, but increase the company continuity. Therefore, the following hypothesis is proposed.

Hypothesis 5. *There is a negative moderation effect of the female participation on the board over the family element and the R&D investment relationship.*

3. Research Methodology

3.1. Sample

The data used in this study includes non-financial firms from the highest liquidity ratios in each country: Argentina (Merval), Brazil (Bovespa), Chile (IPSA) and Mexico (IPyC). These four ratios represent close to 80% of the capitalization of the Latin American capital market (Briano-Turrent, 2022). The initial sample was of 155 listed firms, but 34 companies were excluded of the analysis because their data were incomplete or belonged to the banking sector. The banking sector regulation differs from the rest of the companies and is under stricter scrutiny and supervision by the financial system (Briano-Turrent et al., 2020). Therefore, the final sample is composed by 121 companies (10 for Argentina, 49 for Brazil, 32 for Chile and 30 for Mexico), that is, 1,284 observations/year during the period 2004-2014. The information of the variables related to the family element and the board composition (size, independence, duality COB-CEO and female participation), were obtained from the annual reports through content analysis methodology. We perform content analysis focusing on the volume and intensity of disclosure in the annual reports using the number of words and sentences related to "family ownership" and "board composition" (Briano-Turrent & Rodríguez-Ariza, 2016).

The financial variables were extracted from the "Compustat" database. The international classification "Bechmark Industrial Classification (ICB)" is adopted to identify the industrial sectors. The outliers of financial variables were treated and replaced with the values of the 2nd and 98th percentiles to eliminate their effect on the empirical results (Shumway, 2001).

Table 1 describes the study sample. Panel A shows the number of observations per country and per year, which suggests that Brazil accounts with the highest number of companies, 49 companies (40.5%), followed by Chile (26.4%), Mexico (24.8%) and Argentina (8.3%). Panel B shows the study sample by industrial sector and discriminates between family and non-family firms (shareholder control with voting rights [column 1 and 2] and family CEO [columns 3 and 4]). We observe that in most sectors family ownership predominates, with the exception of the energy, oil and gas and telecommunications sectors, which are companies generally controlled by the State (see columns 1 and 2 of panel B). Regarding the participation of family CEOs, it is shown that family firms normally nominate external CEOs to lead the company. The industry sectors with a higher presence of family CEOs are health care, telecommunications and oil and gas (columns 3 and 4, panel B).

Table 1. Sample distribution and summary statistics

Panel A reports the number of observations firm/year of the four selected Latin American countries during the test period from 2004 to 2014. Panel B shows the number of family vs. no family firms according to the Industry Classification Benchmark (ICB). A company is defined as family firm if the 20% or more of the shareholding control are held by the founder family (column 1, panel B), or if the CEO position is occupied by a direct member related to the founder family [parents, children, spouse] (column 3, panel B). Column 2 shows the percentage of non-family firms and column 3 indicates the percentage of companies that promote a non-family CEO or external CEO to lead the firm. The information was manually collected from the Stock Exchanges of each country and from the websites and annual reports of analyzed companies.

Panel A. Firm-year distribution by country

Year	Argentina	Brazil	Chile	Mexico	Total
2004	8	38	24	28	98
2005	8	42	28	29	107
2006	9	45	30	29	113
2007	10	48	31	30	119
2008	10	49	32	30	121
2009	10	49	32	30	121
2010	10	49	32	30	121
2011	10	49	32	30	121
2012	10	49	32	30	121
2013	10	49	32	30	121
2014	10	49	32	30	121
Total	***105***	***516***	***337***	***326***	***1,284***

Panel B. % family firms according to the shareholding control and Family CEO

Industry type	% Family Firms (shareholding control) (1)	% Non-Family Firms (shareholding control) (2)	% Family CEOs Firms (3)	% Non-Family CEOs Firms (4)
Basic Materials	83.1	16.9	32.4	67.6
Industrial	77.0	23.0	41.3	58.7
Consumer Goods	83.9	16.1	41.2	58.8
Health Care	100.0	0.0	100.0	0.0

Consumer Services	87.7	12.3	44.4	55.6
Telecommunications	51.2	48.8	54.6	43.4
Energies	28.4	71.6	4.6	95.4
Real State	80.0	20.0	26.7	73.3
Technology	100.0	0.0	0.0	100.0
Oil & Gas	54.8	45.2	45.2	54.8
Total	***72.0***	***28.0***	***35.1***	***64.9***

Source: Stock Exchanges from Argentina, Brazil, Chile and Mexico.

3.2. Empirical model and study variables

The effect of family dimension over R&D investment is analyzed through five multiple regression models integrating the moderating effect and control variables. Firstly, the family element towards long-term orientation is analyzed. In this model, the corporate governance moderating effect on the R&D investment and capital expenditures is integrated. Secondly, the family element on the short-term orientation is studied. The short-term financial measures are established as the ROA, the ROE and the dividends payment. We have adopted the Ordinary Least Squares (OLS) methods to analyze the relationship, particularly the Huber-White estimator that corrects standard errors. The year, industry type and country are included as control variables in the empirical model. The five empirical models are shown.

1) *Long-term orientation of family (R&D Investment)*

$$R\&D_i=\alpha_{it}+\beta_1 Family_i+\beta_j\left(Family_i*Board\ Composition_{it}\right)+\beta_k(Control_{it})+\mu_{it}$$

$$Capital\ Exp_{it}=\alpha_{it}+\beta_1 Family_i+\beta_j\left(Family_i*Board\ Composition_{it}\right)+\beta_k(Control_{it})+\mu_{it}$$

2) *Short-term orientation of family firm (Profitability and Dividends)*

$$ROA_{it}=\alpha_{it}+\beta_1 Family_i+\beta_j\left(Family_i*Board\ Composition_{it}\right)+\beta_k(Control_{it})+\mu_{it}$$

$$ROE_{it}=\alpha_{it}+\beta_1 Family_i+\beta_j\left(Family_i*Board\ Composition_{it}\right)+\beta_k(Control_{it})+\mu_{it}$$

$$Dividends_{it}=\alpha_{it}+\beta_1 Family_i+\beta_j(Family*Board\ Composition_{it})+\beta_k(Control_{it})+\mu_{it}$$

3.2.1. Dependent variables

R&D Intensity. R&D expenses to total sales. This ratio is used as an approximation to R&D investment. As mentioned above, R&D expenditures generally do not generate income immediately, so this measure is used as an indicator of company long-term economic orientation (Chrisman & Patel, 2012; Lee & O'Neill , 2003).

Capital Expenditures *(CapExp)*. It is measured as the proportion of capital expenditures to total sales. This variable is adopted as an approximation to the company long-term orientation, since, by promoting greater capital spending, R&D investment is increased (Fahlenbrach, 2009).

Return on assets (ROA). This variable is obtained by dividing net income by total assets at the end of each study year (González et al., 2017). In our model, ROA represents a measure of profitability in the short-term.

Return on capital (ROE). This variable is obtained by dividing the net profit by the stockholders' equity or the company's equity for each study year (Yoo & Rhee, 2012). In our model, ROE represents a measure of profitability in the short-term.

Dividends payout (Dividends). This variable reflects the dividends paid by the company, obtained by dividing the dividend per share between earnings per share (Fahlenbrach, 2009; González et al., 2017). This variable represents a measure of profitability for shareholders in the short-term.

3.2.2. Independent variables

Family ownership concentration (OwnFamily). Dichotomous variable that measures the shareholding control with voting rights hold by family members. The variable takes the value

of 1 if the majority shareholder is an individual (founder or family member) that holds at least 20% of shares, and 0 otherwise. According to La Porta et al. (1999), corporate control is obtained through the use of pyramidal structures, control chains and dual class shares, and suggest that a significant control could be obtained with at least 20% of the voting rights.

Family CEO *(FamCEO)*. Dichotomous variable that takes the value of 1 if the founder or a direct family member of the firm (person with familiar ties: blood or marriage) holds the CEO position and 0 otherwise (Chrisman & Patel, 2012; Becerra et al., 2020).

3.2.3. Moderating variables

In our empirical model, the board characteristics are adopted as moderating variables.

Board size. Natural logarithm of the members that integrate the board of directors (Upadhyay & Sriram, 2011).

Independence of the board. It is the number of independent directors with respect to the total board members (Su & Lee, 2013).

COB-CEO Duality. Dichotomous variable that takes the value of 1 if both positions are hold by the same person, and 0 otherwise (Chen et al., 2015).

Female participation in the board. Number of women who participate on the board with respect to the total members (Faccio et al., 2016).

3.2.4. Control Variables

We have included in the analysis a group of control variables that reflect the company characteristics: 1) the company size that is measured through the natural logarithm of the total assets, 2) the age of the company, which is referred to the natural logarithm of the number of years since the foundation of the company, 3) long-term leverage, 4) industrial sector, 5) year of analysis, and 6) country (Yoo & Rhee, 2012). The error term is integrated into the models: µit.

4. Analysis of Results

4.1. Descriptive analysis

Table 2 shows the descriptive statistics for the studied variables, as well as the means differences discriminating between family and non-family firms. In panel A, it is observed that when family members hold shareholder´s control (at least 20% of shareholding with voting rights), they inhibit the R&D investment, obtain lower ROE ratios and pay less dividends, compared to non-family firms. Regarding the board composition, results show that family firms promote larger boards (10 vs.9 members), a higher rate of independent members (0.35 vs.0.31) and the adoption of the CoB-CEO duality practice (26.92% vs. 6.96%). In family firms, there is a lower rate of women participation on the board (3.88% vs. 5.86%), while younger companies (30.76 years vs. 33.77 years) and smaller companies (8.17 vs. 8.87).

The table 2 (Panel B) describes the study variables, discriminating between family and non-family firms (family CEO vs. non-family CEO). In companies where the CEO position is occupied by a family member, the R&D investment and dividend payment are reduced, although Family CEOs promote a higher ROA. Regarding board composition, family CEOs firms have larger boards (10 vs.9 members), increase the board independence (0.41 vs.0.31), and adopt the COB-CEO duality practice (49.90% vs.5.88%). Family CEOs firms are younger and smaller compared with non-family CEOs firms. Brazil reaches accounts the highest R&D investment with an average of 0.77, followed by Mexico (0.09), Chile (0.04) and Argentina (0.00).

Table 2. Descriptive statistics for study variables

This table describes the mean and median values for dependent and independent variables used in this study, discriminating between family and non-family firms. We have adopted t-test estimator to analyze the means differences between both group of firms. ***, **, * show the significance level to 1%, 5%, y 10%, respectively. The variables “high R&D investment firms” and “high capital expenditures firms” are dichotomous variables that take the value of 1 if the expense R&D expenses or capital over total sales is greater than the median of a given year and 0 otherwise.

Panel A. Family and non-family firms according to the shareholding concentration held by the family founder (20% or more).							
	Full sample (N=1,284)		Family Firms (n=925)		Non-family Firms (n= 359)		Mean difference
Dependent Variables	Mean	Median	Mean	Median	Mean	Median	t-test
R&D Investment/Total Sales (%)	47.55	16.00	34.17	8.00	57.62	19.00	-1.67*
High R&D investment firms	5.76		3.03		12.81		-6.87***
Capital Expenditures / Total Sales (%)	13.09	7.09	13.44	6.51	12.10	9.78	0.76

Panel A. Family and non-family firms according to the shareholding concentration held by the family founder (20% or more).

High Capital Expenditures / Total Sales Companies	49.82		45.64		61.49		-4.72***
ROA	0.08	0.07	0.07	0.07	0.08	0.06	-1.36
ROE	0.15	0.12	0.14	0.13	0.18	0.11	-2.09**
Dividends (D/E %)	34.24	30.18	26.77	24.67	36.60	33.42	-5.07***
Independent Variables							
Board size	9.87	9.00	10.00	9.00	9.54	9.00	2.55***
Board independence	0.34	0.33	0.35	0.33	0.31	0.25	3.22***
COB-CEO Duality (%)	21.34		26.92		6.96		8.02***
% women on the board	4.43	0.00	3.88	0.00	5.86	0.00	-4.25***
Leverage	0.29	0.29	0.29	0.28	0.30	0.31	-0.70
Company age	31.60	26.00	30.76	23.00	33.77	32.00	-3.57***
Ln (Total Assets)	8.37	8.31	8.17	8.07	8.87	8.88	-8.61***

Panel B. Family and non-family firms according to Family CEOs Firms and Non-family Firms.

	Full Sample (N=1,284)		Family CEO Firms (n=451)		Non-family CEO Firms (n= 833)		Mean difference
Dependent Variables	Mean	Median	Mean	Median	Mean	Median	**t-test**
R&D Investment/Total Sales (%)	47.55	16.00	13.59	7.50	53.43	16.00	-2.05**
High R&D investment firms	5.76		2.22		7.68		-4.03***
Capital Expenditures / Total Sales (%)	13.09	7.09	12.11	6.12	13.58	7.36	-0.88
High Capital Expenditures / Total Sales Companies	49.82		44.15		52.68		-2.70***
ROA	0.08	0.07	0.07	0.07	0.07	0.06	1.61*
ROE	0.15	0.12	0.14	0.13	0.14	0.11	1.32
Dividends (D/E %)	34.24	30.18	29.14	23.75	37.12	34.02	-4.06***
Independent Variables							
Board size	9.87	9.00	10.44	10.00	9.56	9.00	3.64***
Board independence	0.34	0.33	0.41	0.40	0.31	0.29	8.53***
COB-CEO Duality (%)	21.34		49.90		5.88		21.38***
% women on the board	4.43	0.00	4.39	0.00	4.45	0.00	-0.16
Leverage	0.29	0.29	0.28	0.27	0.30	0.30	-1.41
Company age	31.60	26.00	26.99	21.00	34.09	29.00	-4.46***
Ln (Total Assets)	8.37	8.31	8.29	8.12	8.41	8.46	-1.54

Source: Compustat database.

4.2. Regression analysis

Table 4 shows the regression analysis empirical results using the Ordinary Least Squares (OLS) method and the Huber-White estimator to correct the standard errors. The effect of the year of study, industrial sector and country was integrated in the models through dummy variables. This table shows the influence of the family element and the board composition on R&D investment and capital expenditures, which represent the long-term orientation of the firm. Table 4 (Panel A) shows the direct effect of the independent variables over the R&D investment and capital expenditures. Column 1 demonstrates that ownership concentration in hands of family members does not influence on the R&D investment, although, the board size has a negative and significant influence on R&D investment (p = 0.05), while the company size motivates to an increase of R&D investment (p = 0.01). Column 2 evidences that family CEOs does not influence R&D, while the board size (p = 0.05) has a negative effect and the company size influence. Column 3 show that family ownership concentration significantly favors capital expenditures (p = 0.10), whilst board size, COB-CEO duality, female participation on the board and the company age, decrease capital expenditures. By contrast, the board independence, and company size, promote a higher capital expenditure. Column 4 exhibits that family CEOs do not affect capital expenditure decisions, but as in model 3, corporate governance variables have a significant incidence on capital expenditures.

Table 4 (Panel B) describes the moderating effect of the board of directors' composition on the relationship between the family element and R&D investment decisions. Results indicate that some variables related to the board composition have a significantly moderation effect in this relationship, which suggests that board composition constitutes a monitoring mechanism of family members' actions, as a result, motivating an increase of R&D investment (Chen, 2009; Gonzales-Bustos et al., 2020). Column 1 shows that family's ownership concentration does not have a significant influence on R&D investment, while the moderating effect between the family element and the female participation on the board (p = 0.01) and the moderating effect between the family element and COB-CEO duality (p = 0.10) increases the R&D investment. Column 2 supports that family CEOs does not have a significant impact on R&D investment, although some board characteristics could have a relevant impact. For instance, the moderating effect between the family element and the board size has a positive moderating effect on the R&D investment (p = 0.05). Similarly, there is a positive moderating effect between the board independence and the family element (p = 0.05) and R&D investment, the moderating effect between the COB-CEO duality and the family element and R&D investment (p = 0.01), the moderating effect between the gender diversity in the board and the family element and R&D investment (p=0.01). The company size (p = 0.05) and the company age (p = 0.05) have a positive effect on R&D investment. Columns 3 and 4 show that family firms (family ownership concentration and firms with family CEOs) increase the capital expenditures investment (p = 0.10) compared to no family firms. Regarding the board composition, results evidence a positive moderating effect between the family element and board size (p = 0.10) and the capital expenditures. There is a positive moderating effect between the COB-CEO duality and the family element on the capital expenditures (p = 0.05). By contrast, the company age and the company size (p = 0.01 y p = 0.05) have a negative effect in the capital expenditures variable. These findings are in line with some previous studies (Gonzales-Bustos, 2020; Zona et al., 2008) and support the assumptions of the agency theory that emphasizes the benefits of greater gender diversity in the board achieves a better working environment, more access to a greater knowledge, and therefore promotes a higher innovation level. Regarding the COB-CEO duality, results suggest that a strong leadership held by only one person could enhance innovation strategies in family firms (Gonzales-Bustos, 2020). Van Essen et al. (2012) affirm that larger boards and independent directors may enhance cognitive diversity for decision-making process, which promotes innovations.

Table 4. Family element and R&D regression analysis

This table shows the OLS regression results using the Huber-White method to correct standard errors. Panel A exhibits the direct effect of the independent variables, while panel B shows the moderator effect. Columns 1 and 2 present the analysis for R&D Investment/Total Sales (%), while columns 3 and 4 describe the regression results for the Total Capital Expenditures/Total Sales variable. In columns 1 and 3 the ownership concentration is integrated as an independent variable, while in columns 2 and 4, the effect of family CEO is included. Panel B show the moderating effect of family element and board composition. The rest of the variables remain constant in the four models. The numbers reported in parentheses represent the t statistics in the regression analysis. ***, **, * indicate the level of significance at the 1%, 5%, and 10% levels, respectively.

Panel A. Direct effect of the family element, board composition on R&D investment and capital expenditures.

Variables	(1) R&D/Total Sales (%)	(2) R&D/Total Sales (%)	(3) Capital Expenditures	(4) Capital Expenditures
Family Firm	0.01		1.13*	
(ownership control)	(0.07)		(1.68)	
Family Firm		-0.12		-0.40
(Family CEO)		(-0.69)		(-0.58)
Board Size	-0.28**	-0.27**	-1.91***	-1.79***
	(-2.17)	(-2.15)	(-2.86)	(-2.70)
Board Independence	0.20	0.24*	7.95***	8.15***
	(0.52)	(0.62)	(5.88)	(6.23)
COB-CEO Duality	-0.06	-0.03	-1.71**	-2.10***
	(-0.31)	(-0.23)	(-2.09)	(-2.53)
% women on the board	-0.13	-0.09	-12.48***	-12.54***
	(-0.17)	(-0.11)	(-3.31)	(-3.34)
Leverage	-0.74	-0.67	-0.76	-1.21
	(-1.54)	(-1.28)	(-0.35)	(-0.56)
Company Age	-0.03	-0.03	-2.14***	-2.13***
	(-0.35)	(-0.28)	(-5.01)	(-5.03)
Company Size	0.29***	0.28***	0.46*	0.53**
	(2.86)	(2.73)	(1.77)	(1.99)
Industry Type	Yes	Yes	Yes	Yes
Year	No	No	Yes	Yes
Country	Yes	Yes	Yes	Yes
Constant	0.30	0.34	30.11***	31.51***
	(0.29)	(0.31)	(8.48)	(8.74)
R^2 Adjusted	0.41	0.41	0.31	0.31
Observations	1,269	1,269	1,111	1,111

Panel B. Moderating effect of the board composition on the relationship between the family element and the R&D investment and capital expenditures.

Variables	(1) R&D/Total Sales (%)	(2) R&D/Total Sales (%)	(3) Capital Expenditures	(4) Capital Expenditures
Family Firm	0.37		5.36*	
(ownership control)	(0.58)		(1.79)	
Family Firm		0.04		5.41*
(Family CEO)		(1.21)		(1.87)
Board Size	0.07*	0.00	0.18	0.13
	(1.74)	(1.35)	(1.29)	(1.02)
*Family Firm*Board Size*	0.31	0.03**	1.32	1.93*
	(1.25)	(2.18)	(1.08)	(1.78)
Board Independence	-0.58	-0.19**	-4.60**	-6.41***
	(-1.08)	(-2.33)	(-2.10)	(-4.15)
Family Firm Board Ind*	0.28	0.22***	3.82	4.11
	(0.48)	(2.78)	(1.31)	(1.20)
COB-CEO Duality	-0.81*	-0.09***	-2.31	-0.20
	(-1.79)	(-4.40)	(-1.56)	(-0.17)
*Family Firm*COB-CEO Duality*	0.96*	0.05***	4.82***	3.29**
	(1.89)	(2.42)	(2.61)	(1.97)
% women on the board	-1.97	-0.02	-14.31**	-11.68***
	(-1.40)	(-0.09)	(-2.40)	(-2.50)
Family Firm% women on the*	5.06***	0.16	1.05	6.63
Board	(2.75)	(0.88)	(0.14)	(0.81)
Leverage	-0.93	-0.03	-0.74	0.56
	(-1.50)	(-0.73)	(-0.35)	(0.26)
Company Age	0.07	0.02**	-2.03***	-2.13***
	(0.57)	(2.29)	(-4.79)	(-4.99)
Company Size	0.21	0.03**	-0.65**	-0.68**
	(1.46)	(1.93)	(-2.14)	(-2.15)
Industry Type	Yes	Yes	Yes	Yes
Year	No Yes	No Yes	Yes Yes	Yes Yes
Constant	-2.07**	-0.15	21.92***	24.64***
R^2 Adjusted	(-2.06)	(-1.48)	(6.40)	(7.00)
	0.46	0.31	0.32	0.32
Observations	1,269	1,269	1,111	1,111

Source: Own elaboration.

4.3. The family element effect on the short-term financial performance

Several studies have shown a significant influence of the family element on profitability. For instance, Maury (2006) argue that control in the family hands is associated with higher profitability, since the agency problem between shareholders and management is reduced. Furthermore, Martikainen et al. (2009) suggest that differences on corporate results are explained by the use of technologies and the efficiency of family firms. However, these results are favored if the CEO position is held by an external member. In contrast, other studies suggest that family firms may affect negatively the financial performance in the short-term, since family members tend to establish excessive salaries and benefits for their family, and hire incompetent people to occupy strategic positions (Pérez-González, 2006). Regarding to long-term orientation, family firms tend to emphasizes long-term goals and non-financial aspects of performance, sacrificing short-term benefits such as dividend payments to favor projects that promise future benefits (Chrisman & Patel, 2012; Mahto et al., 2018). For the above, the following hypothesis is established:

Hypothesis 6. The family element influences negatively on the short-term financial performance and favor the long-term financial performance.

Table 5 exhibits that the family element decreases some financial variables in the short-term. For instance, model 1 presents that those family-controlled firms decrease the ROA and leverage level (p = 0.01), while the board size (p = 0.01) and the company age (p = 0.01) have a positive effect. In column 2 there is no significant evidence that family CEO firms account for a higher ROA, although there is a positive association with the board size and the firm age. By contrast, there is a negative influence of the leverage on the ROA. Column 3 evidences that ownership concentration in the family hands (p = 0.01) increases the ROE, as well as the company age (p = 0.01). Column 4 exhibits a no significant relationship between family CEO firms and the ROE, although the company age (p = 0.01) favors it. Finally, columns 5 and 6 indicate that both family ownership concentration and family CEO firms, decrease the dividends (p = 0.05 and p = 0.01, respectively), which suggests the adoption of a long-term orientation and the preference to pay less dividends, investing more in projects that ensure the wealth for next generations (Block, 2012). Furthermore, it is observed that the board independence (p = 0.01) and the leverage level (p = 0.01) inhibit the dividends payment, while the female members in the board (p = 0.01), the company age (p = 0.01) and the company size (p = 0.05) increase dividends. These results confirm those found by Watkins-Fassler (2018), who shows a positive relation between family firms and financial performance, because high family ownership concentration favors long-term relationships in the companies, security and stability, knowledge transfer, which positively impacts investment and financial results.

Table 5. Family element and short-term financial performance regression analysis

This table presents the OLS regression results using the Huber-White method to correct standard errors. Columns 1 and 2 show the analysis for the ROA, columns 3 and 4 describe the regression results for the ROE variable, and columns 5 and 6 describe the results for the dividend payment variable. In columns 1, 3 and 5 the shareholding control is integrated as an independent variable of the family element, while in columns 2, 4 and 6, the effect of family CEO firm variable is included. The rest of the variables remain constant in the six models. The numbers reported in parentheses represent the t statistics in the regression analysis. ***, **, * indicate the level of significance at the levels of 1%, 5%, and 10%, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
Variables	ROA	ROA	ROE	ROE	Dividends Payment	Dividends Payment
Family Firm	-0.01**		0.08***		-4.58**	
(ownership control)	(-2.10)		(3.03)		(-2.08)	
Family Firm		0.00		0.01		-5.62***
(Family CEO)		(0.39)		(0.21)		(-2.89)
Board Size	0.03***	0.03***	-0.00	-0.01	2.00	1.40
	(4.94)	(4.83)	(-0.12)	(-0.46)	(0.83)	(0.60)
Board Independence	-0.00	-0.00	-0.02	-0.02	-14.93***	-13.56***
	(-0.12)	(-0.03)	(-0.51)	(-0.32)	(-3.40)	(-3.11)

	(1)	(2)	(3)	(4)	(5)	(6)
Variables	ROA	ROA	ROE	ROE	Dividends Payment	Dividends Payment
COB-CEO Duality	-0.00	-0.00	-0.00	-0.02	-2.81	-0.34
	(-0.66)	(-1.16)	(-0.14)	(-0.68)	(-1.22)	(-0.14)
% women on the board	-0.03	-0.03	-0.10	-0.08	39.72***	39.26***
	(-1.26)	(-1.18)	(-0.85)	(-0.74)	(3.32)	(3.32)
Leverage	-0.08***	-0.09***	0.03	0.01	-19.54***	-21.12***
	(-5.47)	(-5.81)	(0.35)	(0.07)	(-3.10)	(-3.34)
Company Age	0.01***	0.01***	0.03***	0.03***	3.90***	4.01***
	(5.12)	(5.09)	(3.04)	(3.09)	(4.10)	(4.17)
Board Size	-0.00	-0.00	-0.01	-0.01	1.73**	2.08**
	(-0.59)	(-0.10)	(-1.34)	(-0.66)	(2.27)	(2.70)
Industry Type	Yes	Yes	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes	Yes	Yes
Country	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.08***	0.06***	0.43***	0.32***	-1.36	-5.85
	(3.20)	(2.64)	(3.62)	(2.85)	(-0.15)	(-0.65)
R^2 Adjusted	0.23	0.23	0.06	0.05	0.16	0.16
Observations	1,269	1,269	1,267	1,267	1,023	1,023

Source: Own elaboration.

4.4. Robust Analysis (Logit Model)

Table 6 (Panel A) shows a Logit regression analysis which aims to strengthen the presented results in the table 4. The median values for R&D/Total sales and capital expenditures/Total sales were introduced in the models. That is, firms that are above of the median value were categorized as "companies with high R&D investment", while companies that obtained values below of the median value were classified as "companies with low R&D investment". Regarding the capital expenditures value, the same criteria was adopted. If the company accounts capital expenditures/Total sales above the median value, the company was classified as "a company with a high capital expenditures investment", otherwise it is considered as "a company with low capital expenditures investment". These variables take the value of 1 when they are above of the median value and 0 otherwise. Results of table 6 (Panel A), support that the family element motivates a higher R&D investment (see columns 1 and 2). As in the OLS analysis on the table 4, the board composition directly affects the R&D investment policy. For instance, the size of the board, the COB-CEO duality and the female participation on the board, decrease the R&D investment, while the independence of the board and the company size favor it. The leverage performance inhibits a greater R&D investment. With respect to capital expenditures, columns 3 and 4 show that family participation in the ownership does not significantly influence capital expenditures, although when the CEO is familiar, there is a significant increase (p = 0.01).

The table 6 (Panel B) shows the moderating effect of board composition on the relationship between the family element and R&D investment. Columns 1 and 3 show that the ownership concentration does not impact on the R&D investment or capital expenditures decisions, while family CEOs increase significantly the R&D investment and capital expenditures (see columns 3 and 4). In regard to the moderating effect of the board structure, columns 1 and 2 show that the board size (p = 0.01), board independence (p = 0.01), COB-CEO duality (p = 0.01), women participation on the board (p = 0.05) and leverage (p = 0.01) positively moderate the relationship between the family element and the R&D investment. Columns 2 and 4 exhibit that board size (p = 0.01), board independence (p = 0.01) and company size (p = 0.05) increase the capital expenditures. These findings highlight and confirm through

an additional analysis, the effect of board of directors' composition on innovation strategies in family firms (Gonzales-Bustos et al., 2020).

Table 6. Family element and R&D investment Logit regression
This table describes the results obtained from the Logit regression model, which adopts the Huber-White method to correct standard errors. Columns 1 and 2 show the analysis for R&D Investment / Total sales (%), while columns 3 and 4 describe the Logit regression results for the Total capital expenditures/Total sales variable. In columns 1 and 3 the ownership concentration is integrated as an independent variable of the family element, while in columns 2 and 4, the effect of the family CEO is included. The rest of the variables remain constant in the four models. The numbers reported in parentheses represent the z statistics in the Logit analysis. ***, **, * indicate the significance at 1%, 5%, and 10% levels, respectively.

Panel A. Logit regression: direct effect of the independent variables on R&D and capital expenditures				
	(1)	(2)	(3)	(4)
Variables	High RD investment firm	High RD investment firm	High capital expenditures firm	High capital expenditures firm
Family Firm	1.56***		0.27	
(ownership control)	(4.84)		(1.23)	
Family Firm		1.51***		0.55***
(Family CEO)		(3.49)		(2.62)
Board Size	-1.29***	-1.34***	-0.06	-0.06
	(-2.41)	(-2.54)	(-0.29)	(-0.27)
Board Independence	1.12*	1.57***	2.29***	2.40***
	(1.72)	(2.43)	(5.52)	(5.76)
COB-CEO Duality	-1.04**	-0.52	-0.54***	-0.94***
	(-2.17)	(-1.05)	(-2.48)	(-3.59)
% women on the board	-3.08**	-1.98	-2.41**	-2.65***
	(-1.92)	(-1.21)	(-2.26)	(-2.47)
Leverage	-2.20***	-1.61***	-0.71	-0.76
	(-4.04)	(-2.66)	(-1.32)	(-1.40)
Company Age	0.02	0.12	-0.13	-0.11
	(0.18)	(0.89)	(-1.49)	(-1.23)
Board Size	0.34***	0.51***	0.09	0.07
	(3.18)	(5.69)	(1.22)	(1.04)
Industry Type	Yes	Yes	Yes	Yes
Year	No	No	No	No
Country	Yes	Yes	Yes	Yes
Constant	-1.32	-3.33**	1.41	1.95**
	(-0.72)	(-2.13)	(1.50)	(2.21)
R^2 Adjusted	0.24	0.26	0.20	0.20
Observations	1,269	1,269	1,002	1,002

Panel B Logit regression: moderating effect of board composition on the relationship between the family element and the R&D investment and capital expenditures.

Variables	(1) High RD investment firm	(2) High RD investment firm	(3) High capital expenditures firm	(4) High capital expenditures firm
Family Firm	1.86		0.23	
(ownership control)	(1.06)		(0.27)	
Family Firm		1.17**		0.47**
(Family CEO)		(2.01)		(2.04)
Board Size	0.20***	0.13**	0.04	0.02
	(3.01)	(2.07)	(1.00)	(0.53)
Family Firm Board Size*	2.45***	1.60***	0.44	0.56***
	(3.00)	(5.92)	(1.27)	(3.31)
Board Independence	-0.13	-0.25	-0.79	-0.92
	(-0.16)	(-0.31)	(-1.16)	(-1.41)
*Family Firm*Board*	4.36***	4.90***	2.13***	2.01***
Independence	(3.24)	(3.83)	(2.37)	(2.41)
COB-CEO Duality	-12.29***	-12.50***	1.58	1.56
	(-23.52)	(-24.50)	(1.45)	(1.43)
*Family Firm*COB-CEO*	11.73***	12.68**	-1.00	-0.70
Duality	(17.89)	(15.48)	(-0.90)	(-0.63)
% women on the board	-2.33	-2.54	-0.09	-0.17
	(-0.94)	(-1.05)	(-0.05)	(-0.09)
Family Firm%women on*	7.47*	7.88**	3.23	3.24
the board	(1.81)	(1.91)	(1.39)	(1.41)
Leverage	1.37**	1.53***	-0.65	-0.71
	(2.29)	(2.62)	(-1.21)	(-1.29)
Company Age	0.14	0.14	-0.20**	-0.17*
	(0.94)	(0.89)	(-2.07)	(-1.87)
Company Size	0.16	0.19*	0.19**	0.19**
	(1.37)	(1.62)	(2.15)	(2.21)
Industry Type	Yes	Yes	Yes	Yes
Year	No	No	No	No
Country	Yes	Yes	Yes	Yes
Constant	-5.81***	-5.14***	-0.99	-0.74
	(-3.76)	(-3.41)	(-1.05)	(-0.84)
R^2 Adjusted	0.28	0.28	0.22	0.22
Observations	1,269	1,269	1,002	1,002

Source: Own elaboration.

5. Conclusions

This study contributes to the body of research in corporate governance and innovation strategies in family firms. Firstly, based in the agency and socio-emotional theories (Berrone et al., 2010), we extend the comparative literature in Latin America, by studying the innovation behavior of family firms, analyzing the moderating effect of board composition as the most important mechanism of corporate governance over the family element and the R&D investment. Latin America is characterized by inefficient government, heavy bureaucracy, corruption, high tax rates, political instability, and low quality of institutions (Fernández-Torres et al. 2019). Consequently, family business and their corporate governance structures and innovation strategies may vary compared to another addressed contexts. The empirical results confirm that Latin American family firms reach higher R&D ratios compared to non-family companies when the moderating effect of the board characteristics is introduced. The same results are evinced in the case of family CEOs in family firms, who obtain higher ratios on R&D investment and capital expenditures. Therefore, the H1 hypothesis is partially accepted, which holds that family firms favors the R&D investment to protect the socio-emotional wealth and guarantee the continuity of the firm to the next generations, encouraging a long-term orientation (Fuetsch, 2022; Mahto et al., 2018). These results suggests that board composition constitutes a monitoring mechanism of family members' actions, as a result, promoting an increase of R&D investment (Chen, 2009; Gonzales-Bustos et al., 2020).

Secondly, it is observed that larger boards, the incorporation of more independent members, the COB-CEO duality and the presence of women into the board have a positive and significant moderating effect on the relationship between family firms and R&D and capital expenditures investment. Thus, hypotheses H2, H3 are accepted, while H4 and H5 are not supported. These findings are confirmed by Chen et al. (2015), who argue that the board independence provides objective points of view and facilitates access to external resources. Similarly, larger boards may enhance their capacity for advice, which is expected to have a positive influence on innovation strategies (Hussainey & Al-Najjar, 2012). Regarding COB-CEO duality, some possible explanations for the opposite obtained result in this study, is the elimination of ambiguity regarding the company's leadership and to increase the legitimacy of a strong leader, avoiding confusion about who wins the power of the company (Baliga et al., 1996). In the same vein, women into the boards increase the monitoring function of the board and pay more attention to audit and risk oversight and control, which may favor innovation (Hernández-Lara & Gonzales-Bustos, 2020).

Family firms in Latin America have a preference towards long-term orientation, limiting the corporate results in the short-term. According to Tsao et al. (2015), R&D affects short-term profitability negatively because firms expense R&D spending immediately. In our case, family firms obtain lower profitability ratios and dividends compared to non-family firms, hence hypothesis H6 is accepted. These results have practical implications for family business in Latin America, highlighting the relevance of R&D investment and capital expenditures to ensure the family firms continuity. Moreover, the board composition plays an important role to favor the long-term orientation and innovation strategies. Its important to note, that in the context of family firms, the role of women on the board enhances innovation strategies, therefore, it is necessary to increase the participation of independent women directors through policies and regulations to analyze its contribution in future research.

The study recognizes some limitations and identifies future research. First, the study focuses on the most liquid companies in Latin America, excluding those companies that do not belong to those ratios and small and medium size companies. In this regard, future research could address new samples of study such as small and medium companies from the region. Second, some other variables related to the family element and governance structures are excluded in this research (e.g., generation of the firm, support committees of the board, socio-demographic characteristics of the board members), which may influence R&D decisions. Future research may extend this study adding new variables of corporate governance. Finally, the study is limited to four Latin American countries, so an interesting future research could incorporate emerging countries from other regions.

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Trends in Global Research on Supply Chain Finance from 1970 to 2021: A Bibliometric Analysis

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Abstract This work aims to identify and analyze trends in the study of supply chain finance (SCF), principally for small and medium-sized enterprises (SMEs), many of which are family run. Both bibliometrics and content analysis comprise the chosen methodology. By means of scientific mapping, the analysis highlights the production and performance of SCF and the key aspects that characterize it. The results confirm that SCF is located at the core of supply chain management (SCM) as a field of knowledge of greater breadth, and they reveal the great fragmentation and specialization that exists in this topic area. In particular, it is particularly associated with emerging topics such as innovation, collaboration, and resilience as factors for the development of SCF and the adoption of Blockchain to promote the sustainable performance of supply chains. On a theoretical level, this research reveals the advantages for growth and development that belonging to these chains represents for SMEs and, through the trends identified, it also contributes to better decision making by commercial partners involved in SCF.

CÓDIGOS JEL
C63, G30, M10, M19

PALABRAS CLAVE
Bibliometría, Análisis de coocurrencia de palabras, Análisis de mapas científicos, Financiación de la cadena de suministro

Tendencias en la investigación global sobre el financiamiento de la cadena de suministro de 1970 a 2021: un análisis bibliométrico

Resumen El objetivo de este trabajo es identificar y analizar las tendencias en el estudio del financiamiento en la cadena de suministro (SCF), aspecto especialmente relevante para pequeñas y medianas empresas (muchas de ellas de carácter familiar). Como metodología se utilizó bibliometría y el análisis de contenido. A través de mapas científicos, el análisis destaca la producción y desempeño del SCF, así como los aspectos clave que lo caracterizan. Los resultados de este trabajo confirman que el SCF se sitúa en el centro de la gestión de la cadena de suministro (SCM) como campo de conocimiento de mayor amplitud, y revelan la gran fragmentación y especialización que existe en esta área temática. En particular, asociada a temas emergentes como la innovación, colaboración y resiliencia como factores para el desarrollo del SCF y la adopción del *Blockchain* para promover el desempeño sostenible de las cadenas de suministro. Además, enfocada principalmente a la construcción de un marco conceptual integral del SCF, universalmente aceptado por las partes involucradas en las cadenas de suministro.

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1. Introduction

In today's business world, small and medium-sized enterprises (SMEs) constantly face challenges and opportunities in a dynamic and competitive environment. A crucial aspect that determines the success of these organizations is their capacity to manage their financial resources efficiently, particularly their working capital (Kayani et al., 2019). Mann (1918) defines working capital as money required to perform the existing operations of an entity. This is also known as the net working capital, *i.e.,* the amount required to keep the business running. While Schaal and Haley (1991) consider working capital management as the management of current assets and current liabilities. This is an essential component when optimizing the cash conversion cycle and for financial management in firms as it allows their operations to function properly and provides the liquidity needed to face market challenges. Working capital in SMEs becomes particularly relevant because of the characteristics and limitation of these firms, such as the scale of operations, limited access to finance, and sensitivity to market fluctuations. There are specific implications of individual versus cooperative working capital management in a supply chain. In this regard, Huang et al. (2022) take up the work of Hofmann and Kotzab (2010), who recommend that managers establish long-term collaborative relationships, particularly in cooperative working capital management, in order to finance the weaker members and improve overall performance instead of benefiting just some of the participants.

Working capital management has been key throughout modern history to provide liquidity in supply chains (SCs), by means of financial collaboration tools within the framework of Supply Chain Finance (SCF), and the financial solutions that have stemmed from this such as Factoring (Gelsomino et al., 2016b; Gomm, 2010; Liebl et al., 2016). Since the mid-20th century, SCF has stood out as an important support medium for commercial and financial activities throughout a swathe of industrial sectors at an international level. SCF has attracted attention by being an innovative model that allows businesses, particularly SMEs—which are mainly family run (D'Angelo et al., 2016)—to convert their credit sales into cash sales without incurring additional liabilities. SCF seeks to optimize financial flows on an inter-firm level by using solutions implemented by financial intermediaries (Camerinelli, 2009) or technology providers (Lamoureux & Evans, 2011) in order to align financial flows with product and information flows within the SC (Gelsomino et al., 2016a; Wuttke et al., 2013b).

This collaboration between firms is particularly important for SMEs, because, within the supply chain framework, they present bottlenecks in financing (Gereffi & Fernández-Stark, 2018). Cooperation networks and mechanisms for guaranteeing the operational flow of finance have a major influence on growth and innovation (Alos-Simo et al., 2022; Araya-Castillo, 2022; Moon, 2022), especially in developing countries (Ayyagari et al., 2015). In this setting, it is important to emphasize the significance of commercial credit, which is used by firms of various sizes and for a variety of financial reasons (Abdulsaleh & Worthington, 2013).

SCF has been characterized by two-digit growth rates in many countries, an increase in the number of firms providing SCF solutions worldwide, and a swift adoption of electronic data exchange (Bickers, 2021). As a result of the health and economic crisis caused by the Covid-19 pandemic, more recently exacerbated by the crisis in Russia and Ukraine, SCs are being put to the test (Kilpatrick, 2022), leaving firms in serious financial difficulties. According to Bickers (2021), the short-term impact of the pandemic has been a 6.5% decrease in the volume of SCF operations through Factoring in 2020, which was the second drop this century, being preceded by that of the 2009 financial crisis. One of the major questions in the post Covid-19 era is how the end of financial support measures from governments will affect SCF markets (Bickers, 2021). Currently, the most vulnerable firms are trying to increase trade credit from their suppliers in order to complement other forms of finance, while organizations less affected by this credit crisis are taking on the role of liquidity providers, accepting longer payment terms. These effects contribute to the need for solutions and programs that optimize working capital, of which SCF is one of the most important. Thus, in this scenario of uncertainty, efficient finance management in SCs through profound changes in the near future takes on greater significance (Ishida, 2020; Kumar & Mishra, 2020; Pérez-Elizundia et al., 2020, 2021).

It should be borne in mind that SCs are dominated by multinational firms that take up the first levels of the chain. However, in recent years there have been increasingly more SMEs joining SCs, although their negotiating power is still limited (Lampón et al., 2018, 2022; Rodríguez-De la Fuente & Lampón, 2020). In terms of financing, this asymmetrical power structure often results in the imposition of long payment terms and transfer of the financing costs to suppliers located on the SCs' lower levels (Lind et al., 2012). Furthermore, access to financing continues to be a major obstacle facing SMEs (Jansen et al., 2018). All these factors combined can affect the whole SC, which can lead to distribution problems for the

leading buyers by exposing them to manufacturing or delivery interruptions (Brandenburg, 2016). SCF is the means used on many occasions to solve such financing problems, focusing on SMEs (Ali et al., 2020; Wuttke et al., 2013b). In this context, this work shines a light on the role of SMEs in SCF as they make up two thirds of the firms worldwide, and of these, family firms represent around 85% (D'Angelo et al., 2016).

By means of a literature review and bibliometric and content analysis on SCF, this work aims to identify the trends in scientific research on SCF in the area of SMEs, most of which are family run, and to introduce the theoretical approaches traditionally used on SFC, its most closely related topic areas, and future lines of research based on the emerging trends. The following research question is therefore proposed:

RQ: What are the trends in scientific research on SCF found from 1970 to 2021 and what implications do they have for SMEs?

In answering this question, we will expose the existing limitation derived from fragmentation in the literature and semantics that prevails in this field of knowledge, and which creates a great deal of conceptual confusion. Therefore, we contribute to the debate on creating a holistic conceptual framework based on a consensus of universally accepted theories and terms. This is all done to improve understanding of SCF at both theoretical and practical levels and allow commercial stakeholders and regulatory authorities for SCs to make the most of opportunities and guide their policies.

Although there are previous bibliometric studies dealing with SCF analysis, they show limitations in search criteria as they do not consider the fragmentation that exists in the literature and semantics in this field of study, which was pointed out by Gelsomino et al. (2016a), Xu et al. (2020), and Parida et al. (2020). At the same time, none of the prior studies performs a bibliometric analysis on SCF centered on SMEs as this one does. The relevance of our work at a theoretical level consists in performing bibliometric analysis through science mapping with more robust criteria than those proposed by the previous literature. Analysis using these criteria made it possible, on the one hand, to identify the driving topics surrounding SCF (Supply Chain Management, Delayed Payments, and Sustainability), and the most relevant articles, journals, and authors in subjects linked to SCF (Reverse Factoring, Trade Credit, Working Capital Management, Risk Management, and SME Financing) in addition to the driving topics. On the other hand, this analysis made it possible to confirm the fragmentation and pave the way towards the construction of a comprehensive conceptual framework for universally accepted SCF for future research. Furthermore, this study takes up the most important questions identified by other authors in SCF and identifies aspects such as innovation, collaboration, and resilience as key factors in the development of SCF with the technological support of *FinTechs*, the adoption of Blockchain, and Artificial Intelligence to promote the sustainable performance of SCs.

The implications of this work for family firms lies in the advantages derived from their belonging to SCs, as well as the topic trends identified in SCF for decision making. The literature recognizes SMEs—the vast majority of which are family firms—as one of the main drivers of economic and social development worldwide. They play a crucial role in generating jobs and wealth, and their size allows them to adapt quickly to changes in the market and consumer demands (Hernández-Linares & Arias-Abelaira, 2022; Saavedra & Tapia, 2014). However, SMEs face major challenges to access sources of finance, which limits their growth and competitiveness. It is thus relevant to belong to SCs in order to access improvement flows that favor their growth and development. In this sense, the inclusion of SMEs in SCs can facilitate access to finance by having the support of a large corporation that governs the SC and have the benefit of guaranteed long-term contracts (Romero-Luna, 2009). Additionally, SMEs obtain further benefits by being integrated in the SCs, such as access to other markets, greater demand and price stability, improved administration and planning practices, the creation of a credit history, and access to training and technical assistance (Inegi, 2018). Furthermore, this study is of great interest for stakeholders, including banks, SMEs, commercial partners, employers, educational institutions, and public administrations, as it provides them with relevant information on current trends in SCF. This makes it possible to identify commercial opportunities and guide policies. These contributions take on particular relevance in the complex environment SCs are facing in the post Covid-19 era and in the new geopolitical context characterized by the conflict between Russia and Ukraine.

To respond to the research question, the article is organized as follows. Section 2 presents the literature review on theoretical approaches to SCF and the bibliometric analysis. Section 3 outlines the methodology and offers information on the methods used to select the data and analysis techniques. Sections 4 and 5 show the results and the discussion, respectively, based on analysis of science mapping. Finally, section 6 summarizes the conclusions, limitations, and future lines for

research.

2. Literature Review

2.1. Theoretical approaches in supply chain finance

Together with the expansion of the SCF market over the last two decades, interest in this field of knowledge has been growing among academics. The number of scientific articles focusing on SCF has increased significantly. In the literature, there are many attempts to develop generalized views of SCF, both from a finance-oriented perspective (More & Basu, 2013) and a Supply Chain perspective (Wuttke et al., 2013a). However, these works are relatively scarce, and tackle their analysis without providing a comprehensive framework for study. Moreover, they still do not bridge the gap between both perspectives, that is, they do not offer either a holistic reference framework (Gelsomino et al., 2016a; Xu et al., 2020), or consensus on the terms used by the scientific community. With this high degree of fragmentation in mind, it is imperative that the volume of quality research available is organized in a unified literary corpus for future research (Gelsomino et al., 2016b; Parida et al., 2021).

Historically, SCF has been studied from three different approaches, ranging from the general to the specific (Liebl et al., 2016). (1) Financial Supply Chain Management, centered on the supplier/buyer relationship, particularly the cashflow that accompanies the physical supply of products (Thangam, 2012; Wuttke et al., 2013b). (2) The optimization of working capital and liquidity of the commercial parties in SCs (Supply Chain Financing), which includes financing before and after product dispatch (Meijer & Bruijn, 2013; Moon, 2022; More & Basu, 2013). (3) Financing for suppliers under Reverse Factoring schemes (Gelsomino et al., 2016a; Gomm, 2010; Huang et al., 2022; Klapper, 2006; Liebl et al., 2016; More & Basu, 2013; Tanrisever et al., 2015; Pérez-Elizundia et al., 2020; Wuttke et al., 2013b), which involve the assignment of collection rights to financial intermediaries based on the credit strength of a large buyer (Supplier Finance).

The topics surrounding SCF consider financial collaboration (Jin et al., 2019; Lampón et al., 2021; Pérez-Elizundia et al., 2023; Wandfluh et al., 2016), particularly trust and transparency (Dello Iacono et al., 2015; Liebl et al., 2016), and the search for a reasonable balance between payment terms and interest rates for the parties involved (Lampón et al., 2021; Shuzhen et al., 2014). Another instrument that is closely linked to SCF is Trade Credit, which has also been used and researched for many years (Cotler, 2015; Gelsomino et al., 2016a y 2016b; Klapper, 2006; Rodríguez-Rodríguez, 2008; Wuttke et al., 2013b). In addition to these dominant instruments (Reverse Factoring and Trade Credit), there are other emerging instruments for SCF, such as inventory finance (Buzacott & Zhang, 2004; Chen & Cai, 2011; Hofmann & Locker, 2009; Modansky & Massimino, 2011; Yan & Sun, 2013). We found no evidence of studies specializing in SCF in SMEs, or central considerations regarding their size, age, or ownership regime, although there is evidence of a growth in general study of family firms as a unit of analysis (Araya-Castillo et al., 2022).

2.2. Finance in supply chains and bibliometric studies

This section covers several bibliometric studies on SCF, from both a theoretical and methodological perspective. Xu et al. (2018) identified four major directions for research in all the studies on SCF: (1) Deterioration of the inventory model in the trade credit policy framework; (2) Inventory decisions with trade credit policy in more complex situations; (3) Interaction between replenishment decisions and deferred payment strategies in SCs; and (4) Functions of the finance service in SCs.

Liu et al. (2015) explored a new vision of the SCF field in China, the leading country in terms of scientific production on SCF. Parida et al. (2021) proposed a research framework based on the finance perspectives of the buyer and of the SCs, where the main contribution was identification of operational coverage strategies that lead towards sustainable SCF in line with the Sustainable Development Goals, as well as some of the emerging research areas in which SCF is still at a fledgling stage of application.

Tseng et al. (2021) proposed a bibliometric analysis from a regional geographical perspective in order to illustrate a general concept of sustainable SCF, which also revealed certain key indicators for continued improvement. Minh (2022) identified that technology development is a research trend for SCF, together with *FinTech* topic areas, such as data analysis, digital data storage, artificial intelligence, and *Blockchain*, among others.

Huang et al. (2022) highlighted that, in the context of constantly evolving SCF, existing literature reviews are limited due to the lack of integration of recent findings from 2010 to 2021. Prompted by this limitation, they attempt to fill this gap by researching new achievements that have been reported in the current literature.

In sum, all these works provide interesting ideas and trends in the SCF area. However, all of them warn of the limitations in the search criteria as they do not consider the literary and semantic fragmentation that prevails in this field of study.

Table 1 summarizes the main bibliometric studies on SCF, the most relevant aspects, and the types of analysis and technique used.

Table 1. Main bibliometric studies on SCF

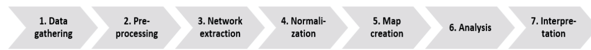
Work	Relevant aspects	Type of analysis and bibliometric technique
Huang et al. (2022)	Exhaustive study of all aspects of SCF, which warns of the lack of integration of SCF findings in the last decade and the need to update the SCF framework.	Exhaustive systematic literature review, combined with descriptive and content analysis in four stages: 1. Question formulation. 2. Document location. 3. Choice and assessment of materials. 4. Analysis and synthesis of contents.
Liu et al. (2015)	New view of China—leader in scientific production on SCF.	Analysis of contents in leading articles on China, comprising four steps: 1. Journal selection. 2. Article identification. 3. Category classification. 5. Topic assessment.
Minh (2022)	Study that identifies China as the leading country in SCF research and science and technology as the trend for research in this field.	Systematic literature review, network maps of international affiliation, and keywords, supported by the *VOSviewer* visualization tool.
Parida et al. (2021)	Sustainable SCF with a finance perspective	1. Exhaustive and systematic literature review. 2. Networks analysis and cluster analysis, citation and co-citation *analysis* supported by *VOSviewer, CiteScape* and *Tableau & CitNetExplorer* visualization tools. 3. Triangulation method to identify research perspectives.
Tseng et al. (2021)	Sustainable SCF with regional perspective.	1. Bibliometric analysis based on big data in the literature. 2. Keyword co-occurrence analysis supported by *VOSviewer*. 3. Hybrid analysis (quantitative and qualitative) of fuzzy methods for tackling uncertainty of the context, based on: i) Fuzzy Delphi method. ii) Entropy weight method. iii) Fuzzy decision-making trial and evaluation laboratory.
Xu et al. (2018)	Interrelation between inventory models and trade credit policies.	Exhaustive systematic literature review combined with bibliometric analysis, network analysis (citation and co-citation), and content analysis, supported by BibExcel analysis tool.

Source: Elaboration by the authors

3. Material and Method

This paper uses bibliometric analysis to define the theoretical structure of SCF based on performance and science mapping analyses, and co-citation and contents analyses with the support of SciMAT software. Bibliometric analysis is defined as the part of Scientometrics that uses mathematical and statistical methods to analyze the scientific activities in a research field (Callon et al., 1991; Cobo et al., 2011), and allows perspectives to be opened up on the contents and structure of that field (Mazandarani & Royo-Vela, 2022). The SciMAT software (Cobo et al., 2012) is used for its flexibility when selecting measures for obtaining and visualizing bibliometric networks, which is why it has become a popular tool among leading authors in bibliometric analysis (Aparicio et al., 2019; Arteche-Bueno et al., 2019; Cobo et al., 2014; López-Herrera et al., 2012; Mazandarani & Royo-Vela, 2022; Paule-Vianez et al., 2020). A performance analysis was developed using various basic bibliometric indicators (number of documents published, number of citations received, etc.) and the *h*-index. For a better interpretation of the results and categorization of the issues detected, both Strategic Diagrams and Topic Networks were used. The process of applying science mapping analysis to define the conceptual structure of SCF consisted of seven steps (see Figure 1).

Figure 1. Workflow of science mapping analysis



Source: Cobo et al. (2012)

First, the various sources and databases for data gathering were identified, which, in our case, was Web of Science (Step 1). Usually, data extracted from bibliographical sources contain errors, which means data pre-processing must be performed, including filtering out duplicated or misspelt keywords (Step 2). A bibliometric network is then constructed using one unit of analysis, which, in our case, was the keyword. In this work, a cooccurrence relationship of terms has been used (Step 3), which is produced when two terms appear simultaneously in at least the title or the abstract of a specific article such that the more articles the terms coincide in, the stronger those terms are considered as being related to each other (Callon et al., 1991; Cobo et al., 2012; Coulter et al., 1998).

To obtain significant information about the area through the analysis, the bibliometric network obtained must be normalized (Step 4), in order to relativize the relationships between two units of analysis (Cobo et al., 2011), attaching more importance to those units with a low frequency and a high frequency of cooccurrence compared to those units with a high frequency and a low frequency of cooccurrence (Cobo et al., 2012). The measure for normalization used in this work is the e_{ij} equivalence index (Callon et al., 1991), expressed by the equation $e_{ij} = c_{ij}^2 / c_i c_j$, where c_{ij} represents the number of documents in which two words i and j cooccur, while $c_i c_j$ represents the number of documents in which each word i and j appears. In this way, if two words always appear together, the index will be equal to one, and if they never appear together in any document, the index is equal to zero.

Once the network is normalized, the topics can be extracted by using clustering techniques to divide the set of elements into different subsets (Step 5), whose nodes are closely linked to each other (clusters), and scarcely linked to the rest (Callon et al., 1991; Cobo et al., 2012; Mazandarani & Royo-Vela, 2022). This work uses the clustering algorithm based on Simple Centers, which has the advantage of assigning the word most related to the rest as the name of the topic (Cobo et al., 2012). To assess the position of each item in the area, we present the different clusters in what is called the Strategic Diagram (Callon *et al.*, 1991), which allows us to place topics according to their centrality (X axis) and density (Y axis). Centrality measures the degree of interaction of a topic with the others, as well as its importance in the overall development of the scientific field (Cobo et al., 2012). Density measures the degree of cohesion for a topic, *i.e.*, the internal force of the different links of the nodes within a cluster and can be understood as the topic's measure of development. (Cobo et al., 2012). In this context, the literature classifies the topics in four categories in the Strategic Diagram (Callon et al., 1991; Cobo et al., 2011; Coulter et al., 1998):

— Driving topics: located in the upper right quadrant and showing strong centrality and density. They are well developed and important to the scientific field.

— Specialized topics: topics that are highly developed and specialized but isolated from the rest are located in the upper left quadrant. These topics show low centrality but high density and are marginally important to the scientific field.

— Emerging or declining topics: in the lower left quadrant and showing low centrality and density. These are little developed and marginal.

— Basic or overarching topics: located in the lower right quadrant, showing strong centrality but low density. These are interconnected with the other topics but scarcely developed.

In a bibliometric network, each unit of analysis can have a group of documents associated with it, which are used for the performance analysis (Cobo et al., 2012). This study has used bibliometric indicators for quality based on the number of documents associated with a topic, citations obtained, and the *h*-index (Cobo et al., 2012) as a later measure of performance (Step 6). Once the science mapping analysis is finished, the results and the maps must be interpreted using the experience and knowledge of the authors in order to discover and extract useful information that can be applied in decision making (Step 7).

We performed a longitudinal analysis covering 1970 to 2021 (full period), divided into three subperiods: 1970 to 2000 (SP-1), 2001 to 2018 (SP-2), and 2019 to 2021 (SP-3). Although there are some works on aspects related to SCF from the beginning of the 20th century, they are few and far between. It was towards the 1970s when formal research into SCF began to emerge (Huang et al., 2022; Xu et al., 2018), and so 1970 was chosen at the start point for this study. The year 2000 was chosen as the first cut-off point because publications on SCF, which had been practically nonexistent in the 20th century, began to become relevant as the new century began. This was when the first formal definition of this field of study emerged(Xu et al., 2018). Likewise, 2018 is the second cut-off point because the first years of this century saw relatively scant scientific pro-

duction on SCF. It should be noted that, in order to detect the topics of a discipline correctly, the defined subperiods need to be more or less in line with the number of documents (Cobo et al., 2012; López-Herrera et al., 2012). For a longitudinal analysis, division into sub-periods all of the same number of years does not make sense, bearing in mind the limited number of articles published in the last century and during the first decade of this one. Additionally, this criterion is justified by previous studies on science mapping analysis (Arteche-Bueno et al., 2019; Cobo *et al.*, 2011, 2012).

This study uses the *Web of Science* (WoS) database, property of Clarivate Analytics, which enjoys recognition for works of this type (Arteche-Bueno et al., 2019; Paule-Vianez et al., 2020; Van Raan, 2014). WoS allows access to current and retrospective information in the highest impact research journals since 1900 and has the most complete quality coverage of all the scientific disciplines, including finance. The search only included articles indexed in the SSCI and ESCI databases, thus ensuring the high quality of the literature reviewed. One limitation that we must warn of is that the databases with international recognition prioritize the English language and omit contributions which are more local in nature and that identify particularities of the object of study.

The selection of search chains and keywords bore in mind that the SCF topic area does not have a unified concept and is seen differently by authors depending on their research approach (Gelsomino et al., 2016a; Minh, 2022; Pérez-Elizundia et al., 2020). Moreover, SCF is made up of the terms "*Supply Chain*" and "*Finance*" and is interdisciplinary, straddling logistics, SC management, and finance within SCs (Hofmann & Johnson, 2016; Liebl et al., 2016). To ensure that both terms are completely captured by the keywords, we chose two search criteria according to both previous bibliographical reviews on similar subjects (Minh, 2022; Xu et al., 2018), and the professional and research experience of the authors in the field of SCF and Global Value Chains within business management and the economy.

The first search criterion contains terms that characterize the SCF topic area introduced at the beginning of this section, such as *Factoring*, *Inventory Finance*, and *Trade Credit*, in line with the criteria chosen in the bibliometric study by Xu et al. (2018). The second search criterion contains terms related with Finance and which are in turn associated with Supply Chain, with the following search string: (Terms associated with SCF) OR (Terms associated with *Finance* AND Terms associated with *Supply Chain*) (Table 2).

The search was performed by topic using the Topic (TS) command in WoS, which includes terms from the research topic area located in the title, in the abstract, and in the keywords. It should be clarified that we opted to use the operator NEAR/x, an operator modality of AND. NEAR/x was used to find records that appear in the same document, but where the terms joined by the operator are within a particular number of words from each other. Thus, the operator NEAR/8 was used (Table 2). The search TS = (financ* NEAR/8 "supply chain*") (i) finds records that contain financ* and supply chain* that are at most 8 words from each other, *e.g.*, "It is critical for automobile industry supply chains to find seamless financing to operate", and (ii) excludes records that contain, for example, the term "financial accounting" at the beginning of an article's abstract and the term "supply chain" at the end. Despite the possibility of some records being excluded from the search, the number of results obtained allowed us to identify the main topic area of SCF dealt with in the literature. In order to guarantee that the NEAR/8 operator captured the records associated with SCF and disregarded those that are not, a visual review was performed on the titles and abstracts of a random sample of 50% of the records obtained. Later, with the help of SciMAT, it was possible to filter the records base even further.

Table 2. Search strings and key terms

Search criteria	Key terms	Search strings
Search Criteria 1	SCF related terms	"supply chain financ*" OR "supplier* financ*" OR "receivables financ*" OR "invoice discount*" OR "invoice financ*" OR "inventory financ*" OR "financial supply chain management" OR "reverse factoring" OR "factoring financ*" OR "financ* supply chain*" OR "financ* the supply chain*" OR "channel financ*" OR "value chain financ*" OR ("factoring" AND "financ*" AND "supply chain*") OR ("factoring" AND ("SME" OR "SMEs"))
	OR	
Search Criteria 2	Financing related terms	financ* OR "buyer* financ*" OR "seller* financ*" OR "working capital" OR "financ* risk" OR "credit risk" OR "commercial credit" OR "trade credit" OR "trade-credit" OR "bank credit" OR "bank-credit" OR "credit" OR "lend*" OR "early payment*" OR "delay* payment*" OR "delay* in payment*" OR "payment* delay*" OR "deferred payment*" OR "payment* deferral" OR "advanc* payment*" OR "capital constrain*" OR capital-constrain* OR "financ* constrain*" OR financ*-constrain* OR "cash conversion cycle*"
	NEAR/8	
	Supply Chain related terms	"supply chain*" OR "value chain*" OR "production network*"

Source: Elaboration by the authors from the advanced search engine of WoS

4. Analysis and Results

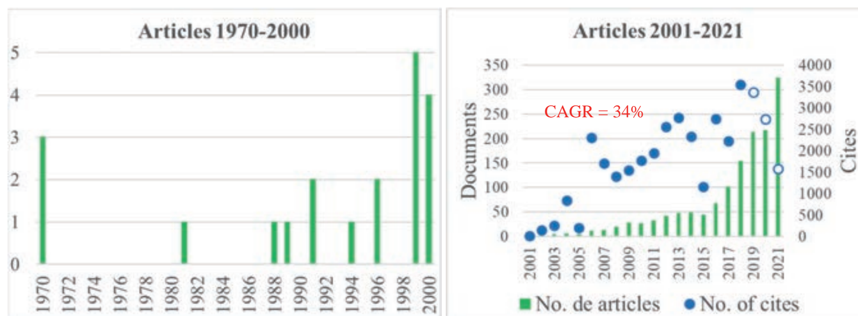
This article contributes to the identification of leading, new, and emerging topics that currently characterize SCF based on more robust search criteria than those used previously in the literature. Indeed, Parida et al. (2021) warned that no other study on SCF had used an exhaustive combination of keywords as search criteria in the literature review as they did not consider all the financial and operational aspects. This work seeks to contribute towards correcting those previous shortcomings.

4.1. Historical evolution and performance analysis of the scientific production

The trends in the evolution and development of SCF have been very uneven throughout its history, characterized by an incipient interest in the mid-20th century, followed by accelerated growth in the last two decades. It can be seen that during the 20th century, no significant development was recorded in this area, with the first article being published in 1912 in the Journal of Accountancy followed by very sparse production until the 1980s, when it began to pick up marginally to reach a maximum in 1999 of five articles (Figure 2). The citations shown for articles published in the last century are practically nil. As this field of knowledge began to emerge, it can be observed that the SCF scientific community tends to use few keywords in its publications (1 or 2 words). The dearth of information in this subperiod prevents an analysis of word cooccurrence or scientific mapping being performed.

In the 21st century, scientific production in the field shows a compound annual growth rate (CAGR) of 34% from 2001 to 2021, and accelerated growth from 2015 (39%). 81.2% of all production on SCF is concentrated in the last eight years (2014-2021), while citations grow at an accelerated pace from the turn of the century, showing a maximum of 3,548 in 2018. An upward trend is identified from 2001 to 2018 (blue circles). This analysis reveals growing interest and development in the topic area, showing that SCF represents an important area for research in the future. It should be noted, however, that the more recent the publication date, the lower the number of citations due to the shorter time that articles have been available to the scientific community since first appearing.

Figure 2. Number of SCF studies on Web of Science database



Source: Elaboration by the authors based on WoS output

After obtaining the evolution data described above, the keywords were classified. The prepared file from WoS was imported into SciMAT to carry out the necessary corrections, categorizations, and analysis. Thus, duplicated keywords in articles were omitted in a filtering process to improve the accuracy and quality of the results (Cobo et al., 2012). The result was a total of 4,567 keywords that appeared in at least one document, of which 50 were concentrated in 34% of the total appearance frequency for keywords over the whole 1970-2021 period.

Using the word cloud technique, the ten most used keywords in the SCF field are *Trade Credit*, *Supply Chain Finance*, *Supply Chain Management*, *Supply Chain*, *Management*, *Impact*, *Model*, *Performance*, *Policy*, and *Risk* (Figure 3). It is worth noting that the first four keywords in this list coincide with those identified by Minh (2022), a leading author in SCF Bibliometry.

Figure 3. Top keywords in SCF field

Source: Elaboration by the authors from both "Words manager" module provided by SciMAT and www.nubedepalabras.es

Analyzing the authors with the greatest scientific production in line with SCF (Table 3) reveals that the author with the most articles is Xiangfeng Chen, with 16 (left-hand section of the table). The most cited authors are Norris Krueger, Michael Reilly and Alan Carsrud with 2,116 citations from an article called "Competing models of entrepreneurial intentions" on incentives for entrepreneurship (right-hand section). However, it should be noted that although Table 3 shows the authors with the greatest production in topics related to SCF, Minh (2022) and Parida et al. (2021) identify the leading authors in SCF as a main research line, among whom are Hans-Christian Phol, Moritz Gomm, Luca Mattia Gelsomino, Alessandro Perego, Angela Tumino, Nina Yan, Xinhan Xu, David Wuttke, Dileep More, Preetam Basu, Federico Caniato, and John Liebl.

Table 3. Performance by authors

Authors with most articles			Authors with most citations		
Authors	Documents	Cites	Authors	Documents	Cites
Chen, Xiangfeng	16	784	Krueger, Norris F.	1	2,116
Bi, Gongbing	11	134	Reilly, Michael D.	1	2,116
Hofmann, Erik	10	384	Carsrud, Alan L.	1	2,116
Yan, Nina	10	223	Boons, Frank	1	923
Yan, Honglin	10	107	Ludeke, Florian	1	923

Source: Elaboration by the authors from the "Authors manager" and "Documents manager" modules provided by SciMAT

The five journals with most articles published include 17.5% of all articles (Table 4). They prioritize subjects of industrial organization, administration, and sustainability of SCs as a response to growing concern and increased awareness surrounding environmental protection (Zhao, 2018). That is, topics related directly to SCs, which is why these are the most productive journals on questions of SCF. This centers the subject within the area of logistics and production process administration.

Table 4. Most productive journals in the area

Journal	Launch date	Documents	%
International Journal of Production Economics	1991	89	6.2
Sustainability	2009	59	4.1
Computers & Industrial Engineering	1976	43	3.0
International Journal of Production Research	1961	32	2.2
Journal of Cleaner Production	2003	29	2.0

Source: Elaboration by the authors from the module "Journals manager" of SciMAT

4.2. Science mapping analysis

Science mapping analysis is a technique that aims to follow a scientific area over time in order to understand its structure, development, and its main participants (Noyons et al., 1999). The different types of information that can be used are known as units of analysis. The unit of analysis chosen for this study is "keyword".

To perform an analysis using SciMAT, both a Strategic Diagram and Thematic Network are constructed. These make it possible to identify the main topics within a scientific field, showing their conceptual and cognitive aspects (Cobo, 2012). This analysis included both the whole 1970-2021 period and the 2001-18 (SP-2) and 2019-21 (SP-3) subperiods, shown in Figures 4, 5, and 6, respectively. The volume of the spheres is proportional to the number of documents associated with each topic in both the Strategic Diagram and the Thematic Network, and, in the latter, the thickness of the link between two spheres is proportional to the equivalence index, *i.e.*, the degree of co-occurrence of two keywords in the same document.

1970-2021 period

Based on the Strategic Diagram (Figure 4a) and quantitative metrics (Table 5) for the entire 1970-2021 period, it is notable that the SCF topic area has a low centrality and density and is subordinated to SCM (driving topic) as a field of knowledge of greater breadth, centered on supply chain logistics and processes administration management. Regarding the metrics for the number of documents, later citations, and impact (*h*-index), it can be observed that : (1) Supply Chain Management is the main driving topic, standing out in relation to all others in terms of number of documents, citations, and *h*-index, followed by Delayed Payments, Coordination, and Sustainability; (2) The specialized topics show that SCF has positive results in the three criteria and Data Management scores low in them; (3) The basic and overarching topics, Products and Optimiza-

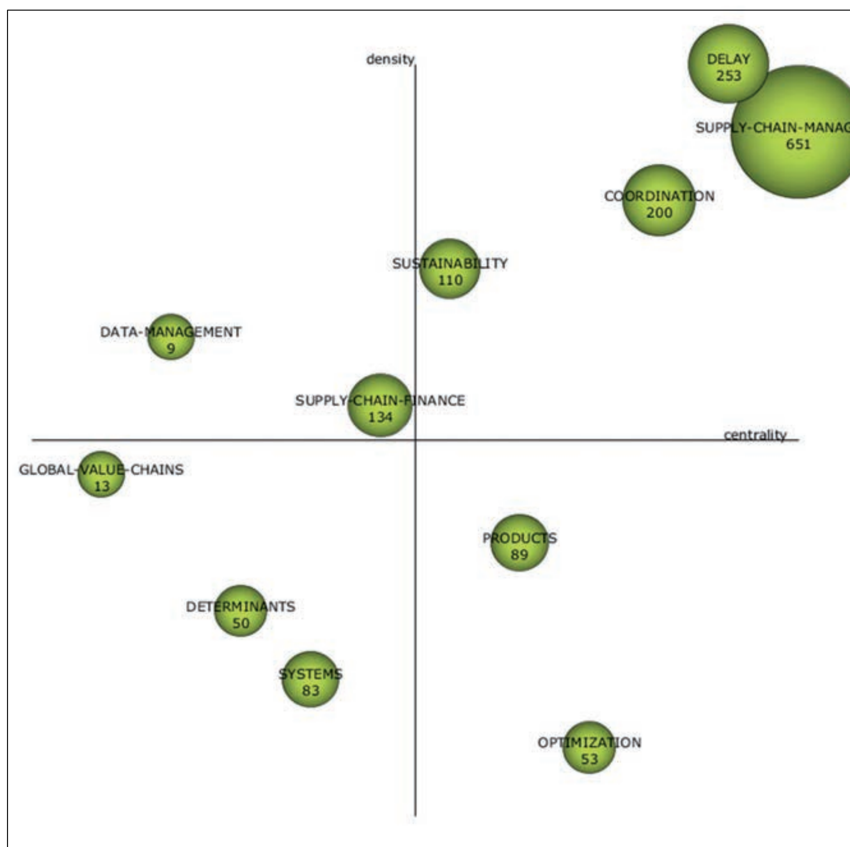
tion, were found in fewer documents, obtained fewer citations, and had a lower subsequent impact; (4) The emerging or declining topics Global Value Chains, Determinants, and Systems showed poor performance in all three criteria; (5) The topics with high centrality and number of received citations show strong correlation.

From the thematic network (Figure 4b), a close relationship can be observed that exists between one of the topics emerging in the Strategic Diagram and the following subtopics:

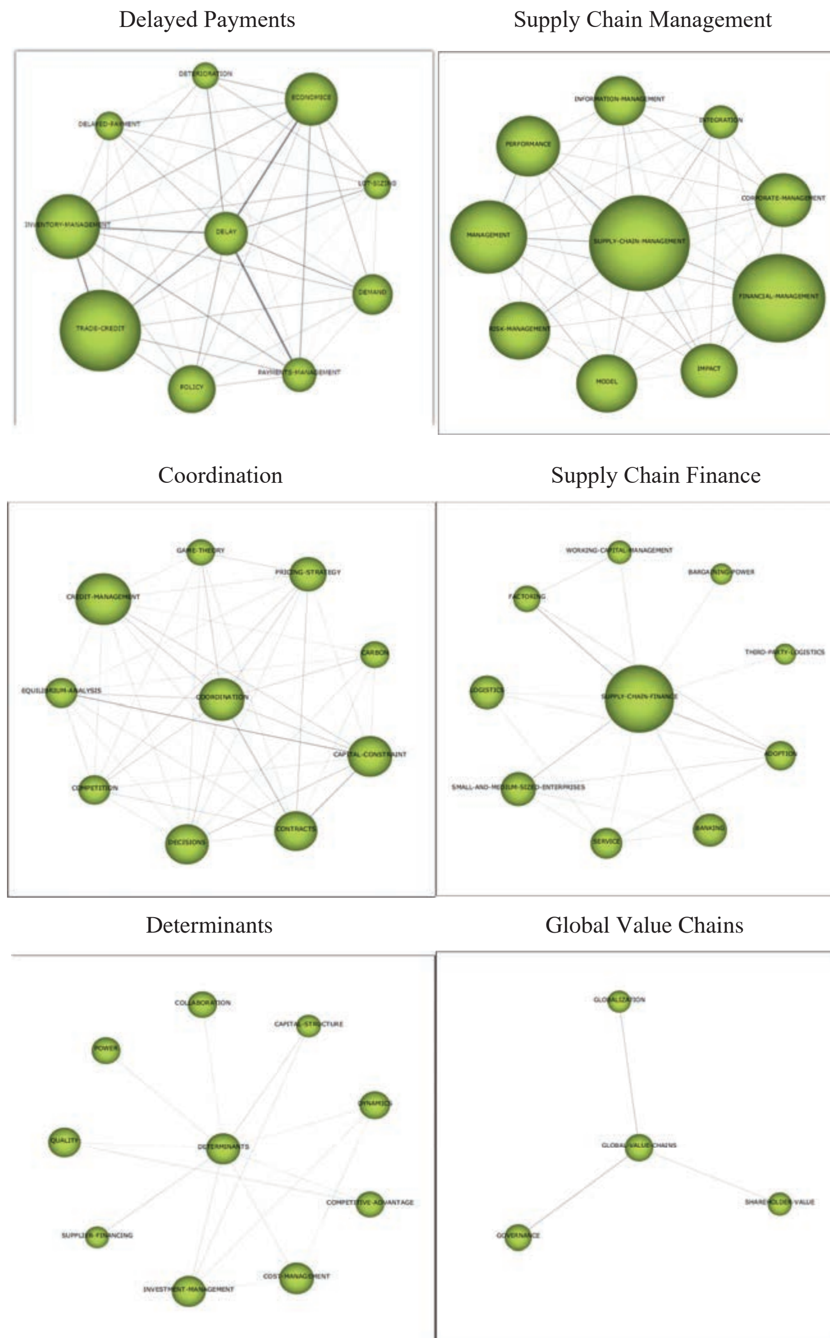
(1) *Delay with Trade Credit*, *Inventory Management*, *Payments Management*, *and Economics;* (2) *Supply Chain Management with Financial Management*, *Performance*, *and Risk Management;* (3) *Coordination with Credit Management*, *Capital Constraint*, *and Equilibrium Analysis;* (4) *Supply Chain Finance with Factoring*, *Working Capital Management*, *Banking*, *and SME;* (5) *Determinants with Collaboration*, *Competitive Advantage*, *and Supplier Financing;* and (6) *Global Value Chains with Globalization*, *Governance*, *and Shareholder Value.*

Figure 4. Strategic diagram and thematic network of the SCF field 1970-2021

a) Strategic diagram



b) Thematic network



Source: Elaboration by the authors from the “Analysis view” module provided by SciMAT

Table 5. Performance metrics 1970-2021

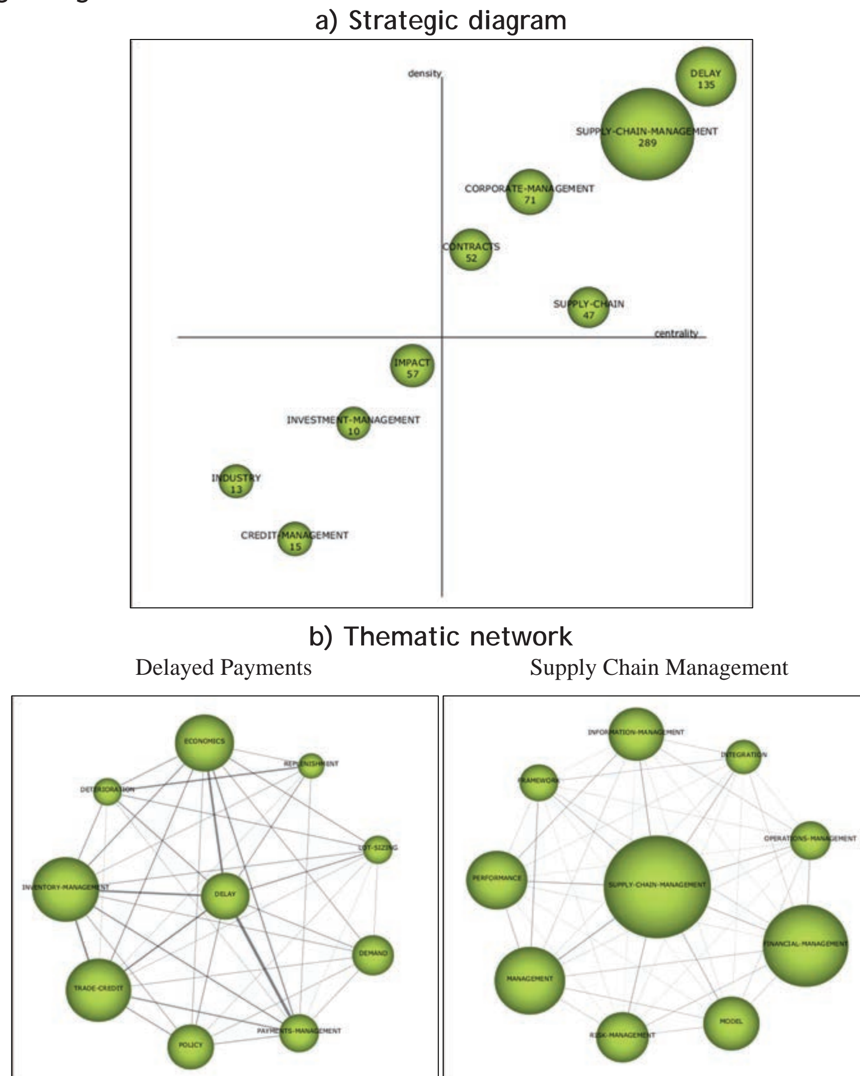
Cluster	Theme type	No. Doc.	No. Cit.	h-Index
Supply Chain Mgmt.	Motor	651	19,339	69
Delay	Motor	253	7,711	49
Coordination	Motor	200	4,991	39
Sustainability	Motor	110	5,577	33
Supply Chain Fin.	Specific	134	2,968	30
Data Management	Specific	9	621	8
Products	Basic / Transv.	89	2,976	29
Optimization	Basic / Transv.	53	2,005	22
Systems	Emerg./Decl.	83	2,674	23
Determinants	Emerg./Decl.	50	1,297	19
Global Value Chains	Emerg./Decl.	13	390	8

Source: Elaboration by the authors from the “Analysis view” module provided by SciMAT

2001-18 (SP-2) and 2019-21 (SP-3) subperiods

An analysis of the Strategic Diagrams for SP-2 (Figures 5a and 6a, and Table 6) reveals that the most relevant driving topics in terms of quality indicators start with *Supply Chain Management*, which is a long way ahead of *Delayed Payments*, *Corporate Management*, and *Supply Chain*. The driving topics for SP-3 are *Trade Credit*, *Corporate Management*, and *Management*, a long way ahead of *Pricing Strategy*. It is worth highlighting that the topic of SCF no longer appears in the strategic diagrams of any subperiod but in the thematic networks as a marginal topic associated with *Trade Credit* (2019-21). Likewise, the topic *Corporate Management* is also notable not only for prevailing during both subperiods but also because it becomes significantly strengthened in the second, increasing from 71 to 216 documents (Table 6). It can also be seen that, despite the major relevance of the *Supply Chain Management* topic in SP-2 as a driving topic, it does not appear in SP-3. However, it does represent an important topic associated with the thematic network for *Corporate Management*.

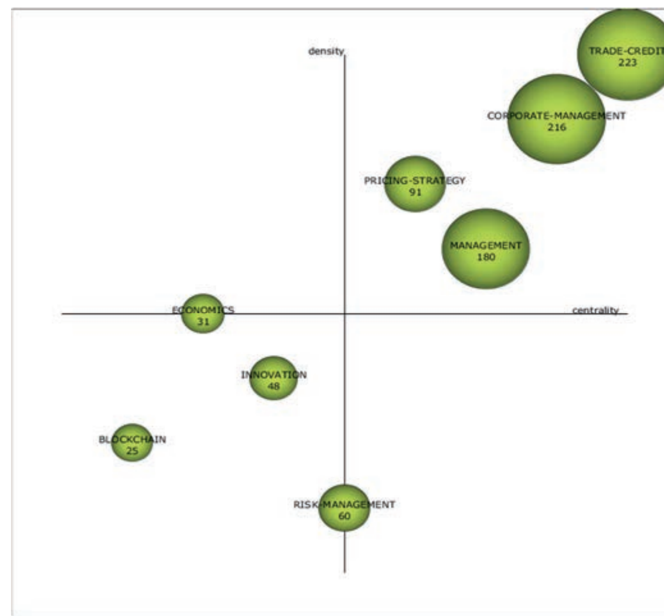
Figure 5. Strategic diagram and thematic network of the SCF field 2001-2018



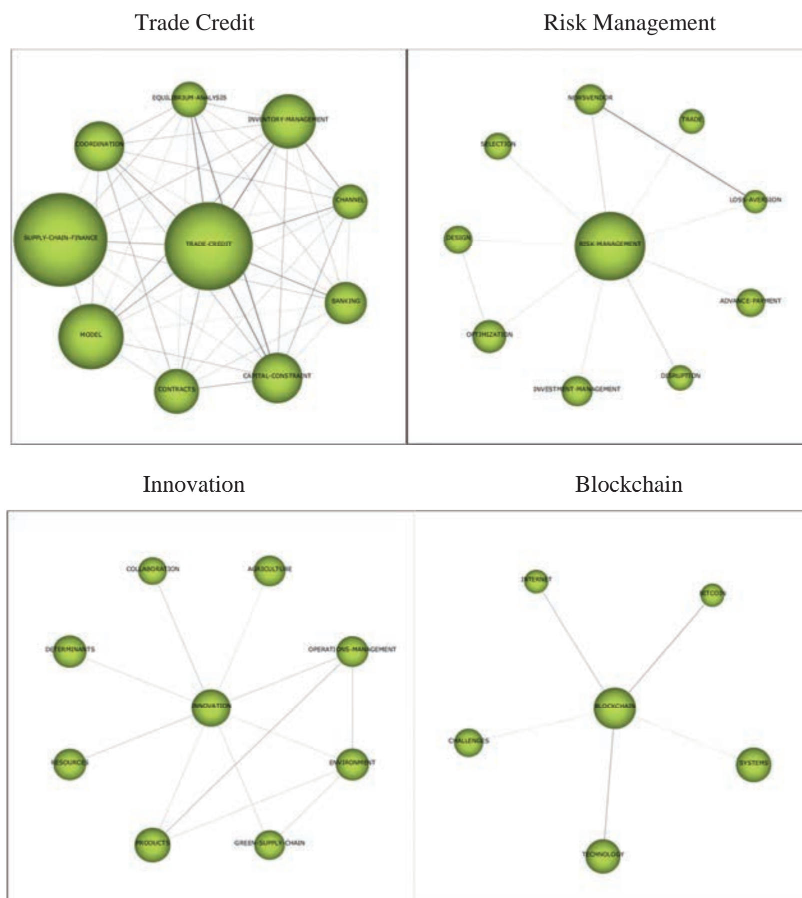
Source: Elaboration by the authors from the “Analysis view” module provided by SciMAT

Figure 6. Strategic diagram and thematic network of the SCF field 2019-2021

a) Strategic diagram



b) Thematic network



Source: Elaboration by the authors from the "Analysis view" module provided by SciMAT

Regarding the topics with low centrality and density located in the third quadrant of the Strategic Diagram for SP-2 (*Credit Management*, *Impact*, *Industry*, and *Investment Management*), they can be considered as in decline as they do not reappear in SP-3. The topics located in the same quadrant for SP-3 (*Blockchain*, *Economics*, *Innovation*, and *Risk Management*), can be considered as emerging on the basis of the new trends identified in the literature review.

Table 6. Performance metrics per subperiod

Cluster	Subperiod 2001-2018				Subperiod 2019-2021			
	Theme type	No. Doc.	No. Cit.	h-Index	Theme type	No. Doc.	No. Cit.	h-Index
Blockchain	-	-	-	-	Emerg./Decl.	25	223	8
Contracts	Motor	52	2,519	28	-	-	-	-
Corporate Mgmt.	Motor	71	4,321	29	Motor	216	2,438	28
Credit Mgmt.	Emerg./Decl	15	536	11	-	-	-	-
Delay	Motor	135	6,275	47	-	-	-	-
Economics	-	-	-	-	Emerg./Spec.	31	240	9
Impact	Emerg./Decl	57	2,845	30	-	-	-	-
Industry	Emerg./Decl	13	578	10	-	-	-	-
Innovation	-	-	-	-	Emerg./Decl.	48	526	12
Investment Mgmt.	Emerg./Decl	10	356	9	-	-	-	-
Management	-	-	-	-	Motor	180	2,145	26
Pricing Strategy	-	-	-	-	Motor	91	963	18
Risk Mgmt.	-	-	-	-	Emerg./Basic	60	688	16
Supply Chain	Motor	47	2,192	27	-	-	-	-
Supply Chain Mgmt.	Motor	289	14,503	66	-	-	-	-
Trade Credit	-	-	-	-	Motor	223	2,439	28

Source: Elaboration by the authors from the “Analysis view” module provided by SciMAT

5. Discussion

The findings in this study suggest that scientific production on SCF was sluggish throughout the last century and the beginning of this one, which expresses how the phenomenon under study has evolved in reality. Although the history of research into SCF dates back to the 1970s (Huang et al., 2022; Xu et al., 2018), the first formal definition does not appear until the start of the 21st century (Xu et al., 2018). Budin and Eapen (1970) investigated the impact of trade credit and inventory management on generated cash flow. Haley and Higgins (1973) used a lot-size model to study the relationship between trade credit policy and inventory policy. Likewise, vertical integration of intra-firm SCs in the case of firms operating in the international market, and local market features in the case of SMEs, could explain the lack of interest in a topic which was not a challenge at the time. Financing was resolved by firms’ internal administrative logistics and the instruments of the traditional banking system. However, the globalization that began with the financial crisis of the 1970s has driven, beyond trade, a fragmentation of production and service delivery, making the administration of finance between companies more complex due to the growth in subcontracting. The relationship with suppliers goes beyond the classical one of buying and selling and has evolved towards associative and cooperative mechanisms. The SC evolves from intra-firm logistics to an inter-firm one, which leads to a need to clarify ad hoc finance mechanisms.

Current research into SCF dates back to the last global financial crisis of 2008-2009 (Huang et al., 2022). Due to a lack of knowledge on working capital management, firms and their SCs suffered liquidity problems and found themselves with immense difficulties accessing finance from banks (Gelsomino et al., 2016a; Liebl et al., 2016; More & Basu, 2013; Wandfluh et al., 2016).

Regarding scientific production on SCF, it has shown a notable increase since 2014 as a result of uncertainty in the global financing of SCs (Olan et al., 2022), and it is possible to appreciate concerns about the new finance mechanism of the Digital Economy, the role technological advances play in accelerated adoption of SCF in the post-pandemic context, and the challenge of financing ecological projects that contribute to sustainability goals. The need to deal with these questions became increasingly urgent for firms, especially for SMEs with difficulties accessing finance (Caniato et al., 2016; Gelsomino et al., 2016a), a question that has been favorably tackled by SCF.

Regarding the two subperiods analyzed in this study, SP-2 is particularly important in economic terms because it falls between two major crises: 2001 (dot com bubble) and 2007-2009 (real estate bubble), and the contraction or regionalization of global value chains. During this period, the presence of large global suppliers (especially from Asia) grew and, in this sense, SC analysis paid special attention to these economic agents. Likewise, development of the topic is concentrated in SC corporate administration. This can be explained by the growth in large supplier firms, contracts associated with the complexity of lo-

gistics, and links to payment delays. For SP-3, inventory models integrated into SCs consider payment delays and price strategies as key variables that define the success of a commercial relationship between the trading parties in SCs (Chen & Kang, 2010). Additionally, demand is considered in the literature as being sensitive not only to the price offered to the buyer, but also the publicity costs incurred and the financial cost for deferring the payment. Given that SCF is now increasingly attracting attention, the volume of literature has increased as a consequence (Huang et al., 2022). However, research into SCF or the interface of operations and finance is still in its infancy due to its novel character. Furthermore, it should be noted that the challenges in financing go beyond the realm of the firm and enter matters of public policy on regulation.

Likewise, through the keyword analysis and word cloud, this study evinces great semantic fragmentation in the SCF field, on top of the disconnection between the theories that attempt to explain it. The large number of terms arising around SCF contain similar, but unclear, meanings, creating confusion in semantic aspects (*e.g.*, *Supply Chain Finance*, *Supplier Finance*, *Receivables Finance*, *Factoring*, *Reverse Factoring*, *Confirming*, etc.). One of the most commonplace instruments for SCF is *Reverse Factoring* and both terms (SCF and *Reverse Factoring*) are often used indistinctly (Huang et al., 2022), despite having different meanings. The concept of SCF is partially isolated from all the other topic areas and is subordinated to SCM as a field of knowledge of greater breadth, which has to do with logistics and production process management in SCs. This can also be seen in the most productive journals on SCF matters, which are characterized by being about production process management (Table 4). Indeed, the strategic diagrams for each subperiod show that SCF does not even emerge as a relevant topic, but rather as a marginal one in the thematic networks (Figures 5 and 6). The apparent dissociation for SCF from SCM could be due to a possible development of SCF rendered invisible by semantic questions derived from a high degree of literary fragmentation and a dearth of consensus on terms (Gelsomino et al., 2016a; Xu et al., 2020). This situation complicates the study of SCF and deepens the concern that studies on SCF are far from offering a comprehensive framework (Gelsomino et al., 2016a; Parida et al., 2021). This, in turn, highlights the need to classify, order, and unify the theories and terms that make up the field of SCF and the financing solutions that stem from it, thus managing a consensus definition that is widely accepted by the scientific and business community and which eases its understanding, analysis, and development.

Additionally, a close relationship can be seen in the thematic networks between SCF and *Factoring*, due to the latter being a tool in the SCF framework. Also of note is the relationship between SCF and SMEs due to the challenges that such firms have in their financing strategy, although the link between SMEs and *Factoring* is noticeable by its absence. There is, on the other hand, a relationship between the size of firms (SMEs), services, and *Banking*, pointing perhaps to more traditional models of financing given the relationship between *Banking* and SCF. This relationship, however, must be analyzed by considering the size and age of the firm, which are aspects that have considerable influence on financing decisions (Cassar, 2004).

Regarding delayed payment, this emerges as a driving topic in SP-2 and shows a close relationship with the *Trade Credit* topic in the thematic networks. This is because, in essence, trade credit consists of a short-term loan granted by a supplier that finances the acquisition of a good or service, allowing the buyer to defer payment, and it is considered one of the most widely used sources of liquidity by firms (Gelsomino et al., 2016b). In this sense, trade credit constitutes a form of financial disintermediation closely linked to SCF, and can be considered a valuable coordination tool within an SC. This form of finance is used more in countries with greater barriers for SMEs when accessing finance and mobilizes large volumes of funds (Klapper, 2006).

Finally, in line with the findings of other authors of bibliometric analyses (Minh, 2022; Xu et al., 2018), a preliminary analysis of more recent SCF studies (2019–2022) reveals that topics of great potential are emerging such as *Sustainability* (Parida et al., 2021; Tseng et al., 2021; Xu et al., 2018; Zhao, 2018) and new technologies like *Blockchain* (Du et al., 2020; Fabrizio et al., 2019; Rijanto, 2021), key elements for the future development of financial management, resilience, and stability in SCs within a framework of sustainability in the context of crises like those brought on by the Covid-19 pandemic and the conflict between Russia and Ukraine.

Indeed, practically all authors of bibliometric analyses agree on the importance of sustainability in SCs in the development of SCF as a response to the growing concern and greater awareness surrounding environmental protection (Tseng et al., 2021; Xu et al., 2018; Zhao, 2018). Parida et al. (2021) suggest that, in the context of the pandemic, the regulatory authorities and trading parties involved need to focus more on critical aspects of SCs to make them more sustainable. SCs are as strong as their weakest link and, according to Bickers (2021), the firms that form them are increasingly aware of the risks posed

by climate change. The data suggest that those firms with SC strategies oriented towards sustainability are better positioned to cope with the environmental disruptions that may occur.

Regarding new technology, several authors on Bibliometry agree that the emergence of *Blockchain* is a central topic area in SCF development (Minh, 2022; Parida et al., 2021; Tseng et al., 2021). Indeed, technological innovation is a constant in the SCF market, characterized by new players, *FinTech* and electronic platforms (Bickers, 2021), strengthened by *Blockchain* technologies that digitize global value chains (Hofmann et al., 2017). Likewise, given its level of security, *Blockchain* is highly likely to become an interesting technology in the future of SCF as when it is incorporated into public registries for both assets and accounts receivable assigned to third parties through SCF operations, it translates into increased legal certainty about the legitimacy of the invoices, thus reducing the risks of fraud through double discounts through *Factoring* (Lycklama et al., 2017). Bearing in mind the complex nature of SCs today, *Blockchain* is expected to speed up processes and make them more reliable (Cole et al., 2019; Kim & Laskowski, 2016). Indeed, the advance of this technology offers an opportunity for innovation in the development of the so-called *smart Factoring* (Hofmann et al., 2017), which is closely linked to the SCF topic field.

6. Conclusions

SCF is a fundamental tool in the global economy that facilitates the operation and growth of firms, particularly in an increasingly interconnected world. This type of finance is especially important for SMEs, many of which are family run firms, as they often face greater financial limitation and cash account problems than large firms. However, when they belong to a supply chain, SMEs can access finance more easily as they have the backing of large corporations governing the SCs and can benefit from guaranteed long-term contracts. In turn, SMEs can strengthen the financing of the SC by establishing solid relationships with suppliers, implementing digital payment and invoicing systems, considering the various finance options offered by banks to the SC, overseeing cashflow and payment terms, and seeking expert advice.

In order to identify and visualize the conceptual structure of SCF focusing on SMEs, this study has performed a bibliometric analysis which has assessed the performance of scientific production in the area, identifying the main trends in scientific research in this area of knowledge. The study is based on more robust search criteria than those used previously in the literature, as well as a longitudinal analysis from 1970 to 2021. This analysis shows that SCF is at the core of SCM as a broader field of knowledge, which encompasses the production and logistics processes in SCs. The bibliometric analysis has shown that SCF is partially disconnected from other driving topics such as SCM, *Trade Credit*, and *Delayed Payments*, because semantic questions around the concept of SCF may render it invisible.

This study has made it possible to identify, on the one hand, how interest in SCF has grown in recent years, particularly since 2019, which contrasts with the scant interest of the 20th century. It has been an evolution in which intra-firm SCs shifted at the end of the last century towards associative and cooperative commercial relationships in which SCF, as a financial mechanism, began to gain relevance in the literature. Over recent decades, technological innovation and the digital economy have had a major impact on SCF, favoring the development of new products, processes, and customers. The rapid rise in the growth of *FinTechs* is beginning to eat into the market share of traditional financial intermediaries, which has made SCF more accessible and versatile as a response to customer needs. The post Covid-19 crisis has opened up a new era for the SCF market with remote working or the adoption of digital technologies. Some of these changes may remain, particularly the greater take up of digitalization, which opens up a path of opportunities for SCF.

SCR is a burgeoning area of research, shifting from the old, non-cooperative financing models of the 20th century to the cooperative models we have seen in SCs in recent years. In this paper, we note new trends, such as more collaborative determinants of adoption as opposed to the operational determinants highlighted by previous literature.

One of the main results of this work has been to clarify the different driving topics that are leading the trends in SCF as an area of research. For the entire period analyzed (1970-2021), *SCM*, *Delayed Payments*, *Coordination*, and *Sustainability* stand out. If we focus on the most recent subperiod (SP-3), these are *Trade Credit*, *Corporate Management*, *Management*, and *Pricing Strategy*. Further, in this more recent period, topics with great potential have emerged such as *Blockchain* and *Innovation*, which are key for the future development and stability of SCs. Regarding the productivity and the impact of each topic, we have observed that SCM clearly stands out for both reasons, followed by *Delayed Payments*.

The findings of this research underscore the great fragmentation in the literature surrounding SCF, and, therefore, the need to create a comprehensive conceptual framework for this field of

knowledge, identifying the main elements that make up its essence, as well as the need to guide stakeholders throughout SCs and regulatory authorities so that they understand current trends in SCF. This would make it possible to identify the commercial opportunities and orientate policy. These contributions gain particular relevance in the complex environment that SCs are facing in the post Covid-19 era, where SCF can play a vital role. In this context, greater transparency and digitalization can release the potential for providing more finance to support firms and boost economic recovery.

The review of the works analyzed here allows identification of emerging future lines for research. Innovation, collaboration, and resilience are intrinsic aspects to the development of competitiveness, where SCF is key. Additionally, the adoption of new technologies such as Blockchain to contribute towards the sustainable performance of SCs through increased trust and transaction data validation is an area of great potential for future works on SCF. Moreover, we propose research that contrasts the findings of this paper with new research that uses different criteria for dividing up the subperiods than those used here such as, for example, using 2015 as a cut-off year, considering it to be when scientific production on SCF really took off. Finally, the way is opened up to research into the creation of a comprehensive framework for the analysis of SCF that would overcome the main limitation found in previous works on SCF, which lack a robust theoretical framework for analysis.

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Entrepreneurial Iatrogenesis: An Exploratory Approach

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Abstract Focusing on different positions on the dark side of entrepreneurship (DSE) (Montiel & Clark, 2018; Shepherd, 2019), including the dark side of the family business (Montiel & Soto, 2021), we investigate iatrogenesis and its application in entrepreneurship. Through a literature review, we clarified and defined entrepreneurial iatrogenesis (EI) as a novel perspective, as well as the factors that can promote it. Through a conceptual model, a potential research stream is proposed, and the results show that both its elements and dimensions are related, a systemic position where the context has a determining action. We conclude that it is feasible to extend this analysis to the development of public policies focused on entrepreneurship, as well as the creation of entrepreneurship and small and medium-sized enterprise (SMEs) programs at different levels, such as government and universities, and in general for the entrepreneurial community to establish strategies that can foresee and address it.

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PALABRAS CLAVE
Contexto, Lado oscuro del emprendimiento, Iatrogenesis emprendedora.

Iatrogenesis emprendedora: un enfoque exploratorio

Resumen Partiendo de diferentes posturas respecto al lado oscuro del emprendimiento (DSE) (Montiel & Clark, 2018; Shepherd, 2019), incluido el lado oscuro de la empresa familiar (DSFB) (Montiel & Soto, 2021), este trabajo investiga el concepto de iatrogenesis y su aplicación en el emprendimiento. Por medio de una revisión bibliográfica, se define la iatrogénesis emprendedora (EI) como una perspectiva novedosa que involucra factores que pueden promoverla. Además, se plantea un modelo conceptual para enfatizar que la iatrogenesis constituye una potencial corriente de investigación. Los resultados muestran que tanto sus elementos como sus dimensiones están relacionados, donde el contexto tiene una acción determinante. Se concluye que es factible extender este análisis al desarrollo de políticas públicas y programas de capacitación enfocados al emprendimiento en pequeñas y medianas empresas (PYMES).

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1. Introduction

Different positions and behaviors have been studied (Jones & Spicer, 2009) where entrepreneurs sometimes perform detrimental actions to the entrepreneurial project (the nascent or established company), as well as for the entrepreneur itself, without awareness or control. As stated by Schumpeter (1934, p. 93) who said that business motivations go hand in hand with "the will to found a private kingdom" and "the will to conquer; the impulse to fight, to prove oneself superior to others."

There are two scenarios in the literature on entrepreneurship. The white or bright one has been studied by several authors, highlighting the wealth of factors necessary to achieve success known as business efficiency: the production of measurable innovation (Baumol, 1990, 2010). On the other hand, there is a dark side, greed, among other elements, which can be interpreted first as ambition, calls for domination, and manipulation, which can be expressed as the intention to emancipate oneself, guided by the desire to control circumstances and be free from perceived limitations (Brownell et al., 2021).

Kets de Vries (1985) describes different scenarios that cause problems that arise from the fact that one company acquires another but decides to incorporate or keep the founder (i.e., entrepreneur) in top management. Given this, it recommends a singularity of precautions to avoid the consequences of negative complex behaviors that might develop within this strategy, which can end in organizational failure.

McMullan (1996) addressed various problems related to character or personality (e.g., mental abilities, moral, or value-based capacities). He recalls details of his own experience as an entrepreneur, stating that the anxiety and pressure to maintain business performance and not disappoint his circle of friends, family, and investors had a high consequence on his personal life (Schjoedt, 2013; Ufuk & Ozgen, 2001). Consistent with this argument, research has shown a strong negative relationship between narcissism and business performance (Creek et al., 2019; Schmid, 2016).

Zahra and Wright (2016) address the issue from the social theory and economic thought, where they ensure that entrepreneurship is lacking in balance concerning its social and economic impact. However, the literature is, to a certain extent, based on a static individualistic paradigm that omits the narrative domain of individual and collective reality (Turunen, 2015), both inserted in the process of entrepreneurship as practice.

In the medical field, iatrogenesis is the process in which negative outcomes are produced by well-intentioned treatment causing new serious adverse events, rather than a cure (Hofer & Hayward, 2002). Unsurprisingly, research and discussion on iatrogenesis in management are generally considered unfortunate (Meckler & Boal, 2020), with few studies addressing it, for example, in technology (Palmieri et al., 2007), copyright (Kennedy, 2015), and general risk management (Wiener, 1998). Thus, in an organizational scenario, iatrogenesis might surge in an unintentional, unexpected, generally negative context-new events that an organization must face, derived from behaviors and decisions that put the enterprise at risk, either due to ingenuity or bad intentions. Our goal was to offer a framework for making sense of dynamics that can surge within any organization and the poor outcomes that might come so that awareness and identifying intervention strategies can be elaborated to prevent/mitigate an iatrogenic stage.

In line with Meckler and Boal (2020), our study did not present a complicated concept of iatrogenesis. There are, more than we all want, organizational decisions that affect its viability, negative and irreversible iatrogenic results, as mentioned above, and with it, the expectations of all the actors involved, even affecting entire communities (Montiel & Pelly, 2022) that depend on the life of an organization, or other negative impacts that may derive from it, such as environmental, social, and physical damage.

The mortality rate among SMEs is high in all emerging economies. The purpose of this study, following the growing interest in this topic in organizational theory (Meckler & Boal, 2020), is to expose a potential framework that analyzes the negative processes that come from the business game, as well as discouraging results, to raise awareness and propose strategies to inhibit the effects of entrepreneurial iatrogenesis.

Furthermore, dark side of entrepreneurship (DSE) research remained on the fringes of entrepreneurship research throughout the 1990s and much of the 2000s (Landström, 2020). Since then, there has been a remarkable surge in interest in the 'dark side' of entrepreneurship (Keim, 2022; Montiel et al., 2020; Montiel & Clark, 2018; Shepherd, 2019; Talmage & Gassert, 2020).

Moreover, entrepreneurship and family business research are considered embedded (Aldrich et al., 2021), and a call has been made to address this close relationship, as already approached by Montiel and Soto (2021).

The document is ordered as follows: first, it shows the dimensions of DSE and then proceeds to focus on the context of entrepreneurship; third, it approaches the unintended effects on

entrepreneurship, which we call Entrepreneurial Iatrogenesis (EI). Based on this information, a conceptual model was presented. Finally, we discuss, for illustrative purposes, a recent business case and conclude the paper with conclusions, implications, and possible directions for future research.

2. Entrepreneur Dimensions

In economic literature[1], entrepreneurship is frequently characterized as an ideal subject with the capability to identify business opportunities and generate innovation that triggers economic development. However, it is necessary to infer the other side of entrepreneurship, characterized by a dark side given by six aspects: entrepreneurial personality oriented towards opportunism; egoism, greed, Organizational and entrepreneurial processes; hubris; addiction, entrepreneurial bad behaviors, organizational and entrepreneurial processes, and undesirable and unintended consequences of entrepreneurship. Such peculiarities negatively affect both the organization and its members.

2.1. Entrepreneurial personality

To expose the dimensions of DSE from the perspective of the entrepreneur, Luca (2017) mentioned that it has a psychological effect and personality traits that differentiate individuals who share the same socioeconomic environment. Personality has been addressed in various contexts; for example, Brandstätter's (2010) meta-analysis, which is considered to give a fundamental component to both character and business behavior, while Hmieleski and Lerner (2016), and Paulhus and Williams (2002) approach some of its negative aspects, such as Machiavellianism, narcissism, and psychopathy as a dark triad of the entrepreneur's personality.

In the same way, the personality orientation towards opportunism (Williamson, 1989), that is, the fraudulent action of the entrepreneur, harms the generation of innovation and the growth of the company in the long term due to the infringement of the rights of other citizens.

2.2. Egoism, greed & hubris

On selfishness, Beaver and Jennings (2005) argue that it can have consequences for the organization and can cause the business to incur a crisis and cause its failure. Therefore, the ego of a businessman lends itself to the practice of the abuse of trust and the power of influence.

On the other hand, greed (Brownell et al., 2021) is perceived as ambition, a manipulation that brings with it the intention to control circumstances and be oblivious to limitations, whereas Takacs et al. (2017) see it as a desire to actively search for extraordinary material capital. Arrogance is an exaggerated pride derived from self-confidence, and hubris or exaggerated pride or self-confidence (Hayward & Hambrick, 1997) often results in searching for financial retribution. Hayward and Hambrick (1997) see these concepts as a clear personal advantage for those belonging to the company they own or represent, even if it lacks ethics, due to the growing need for human beings to want to control things.

2.3. Addiction

For addiction, Keskin et al. (2015) reflected on whether entrepreneurship can have a close relationship with addictive behavior since they present negative thoughts or emotions that lead to obsessive behavior. They compare it to additions such as Internet gambling, such as so-called serial entrepreneurs, when they face difficulties associated with the urge to keep going, the challenge of continuing with a sense of urgency.

2.4. Entrepreneurial bad behaviors

Lundmark and Westelius (2012) approach the so-called bad behavior of a business/entrepreneur. This sparked controversy, some companies can get involved in these behaviors since some new ventures might need support outside the organizational sphere, such as the support of a given political party or a politician, which usually has positive consequences for the entrepreneurial project. Fadahunsi and Rosa (2002) discuss the positive impact of the development of these illegal activities because they create companies and jobs with positive consequences that are usually not addressed in the literature (Richards, 2008).

2.5. Organizational and entrepreneurial processes

The theory of social exchange suggests that it is based on exchange from interdependent interactions[2], in other words, in the

1. For more details on DSE's dimensions (entrepreneur and context, and its elements), please see Montiel and Clark (2018), Montiel et al. (2020), Montiel and Soto (2021).

2. Management and entrepreneurship are social processes that take place under social interactions. Gillin and Gillin (1954) classified forms of social interaction into two major groups: the associative process (consisting of accommodation, assimilation, and acculturation) and the dissociative process (consisting of competition, contravention, and conflict or contention).

entrepreneurial/organizational processes, the employer creates obligations for the worker, and the worker, in turn, acts towards the former in a reciprocal way (Cropanzano & Mitchell, 2005), so a long-term relationship of trust is created between them if this exchange continues favorably (Molm et al., 2000), leading to a successful organizational phenomenon (Garud & Turunen, 2017), while new knowledge, the output of these attentional processes is mostly missed in the literature (Coyne & Van de Ven, 2021). At the organizational level, some studies suggest that trust is positively related to business performance (Aryee et al., 2002). Furthermore, agency costs are considered potentially harmful in diverse business areas such as innovation (Chi, 2023) and financial performance (Abdullah & Tursoy, 2023).

2.6. Undesirable and unintended consequences of entrepreneurship

EI can have, as other organizational areas are closely related to it, such as innovation and undesirable and unforeseen consequences (Sveiby et al., 2012). This can result in lower productivity (Abrahamson, 1991), health consequences (Desmarchelier & Szabo, 2008) for both clients and employees, and less innovation in small and medium-sized companies (Koeller, 1995), and it is relevant to differentiate them from those that are considered externalities (Pigou, 1920). This section presents a potential and unexplored new area of entrepreneurship research.

In short, the description of the negative aspects of the entrepreneur shows that not all entrepreneurs show positive behaviors, such as those described in the traditional literature, while factors such as personality and attitude towards entrepreneurial work have an impact on business performance. Simultaneously, it is essential to observe entrepreneurship as a holistic set of connections between the subject and its environment; therefore, the proposal lies in incorporating the contextual dimensions of the dark side of the entrepreneur. The foregoing will allow visualization of the entrepreneur and his behaviors from a complex systemic perspective.

3. From the Context Dimension

Theoretically, an entrepreneur's behavior should have a positive impact on business performance. In particular, the success of new businesses in the long term implies generating collaborative links based on trust and not acting with fraud; however, it is possible to deduce the dark side of the entrepreneur, characterized by a behavior that generally differs from the ideal situation.

Entrepreneurship is multidimensional because the dark side is destructive or unproductive and affects the productivity and sustainability of companies (Baumol, 1990, 2010).

Boettke and Coyne (2009) mentioned the link between institutions and entrepreneurship, where the former consists of formal/informal "rules of the game." The latter operates within a context determined by these rules, creating payoffs that make certain entrepreneurial structures (private for-profit, private nonprofit, and political) more attractive than others, including unproductive, destructive, and evasive activities.

Given the preceding description, this research suggests adding social entrepreneurship, criminal entrepreneurship, institutional entrepreneurship, public entrepreneurship, and extreme conflicts as well as the factors inherent to contextual DSE. This is because these situations represent adverse institutional contexts that, at the same time, are linked to negative individual behaviors (Chang, 2007). Together, the subject's behavior, undesirable situations, and context harm entrepreneurial performance.

3.1. Social entrepreneurship

Banks in his fundamental work "The Sociology of Social Movements" used the term social entrepreneur for the first time, with the need to use the traditional strategies of the company to address social problems (Raghda, 2013).

In the 1980s, Bill Dayton coined the term social entrepreneurship and founded Ashoka (Alonso et al., 2014), a pioneer in the global network of social entrepreneurship. Later came an important development in social entrepreneurship, microcredit, according to Gutiérrez Nieto (2005), this great initiative was proposed by Muhammad Yunus in 1983, who sought the extension of loans to the poor and was rejected by banks, to improve the quality of life of Bangladeshi communities. This initiative led him to find the Grameen Bank, which lent money to marginalized communities to continue producing their products, creating a business model above charity.

Williams and Knife (2012) questioned the criteria that define a social enterprise because empirical data have shown that some of these companies under this umbrella receive funds to carry out their social work but may have an indirect consequence in strengthening the contexts of groups of power or violence who could use this type of entrepreneurship as a false frontage.

3.2. Criminal entrepreneurship

According to the existing literature, Abdukadirov (2010) pointed out that terrorists would be entrepreneurs. He defends that like all entrepreneurs, they have an organizational structure, financial and human capital, strategies,

seek new opportunities, take risks, and innovate. However, they are not motivated by profit but by their ideologies.

3.3. Institutional entrepreneurship

Khan et al. (2006) reflect on how international development programs and entrepreneurship practices are implemented and promoted by organizations in emerging/developing economies, which sometimes have unwanted secondary effects that are more harmful than those they are trying to solve, the dark side of the institutional dimension. Foley and Hunter (2016) found initiatives in indigenous communities in Australia, and the increased inequalities generated instead of reducing them (Bonacich, 1993).

3.4. Public entrepreneurship and related contexts

Fennimore and Sementelli (2016) investigate the dark side from the context of the public sector, exploring the psychopathic profile that government officials can present, a threat to both the state and its citizens, categorizing them as "climbers " and "fans."

Ojugbele et al. (2022) analyzed public entrepreneurship from the perspective of service presentation in South Africa. They allude to the fact that this sector is frequently assumed to be uncompetitive, bureaucratic, and mediocre. Therefore, it is essential to apply technological frameworks and best practices to improve results. In addition, they specify the need to inculcate an entrepreneurial mentality, develop skills, and gestation strategies aimed at reducing bureaucracy and increasing competitiveness.

3.5. Extreme crises/conflicts

At a global level, COVID-19 has generated extreme crises for entrepreneurs and their contexts and in societies (e.g., the EU or USA for example). These decisions affect entrepreneurs and create new opportunities for others. For example, small businesses and cultural entrepreneurs have been affected globally on a large scale, while some entrepreneurs or start-ups have benefited from the COVID-10 crisis, or from the other disruptive change that is taking place in the present geopolitical order.

Likewise, dark side of the family business is considered an extreme conflict that can be generated by an individual within the organization, or in the case of a family business, irrational polarization within the family group (for example, in the succession process), which puts family business at risk with profound differences in their knowledge and opinions (Moscovici & Doise, 1994). When faced with disruptive innovations, which drastically influence technological and consumer behaviors, a leading player in the industry can be wiped out.

To provide a holistic overview of the negative factors that interfere with business work, this study proposes incorporating the definition of iatrogenesis, an aspect of modern medicine that can be incorporated into the study of adverse situations of entrepreneurship.

4. Entrepreneurial Iatrogenesis

Iatrogenesis in social sciences was introduced by Illich (1978), and its negative effects on people and society arise from the institutionalization of modern medicine. The word intros (doctor), comes from Greek and describes all the negative changes that a doctor generates in the condition of their patients. It refers to the unintended consequences of medical behaviors/personnel wanting to cure or generate a diagnosis. Illich said that there was a growing crisis of confidence in modern medicine, suggesting that political action is required to challenge the status quo of health professionals, who were determined to be the future monopoly, especially in Western societies.

In terms of entrepreneurship, a crisis of confidence and empathy is created when university students are taught not to own a business because most of them are educated with a bias, the conviction that, in the end, they will work for someone else, be an employee. The same situation is rooted in government programs by assuming entrepreneurship only as the creation of a company and not as professional growth within an organization (intrapreneurship) or a positive transformation at a personal level.

Illich (1978) argued that iatrogenesis must be seen as a specific medical manifestation of counterproductivity. For example, the costs to society when you sell/promote the dream of being an entrepreneur and independent, and the harsh reality shows a non-optimal ecosystem not prepared to efficiently support these new startups. It then generates business closures and high personal costs, economically, financially, psychologically, and socially. Organizational iatrogenesis is defined as 'the unintended genesis of qualitatively different problems due to mistakes such as unwise intervention strategies, well-intentioned work on the wrong problems, or ignorance of significant correlations' (Meckler & Boal, 2020).

Therefore, we defined Entrepreneurial Iatrogenesis as the involuntary genesis of various qualitative and quantitative problems that result in internal/external conflicts because of the inability of the entrepreneurial individual to provide accurate calculations, misguided or unwise intervention

strategies due to changes in values or behaviors of those in charge, or simply an inefficient interpretation of significant data of the context related to their business, which can seriously compromise the viability of the entrepreneurial project or the purpose of what is being promoted and implemented (institutionally). Following Illich (1978), he argues that iatrogenesis can be categorized into three types: clinical, social, and cultural.

4.1. Clinical entrepreneurial iatrogenesis

Complications or health diseases are caused by clinical intervention and the actions of the doctor on the patient. In entrepreneurship, there are psychological problems, such as personality disorders, failures, or self-esteem, which the entrepreneur may have or generate because of the launch of his entrepreneurial project. The placebo or nocebo effect is the influence entrepreneurship will have on an individual.

4.2. Social entrepreneurial iatrogenesis

For Illich (1978), medicine is a purely moral company because it produces products with content of good and evil, such as law and religion, and says that it is normal and appropriate to be able to decide what is and what it is not a symptom and who is sick, which is why it is said that the doctor is a purely moral businessman.
Social iatrogenesis causes society to feel that they should consume more drugs, cause dependence, and have lower tolerance levels to discomfort or pain. Its practice promotes damage to people, such as illness, and reinforces a sick society. On the other hand, all damage to health is due to very attractive socioeconomic transformations and is even necessary because of the institutional form acquired by the physician.
Entrepreneurship may cause ego arrogance, failure, or frustration because failure is not well tolerated by today's society. It is the modern recipe for entrepreneurship and must be its goal; that is, a company that maximizes sustained profits and is not perceived as a vision/development of professional/personal life.

4.3. Cultural entrepreneurial iatrogenesis

According to Illich (1978), cultural iatrogenesis occurs when people give consent to acts of manipulation of health, a conspiracy that gives a product "better health," as merchandise. Medicine is perceived as a morally dominant enterprise where cultural aspects or beliefs about health, pain, and disease are at stake. In, entrepreneurship occurs when society accepts the creation of new companies based on an ethnocentric model, manipulated to produce "entrepreneurs" as if they were simple products. Entrepreneurship is promoted as the creation of new companies that will fight a war against suffering and poverty, where constant growth is the maximum value, the measure of success.
As can be seen, it is revealing to add iatrogenesis, since it makes it possible to systematically observe the set of adverse factors that impact entrepreneurship. To verify the relevance of academic research grants to iatrogenesis in entrepreneurship, an exploratory investigation of the scientific documents that examine these elements is first proposed. Second, we propose an analytical scheme aimed at identifying the links between entrepreneurship and iatrogenesis.

5. Method

Exploratory research was conducted to determine the relevance and use of iatrogenesis as a construct in management studies. A scoping review was conducted to explore contemporary issues in the iatrogenesis literature and are ideal for, among others, exploring "emerging" topics from multiple disciplines while "mapping the key concepts" of a line of research and describing "gaps" in the research (Peters et al., 2015).
Through an extensive literature review using various databases (with no specific dates, under "any time or moment" criteria), Google Scholar, EBSCOhost, ProQuest, Scopus, Emerald, Ingenta, JSTOR, ScienceDirect, and Wiley, no evidence of a prior conceptualization of EI was found. Using keywords such as "iatrogenesis," "management," "organization," "organizational," and "entrepreneurship" (we also did this search in the Spanish language), only a handful (four) of recent articles related to the organizational approach, and where Iatrogenesis was the main subject, were found (all of them mentioned in the Introduction section). No recent or relevant articles were found where entrepreneurship was included. We did not introduce any geographical restrictions. The last search was conducted in May 2023.
This is similar to the findings of Meckler and Boal (2020) in their literature review, wherein only two business-focused investigations were conducted. According to Meckler and Boal (2020), the scope of the research is wide, but the number of studies remains low, suggesting that there is limited discussion on iatrogenesis in the management literature.

6. Results

Figure 1 is based on Illich (1978), Montiel and Clark (2018), and Montiel et al. (2020). The model *Dimensions and Elements of the Entrepreneurial Iatrogenesis* show iatrogenesis

as a social fact within complex systems, where all its elements, structures, and processes are in constant nonlinear development. In other words, the cause does not always produce the same effects, and a stimulus does not always give the same response. From this perspective, the model suggests interrelated multidimensional data under a process of constant and intrinsic evolution (Montiel & Soto, 2020).

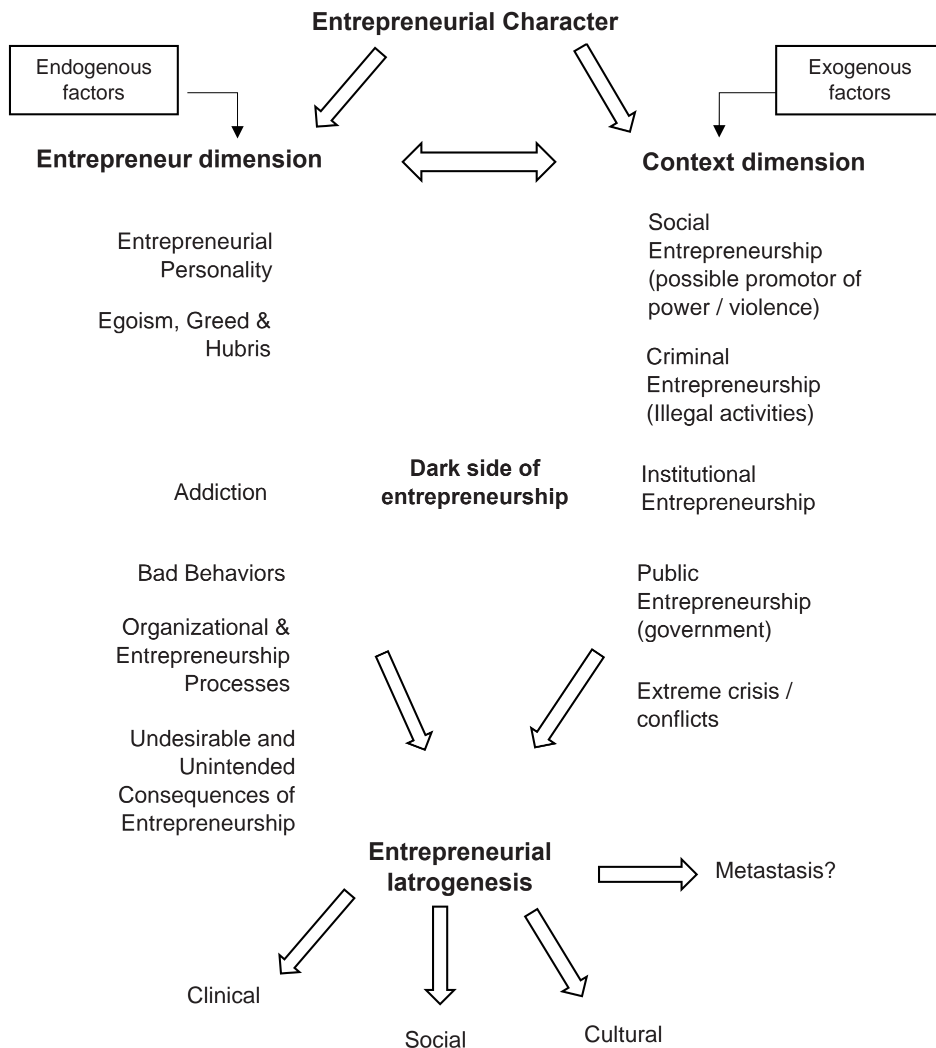
The model is a dynamic process in which iatrogenesis can be the result of an endogenous element (from the entrepreneur dimension) or exogenous element (from the contextual dimension) and can trigger an organizational metastasis (its downfall and death).

Whetten (1989) states that not all theoretical contributions need propositions but they can be significant in terms of derivations in the direction of the relationship and the logic that leads to the dimension. Therefore, 4 propositions are presented to specify the implications deduced by logic. These were made considering the changes that the entrepreneur will have not only as a natural evolution of himself while managing the company but also on the effect that the industry environment and the rise of unusual extreme crises (such as COVID-19) should have:

Proposition 1. The more challenging the context faced by the entrepreneur or founder, originating within the firm operations (endogenous), and/or by the context (exogenous), the more expected issues in each or both dimensions will arise, which might lead to the appearance of EI.

Proposition 2. The more information the entrepreneur receives from the measurement of both dimensions, the more improved agreements can be made to escape the appearance of EI, thus escalating the probability of accomplishing superior financial and nonfinancial performance for the firm.

Figure 1. Dimensions and Elements of the Entrepreneurial Iatrogenesis



Source: Adapted from Montiel and Clark (2018) and Montiel et al. (2020)

***Proposition 3**. The more issues that appear in the entrepreneur are associated with the entrepreneur dimension, the more likely it is that EI will emerge.*

***Proposition 4**. The more problems that arise from extreme crises that might affect all elements in both dimensions, the more likely EI will emerge.*

In summary, Figure 1 schematizes the dimensions and elements of iatrogenesis in entrepreneurship as well as the gestation of organizational metastasis from clinical, social, and cultural iatrogenesis.

Kenworthy and McMullen (2014) acknowledge that entrepreneurship is too new to predict. Whetten (1989) suggested that the applicability of a given model might be limited by the discovery of limiting conditions by testing it in various scenarios. A novel proposal may result in additional inquiries regarding the proposed hypotheses and collection of empirical data. Based on a literature review, logical probability was applied to our model by evaluating the theory with facts (Meehl, 1990).

7. Discussion

Weick (1993) described how an entire system can collapse when individuals, who spring into action and turn cases into disasters, fall apart from collective care. For example, collective and contextual attention, also called organizational culture, is a contextual system of attention qualities of a company that sets the stage for the decision by influencing the field of perception and imagination of all the actors in the organization to increase its probability of acting, an insight that occurs (Garud & Turunen, 2021).

Meckler and Boal (2020) expanded the concept of iatrogenesis in the organizational discussion of strategic decision-making. However, entrepreneurs do not make decisions in a vacuum. Collective attention or a field of collective consciousness (Turunen, 2015; Turunen & Mäntymäki, 2018) that can be affected by collective iatrogenic fields surrounds all organizational actors, such as entrepreneurs and societies that are based on metacognitive levels that, in general, are not usually aware, but they remain blind to the entrepreneur because the collective layers of society are generally not available to understand an individual, causing communication problems that can lead to an iatrogenic effect (Tourish & Robson, 2006).

Metacognitive EI can reside in an individual or collective layer, but it is usually a combination of both. Meckler and Boal (2020) introduced a cascading iatrogenic error of this type, which is a dangerous source of irreversible organizational iatrogenesis.

In this section, we provide a case vignette/narrative that illustrates our conceptual model using an actual archival story. Narratives and stories (Boje, 2018) can generate knowledge about issues in organizational settings.

Let us dig in on a recently known business case: Theranos. On the premise that dozens of tests can be performed with a single-finger prick, Theranos, a biotech company, was founded in 2003. Its founder, Elizabeth Holmes, a 19-year-old who dropped out of Stanford, managed to convince investors and funds. This minuscule sample was analyzed on Theranos' "Edison Machines," undergoing tests for everything from cholesterol to cancer. By 2014, it had amassed $900 million in funding, and Theranos was valued at $9 billion (Parloff, 2014).

According to Roper (2014), a company's business model aims to create a system in which patients can select, order, and analyze their tests without certified medical personnel supervision, thereby "democratizing" medicine and empowering patients. It also plans to improve access to tests, detect health problems earlier, and charge Medicare rates that are less than half those of conventional providers.

Once the world's first self-made female billionaire, she was considered a powerful arrogant woman (Dundes et al., 2019). According to Fiala and Diamandis (2018), Elizabeth Holmes invited industrial and political leaders to the advisory board of Theranos. She managed to acquire a wealth of $4.5 billion and became the youngest female (self-made) billionaire in the world at the age of 30 (Herper, 2016).

It is suggested that her actions were driven by the ambition to achieve her goals of gaining power, wealth, and fame. Entrepreneurial personality was not controlled. She did not have a work-life balance, worked 16 hours a day, seven days a week, and slept four hours a night (Dundes et al., 2019). This was a clear process of addiction, waiting for a similar commitment from her employees, whose hours were monitored, and questioning the loyalty of those who opposed her demands, a clear autocratic style (Carreyrou, 2018). Showed a lack of praise for employees, and fired those who crossed her (Dundes et al., 2019), a certain style of leadership (Carreyrou, 2018) characterized by a "lack of empathy" made employees feel as though "she was progressively depriving them of all (their) humanity" in the workplace. Clinical iatrogenesis begins with the employer's intervention in the form of psychological problems in employees.

According to Carreyrou (2018), even in the face of Theranos' failure, she showed no remorse and

was considered "collateral damage on her way to wealth and fame, so be it" never "apologizing or admitting fault", thus suggesting behaviors typical of a "sociopath". A clear manifestation of cultural iatrogenesis.

Despite being in a relationship with Theranos' COO Ramesh "Sunny" Balwani, she used to hide this part of her life, perhaps because she wanted to give the impression that there was no emotional attachment beyond her work and responsibilities at Theranos, especially to investors and employees. Theranos was always first (Dundes et al., 2019). Social Iatrogenesis, where the company is now everything.

Theranos' employee, Tyler Shultz, the grandson of former Secretary of State George Shultz, blew the whistle. Even after her resignation, Elizabeth Holmes grew tired of controlling him and dabbling in Criminal Entrepreneurship activities. The pressure to remain gagged (via confidentiality agreements) was intense, given that Theranos' lawyers threatened him, and his family refused to sign (Dundes et al., 2019).

In 2014, Theranos went bankrupt following mounting revelations about its lack of experience, technology, and inaccurate test results; two of its labs being closed; lawsuits from investors and patients; and EH's wealth devaluing to nothing (Fiala & Daimandis, 2018). Meanwhile, information was discovered in which no details or data on Edison machine technology were submitted to a scientific journal or made available to the public, which is unusual for a medical company that provides services to the public (Carreyrou, 2016). At that time, Theranos and Elizabeth Holmes were at the point of no return. An extreme conflict or crisis is now underway.

In March 2018, the Securities and Exchange Commission (SEC), a US financial regulator, announced that it would pay a $500,000 fine to resolve massive fraud changes (raised more than 700 million fraudulently) and was barred from being an officer or director of a public company for 10 years and relinquished control of Theranos. She admits no wrongdoing (United States District Court, Northern District of California 2018). The final metastasis was not only in the company but also in the entrepreneur. A complete failure.

In January 2022, a jury found her guilty of wire fraud and conspiracy to defraud, three counts of wire fraud, and one count of conspiracy to defraud investors (Pardes 2022). The woman, who is now 37 years old, was not arrested, and there is no exact date for the final sentence, which may be 20 years for each of the four charges of which she was found guilty. In total, she faced 11 charges; the jury found her innocent of another four, related to public fraud, and could not reach a unanimous verdict on the remaining three (BBC, 2022). On April 10, 2023, a federal judge said that Elizabeth Holmes failed to prove its appeal process and was sentenced to over 11 years in prison. She was scheduled to go to prison on April 27th (BBC, 2023).

There may also be other examples in an organizational setting. Weitzel and Jonsson (1989) argued that organizational failure and decline are almost always preceded by a denial of reality that leads to inaction. In the case of Blockbuster losing its supremacy (egoism, greed, and hubris, extreme conflict, and even ceasing to exist) against Netflix and major streaming providers, Kodak and digital camera manufacturers (egoism, greed, and hubris, extreme conflict, where the former had developed and filed the patent and then lost the technological lead), the Enron scheme saga (selfishness, greed and arrogance, criminal entrepreneurship, bad behavior), Toys R Us (extreme conflict), Pan American Airlines (extreme conflict), and many other corporations that closed their operations completely, examples of fail strategic renewal (Hernández-Linares & Arias-Abelaira, 2022). In today's global economy, in which technology plays a decisive role, including the fourth type of technological iatrogenesis (Palmieri et al., 2007), emerging errors are stimulated by the infusion of technological innovations in complex systems.

The results showed that there are potential implications (as a preventive/corrective strategy) for the development of public policies at each level of government of a given territory, federal, state, and local entrepreneurship/business programs, and medium-sized enterprises (SMEs). Educational institutions can play a decisive role in raising awareness of this topic among future entrepreneurs and include this topic in their professional and/or executive development programs. The latter includes family businesses, the core of many economic systems, and closely related to entrepreneurship; so that they can establish lines of preventive action.

8. Conclusions

A review of the literature revealed that relatively little work has been conducted on this subject. However, we are unaware of any other paper that describes or organizes various EI positions. The current study aims to create a new vision and fill a void, a topic that is beginning to be addressed in other research areas.

A conceptual model is proposed that has the potential to serve as a starting point for systematizing EI findings and has several theoretical, analytical, and empirical implications. To contrast various market issues

and industry contexts, this model proposal should be investigated in other areas, including business creation, innovation, and creativity in various sectors.

To stop economic and social value from being eroded, all components of the so-called entrepreneurial ecosystem could closely examine the dysfunctional effects that these activities can have when attempting to create value in social, economic, regulatory, technological, and natural environments.

Although this study focuses on a review and analysis of the concept of iatrogenesis in entrepreneurship, it is feasible to return to these notions to investigate strategies aimed at observing how organizations act in situations of conflict, change, and metastasis. Thus, the model presented is suitable for application in universities; federal, state, and local entrepreneurship initiatives; and other business incubation institutions.

It is feasible to extend this analysis, not only for the development of public policies, but also to include it in entrepreneurship programs for SMEs and business incubators at different levels (local, state, and federal), to establish courses of action that can raise awareness.

Business schools and executive education programs might include a discussion of iatrogenesis to raise awareness of the multifaceted nature of entrepreneurship, not only in terms of its economic effects but also its social effects.

The limitations of the study reside in the fact that, on the one hand, it shows a theoretical analysis that must be extended to practical cases to verify if the functioning of organizations implies the analysis of the dimensions of iatrogenesis, and, on the other hand, the application of iatrogenesis to other aspects, such as the family business.

Future research should adopt a systemic approach, which seems to be the best way to start asking questions and examining the various business contexts that will allow for a precise definition of EI. In addition, the dysfunctional effects of the context dimension need additional development, and it would be fascinating to conduct in-depth research into the specific ways in which the dimensions of the entrepreneur's side might coincide or interact with the dimensions of the context side, triggering possible iatrogenesis, and how the metastasis dynamics in the business, the entrepreneur, and the context around them.

Another line of research, currently being elaborate, is the development of a specific model to investigate this iatrogenic process in family businesses since they represent most economic agents in today's global economy. Since entrepreneurship and family business research are considered embedded, there is a need to address this close relationship under EI. Family business groups, founders, and senior management can become more aware of the situation and decide whether to take preventative or corrective action.

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Family Business Governance and Outside Directors—Expectations from an Independent Director

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Abstract Based on the author's own experience as an external and independent director of several boards of directors of family-owned companies, the objective of this paper is to show the responsibilities that these directors must assume and how they should preserve their qualities as "external" and "independent" directors. In this way, it is expected that this commentary can help to shape the procedure of incorporation and evaluation of external and independent directors.

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PALABRAS CLAVE
Consejo de administración, Consenso, Consejero/a externo/a, Empresa familiar, Consejero/a independiente, Armonía

Gobierno de la empresa familiar y directores externos-Expectativas de un director independiente

Resumen A partir de la propia experiencia del autor como consejero externo e independiente de varios consejos de administración de empresas familiares, el objetivo de este trabajo es mostrar las responsabilidades y obligaciones que deben asumir estos consejeros y cómo deben preservar sus cualidades de consejero "externo" e "independiente". De este modo, se espera que este comentario pueda ayudar a configurar el procedimiento de incorporación y evaluación de consejeros externos e independientes.

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1. Introduction

Many years have passed since I was invited to join the board of directors of a family-owned business. By that time, I had already served as a director on the boards of several companies. Today, at the age of 89, I am on the board of directors of four companies. They are all medium-sized family businesses, 100% owned by a single family and with a profit after-tax of more than one million euros; two of them are recognized as leaders in their respective sectors.
The size of the board ranges from four to eight members. In three of them, there are non-family managers who are directors: in one of them, I am among the two independent external directors; in the other three, I am the only external and independent director.
Encouraged by the editor-in-chief of the *European Journal of Family Business*, Dr. Amaia Maseda, I will, in the following paragraphs, share my thoughts, based on my personal experiences, regarding what these companies expect from an external and independent director in terms of company harmony, her/his responsibilities as a director, and how they must preserve their qualities as an "external" and "independent" director.

2. Expectations from an External and Independent Director on the Board of a Family Business — Unity and Harmony

In a previous article (Gallo, 2021), I insisted upon the difficulty of achieving harmony in a family-owned business if there was no broad and permanent basis of unity to which its board of directors must adhere. It is natural for people in positions of power to want to retain it (Alvira, 2005, p. 71), which explains the infrequent changes to the composition of a family-run business's board of directors. Even when they occur, they are usually because of special circumstances such as illness, disability, substitution of some owners by others, death, etc. These circumstances can incite an erosion in the unit.
In my experience over the last five years, unity in such boards has been paramount to handle the lack of success of certain directives to attain the expected strategic or organizational success or to manage a strong demand for strategic change because of evolution of the business environment — something that is currently occurring in many family businesses. These are complicated situations, requiring rapid adaptation to new technologies. There are also other complex situations, such as the succession of owned directors (owners of the family business) by one of their children or by a non-family member, or the incorporation of new directors that bring knowledge of new fields of action. Then there are other circumstances, quite different from those just mentioned, but also very common—for example, problematic marital separations.
Additionally, the board of a family business must be among its main engines to achieve professional excellence through a balance of *potestas* as socially recognized "force"—that is, recognized "power"—and *auctoritas* as socially recognized "truth"—that is, recognized "knowledge" (Álvaro D'Ors, quoted in Domingo, 1987). Balance must be established, first, among the board members and, then, among the principal managers of the family business.
The external and independent board member—formed by one person or several—must be especially careful, first of all, to ensure that necessary balance between *potestas* and *auctoritas* is achieved in the board itself, and then, that this balance is achieved between each of the directors. This is a crucial aspect of the duty of diligence and loyalty, which the legislation usually establishes among the basic responsibilities of the director.
The meetings of a family business's board are significant events to ensure congenial coexistence in the company and in the family. The board of a family business signifies—in a powerful manner—positive or negative coexistence in the company and in the owner family. Naturally, the external and independent board member is expected to positively coexist with each board member.
The board is not, by law, obliged to collegiate its decisions, that is, take them by consensus. Sometimes it is even desirable that this consensus is not reached, so that the different positions on how to govern the company are clearly distinguished and, if necessary, decided by the shareholders meeting, the company's supreme governing body. However, when voting becomes common in the decision-making of the board of a family business, it signifies lack of consensus, which can potentially precipitate disunity.
In the family business, deciding through voting usually leads to the separation of family members who initially wanted unity. Hence, it is crucial for board members to learn about the necessary conditions to collegiate, that is, to reach a consensus on decisions.
Therefore, it is usually expected of an external and independent board member to act as a "master of consensus" to set the example in respecting the conditions that are necessary for collegial decision-making:

— Listen to others with the intention of understanding the basic reasons for their expressed opinion, and question — in a positive manner — their opinions, instead of merely arguing-to-win in the ensuing discussion.
— Express your opinion truthfully and completely, without repetition of the reasons on which it is based, and without constantly referring to past events.
— Be truly willing to change your mind.
— Accept the decision taken by all in a collegial manner, even if it is different from the one previously suggested and maintained, loyally supporting it.
— Do not necessarily withhold matters to be dealt with later in time, but deal with them diligently. Do not delay their consideration, thinking that the passage of time will prove you right or will cause such matters to be forgotten.

The external and independent board member is not only expected to exhibit an exemplary character, but they are also expected to disseminate and promote such qualities as discussed above. This is required so that consensus among board members can be achieved so as to ensure the best possible performance of the family business.
The responsibilities of the external and independent board member do not apply only to board meetings, as they are often required to hold individual conversations with certain directors. Conversations are not kept secret because they are known to others; however, a part of their content is treated with necessary discretion. Similarly, these conversations should not be interpreted as the intention of the external and independent board members, or other directors, to take the limelight away from the board, inducing others to think that they are attending a sham meeting while the decision has already been made.
Usually, in these conversations, the most important thing is to understand the personal preferences of other board members; rarely will it be an attempt to broaden their strategic or organizational knowledge. The external and independent board member cannot afford to forget that intelligence, will, and feelings are the three natural qualities of all humans (Zubiri, 1985, p. 124), and that personal preferences, as part of a person's feelings, have a substantial role in decision-making. The external and independent board member should be able to identify these personal preferences and direct them toward the achievement of the common goal, helping the person to use their "particular skills" for the benefit of the company.
Just as it is clear that the external and independent board member must do everything, it can achieve consensus and harmony, it must also be clear that this does not release them in any way from their responsibility as board members. That is, the responsibility to perform adequately in each board meeting, having studied the issues and reached the *autoritas* that corresponds to their *potestas* as board members.
Thus, the core responsibilities expected of an external independent board member in most family-owned businesses include collaborating with the members of the family board, helping to build consensus, and supporting their personal preparation to professionally contribute to decision-making at every board meeting. However, it should be highlighted that directors are often asked, precisely because of their independent status, to comment on and explain certain decisions taken by the board of directors to the other owners, and even to other members of the "extended" family (spouses, children, etc.) in certain circumstances. Sometimes their support is also requested so that these decisions are better known by the managers.

3. Being an "External" Director

It is not difficult to reunite the qualities necessary to be considered an external director, in line with what has been mentioned so far, and even less so when, as it is usually the case, the quality of the external director is equated to that of not being a supplier or client of the family business.
A very different situation is when a significant part of the quality of being external consists of having knowledge of aspects external to the company. That is, to understand well the elements of the political and social environment that can have an influence on the business and, of course, its own competitive environment.
In many cases, one of the main reasons to appoint a person as an external company director is that they possess this external knowledge, or because they possess the skills to attain it. In any case, the external advisor must be aware of their obligation to keep their knowledge up to date and to expand it in those areas that are most necessary for their company.
In my experience, given my age, perhaps the most difficult skill to acquire and maintain is related to digital technology—also called "IT" (Information Technology)—as well as understanding the changes, dangers, and opportunities it brings. New computer programs offer extraordinary value to family businesses—it can be said that in the future, companies will not be able to survive without them. Therefore, if the external director is not "sufficiently up to date," it will be increasingly difficult for her/him to add value at board meetings.

Owing to their external and independent status, these directors tend to have "contacts" with the outside world that prove useful for the family business. They are often obliged to exploit these connections to benefit the company, and sometimes to even help a member of the family who is not part of the business. When "helping" the company through these external contacts, the external and independent director must carefully gauge the nature of the commitment that they will have to make.

4. Being an "Independent" Director

Independence, in this context, refers to the director's participation in the board's decision-making with no other commitment than that of seeking the best outcome for the company they advise, although having the freedom to resign when the common good of the family business has not been achieved. This resignation cannot be viewed as a positive outcome, because the real goal is to reach consensus on the best decision. However, the external and independent board member is not obliged to agree with all decisions, and sometimes resignation is the appropriate option to express disagreement.

The mission of an external and independent director is neither to resign, nor to be an easy subject of resignation. However, if their *curriculum vitae* refers to many years of experience without any resignation, withdrawal, etc., this may raise doubts about their independence.

An important element of being an independent director is financial independence. That is to say, they should not be concerned if they no longer receive their remuneration as a director of the board. This is so important that, in the process of appointing the person to the board of directors, this aspect should be fully clear to the members of the board who make the decision to incorporate them.

Another significant element of independence is non-existence of non-professional relationships either with the management of the family business, or with members of the family. This independence will be impacted if the director seeks favors for their family or friends—favors as simple as seeking an internship position for one of their grandchildren, or supporting the incorporation of one of their children in the family business. These situations can erode independence, so much so that in the latter example, it would be reasonable for the external and independent director to resign.

However, the most difficult part of preserving independence is not so much about the capabilities and character of the external advisor, as it is to their feelings. Every person has an "incomplete rationality" owing to lack of knowledge of reality, limitations in their reasoning, imperfections in their attitude, and biases in their feelings. In a merely conceptual framework, it is possible to split this "incomplete rationality" in "limited rationality" and "biased rationality," knowing that this distinction is artificial. The reality of action and decision-making, in which reason serves as a faculty to discourse, feelings serve as an affective state, and will serves as the capacity to freely and consciously govern one's own acts, is a unique reality (Gallo, 2016, p. 36). The term "limited rationality" refers to the boundaries of the external and independent director's knowledge about the company and its competitive environment. The term "biased rationality" refers to their own personal preferences.

The effort that independent directors must make to improve their "limited rationality" has already been mentioned in previous paragraphs. The ability of independent directors to continuously learn and enhance their knowledge of the company and its competitive environment is emphasized. This ability enables them to appreciate reality as fully as possible to better serve the company. However, the effort required on part of the independent director in relation to their "biased rationality" is often greater—and more difficult—than the one previously mentioned, as it necessitates an active exercise of prudence as an inherent quality of managers.

It is evident that the independent director, like any other person, is biased by their own personal preferences—both positive and negative—as to what is appropriate governance for the company. In fact, their positive personal preferences may have been a reason why they were invited to join the board in the first place. Not all personal preferences are always favorable, which necessitates their regular analysis and triage to facilitate the evolution of the family business by implementing required changes.

Good personal preferences are based on moderation or temperance in words and actions—a significant aspect of prudence; patience and grace to bear with integrity misfortunes and hardships; modesty to acknowledge and address the limitations of one's own affirmations; generosity; and altruism. Conversely, bad personal preferences are based on pride, arrogance, conceit, and selfishness emanating from contempt for others and an inordinate desire to be preferred over others.

The independent director has feelings, and it is natural that the results of past decisions—in which they were actively involved—influence those feelings. However, the independent director must learn from both: successes and failures and

remain ever aware that the important thing is to contribute to the company's success.

The independent director is aware that the human being is a "futuristic being, that is present but projected into the future... since human life operates essentially in the anticipation of the future" (Marías, 1920, p. 23 and p. 50). Therefore, they will strive to banish negative personal attachments rooted in previous failures, which almost always have their foundation in pride and are evidenced by a non-acceptance of one's error of judgment.

An especially vulnerable aspect of the independence of the external director is the development of sentiments—positive or negative—toward other members of the board or the company's senior management. This "biased rationality" of the director will cause them to lose their independence—even if unconsciously—as they will favor those members of the board for whom they harbor positive sentiments.

Two other limitations of the external and independent director include pride and loss of objectivity in judging the abilities and intentions of people with whom he/she shares responsibilities. It is his/her personal responsibility to keep both these limitations in check.

The external and independent director, like any other person in the company, needs support to improve their qualities. If this support is not available, it will be difficult for him/her to effectively perform their responsibilities. Therefore, the external and independent director, like other directors, must be open to being periodically evaluated via a positive, constructive, and dialogue-based approach.

This evaluation must be based on the clear and complete understanding of their responsibilities as external and independent directors. It is expected that this article can help shape the incorporation and evaluation procedure of the external and independent director.

5. Conclusion

Ignorance and laziness are two illnesses that may afflict the independent external director. These illnesses prevent them from overcoming their "limited rationality," which impacts their ability to effectively discharge their responsibilities as a director. Independent directors expose themselves to these maladies when they unduly delay board meetings or fail to provide required information. It is, therefore, imperative that external and independent directors, instead of becoming infected themselves, serve as an antidote to these maladies.

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