



Crafting a New Instrument: Development and Validation of the Family Collective Psychological Ownership Scale

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Abstract This study presents the development and validation of the Family Collective Psychological Ownership Scale (FCPO-S), an innovative instrument designed to measure the shared sense of ownership that family members feel toward their business. This scale captures two critical dimensions: family firm identification and interdependence, which reflect the emotional and strategic connections of family members to the enterprise. By focusing on these socioemotional aspects, the FCPO-S underscores the unique dynamics of family firms, where collective commitment and emotional ties can serve as significant competitive advantages. This scale constitutes a valuable contribution to business research, providing significant practical implications for understanding and managing the socioemotional dynamics of family firms.

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Elaboración de un nuevo instrumento: desarrollo y validación de la escala de propiedad psicológica familiar colectiva

Resumen Este estudio presenta el desarrollo y validación de la Escala de Propiedad Psicológica Familiar Colectiva (FCPO-S), un instrumento innovador diseñado para medir el sentido compartido de propiedad que los miembros de la familia sienten hacia su negocio. Esta escala capta dos dimensiones críticas: la identificación de la empresa familiar y la interdependencia, las cuales reflejan las conexiones emocionales y estratégicas de los miembros de la familia con la empresa. Al centrarse en estos aspectos socioemocionales, el FCPO-S subraya la dinámica única de las empresas familiares, donde el compromiso colectivo y los lazos afectivos pueden servir como ventajas competitivas significativas. Esta escala constituye una valiosa contribución a la investigación empresarial, proporcionando importantes implicaciones prácticas para la comprensión y gestión de las dinámicas socioemocionales de las empresas familiares.

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1. Introduction

Collective psychological ownership (CPO) refers to “people’s perception that an object, place, or idea belongs to their own group” (Storz et al., 2020, p. 404). Groups can develop a sense of ownership over objects, places, and ideas, even without legal claims (Verkuyten & Martinovic, 2017). Widespread feelings of ownership and collective ownership are commonly manifested in various actions and expressions aimed at various objectives in our lives and in diverse societies (Pierce & Jussila, 2010). Research around CPO has gained increasing recognition due to its implications in work and organizational settings (Dawkins et al. 2017; Pierce & Jussila 2011; Pierce, Kostova, & Dirks 2003). However, the conceptualisation of the CPO remains in its initial stages. Pierce and Jussila (2010) and Pierce, Jussila, and Li (2018) defined CPO as a collective sense or feeling among peers that the ownership goal is shared by the entire group. This suggests that group context is a crucial factor in CPO formation. In other words, individuals must identify with and share a group mentality to maintain a collective sense of ownership of the group.

CPO is important in family firm studies because it captures the unique, collective dimensions of psychological ownership present within these businesses, which are significantly influenced by family ties. Rantanen & Jussila (2011) provide a theoretical explanation of the primary qualities and motivations associated with collective psychological ownership in family firms, which they refer to as FCPO. The concept of FCPO emerged within the context of the family as a construct that “comprehensively captures the fusion between family and business and reflects the realized family influence on and in interaction with the business” (Rantanen & Jussila, 2011, p. 139). Thus, the FCPO reflects the collective possessive sense or feeling among family members that a particular business is an extension of the family and belongs to them. The FCPO is a significant factor (for example, Astrachan, 2010; Astrachan, 2009) and harbours the collective feelings of possession towards the firm. However, empirical evidence supporting the measurement of this construct in the context of family enterprises remains elusive. Instead, theoretical guidelines have been proposed to highlight the need for further research in this area (Heino et al., 2019; Henssen & Koironen, 2021; Martinović & Verkuyten, 2024). The development of a valid measure will facilitate empirical studies to enhance our understanding of these key constructs in family firms. Although some proposals have been made to measure CPO (Pierce & Jussila, 2011), they are not specifically tied to

the context of family firms and thus miss important elements. Existing CPO measures omit the emotional and affective dynamics that are specific to family firms. Additionally, we emphasise that traditional CPO scales do not fully capture the unique collective dimensions of psychological ownership present within family businesses. This study aims to fill this gap and address the need for a measuring instrument for FCPO as proposed by Henssen & Koironen (2021) and Rantanen & Jussila (2011).

Traditional CPO scales may not adequately measure the social, affective, and even economic facets that are central to understanding family firms’ governance and decision-making (Basly & Saunier, 2020a; Cano-Rubio et al., 2021; Gómez-Mejía et al., 2007) and that stem from the collective nature of ownership within family firms. This is because a shared sense of ownership and the family’s collective identification with the business are fundamental to understanding the dynamics of family firms (Bettinelli et al., 2022; Zellweger et al., 2010). Furthermore, the very nature of family firms means that decisions and management processes are often imbued with the family’s emotional and socio-affective dynamics (Basly & Saunier, 2020b; Björnberg & Nicholson, 2012; Gómez-Mejía et al., 2011; Hernández-Linares et al., 2017; Pozzi et al., 2024), making the understanding of FCPO within this context crucial for comprehending how these emotional and affective sensations towards the family business may influence its management and succession processes (Corona, 2021; Makó et al., 2018; Murphy et al., 2019). Critical elements such as the sense of shared destiny, the necessity for intergenerational familial care, and the emotions of affection, pride, and fondness that predominantly arise from the intersection of familial and commercial domains are absent from current CPO or FCPO scales. Moreover, traditional scales measuring CPO are based on work-related aspects of co-workers or work teams, which fall short of measuring the family affective relationship between family members (Pozzi et al., 2024). The following text demonstrates the sense of collective ownership in certain statements, such as “We (my team members and I) collectively feel that this job belongs to us together” (Pierce et al., 2018) and “My colleagues feel like they are co-owners of the organization” (Su & Ng, 2019). However, in the context of a family business, this sense of collective ownership becomes interchangeable with merging the two systems. This is why statements such as “We feel that the family firm in which we work is ours” are more appropriate for measuring the collective sense of ownership among family members. It is important to note that this proposition is especially

relevant when measuring the collective sense of ownership in a family business. Consequently, the research question guiding our investigation is as follows: *How can Family Collective Psychological Ownership (FCPO) be effectively measured in family firms?*

Thus, the primary objective of this study is to create and validate the Family Collective Psychological Ownership Scale (FCPO-S), which aims to assess collective psychological ownership within family firms. This scale seeks to provide a comprehensive understanding of the collective feelings of ownership that family members experience towards their family business. By doing so, this study aims to make a significant contribution to the literature on family firms by providing a robust instrument for capturing the unique dynamics of psychological ownership within these businesses. The scale focuses on two main dimensions: *family firm identification*, which relates to the emotional connection of family members to the business, and *family firm interdependence*, which emphasises the long-term perspective and vision of the family for the business and the collaboration of family members as a team. This scale serves as a valuable resource for both scholars and practitioners, as it facilitates an evaluation of the extent and consequences of psychological ownership shared by family members towards their business.

This article comprises a review of prior literature, the process of constructing and validating the scale, and ultimately the contributions, conclusions, limitations, and prospective research directions.

2. Theoretical Background

2.1. Collective psychological ownership

The concept of ownership is rooted in the psychology of possession (Rochat, 2014). The study of possessions is an interdisciplinary field encompassing psychology, sociology, anthropology, and consumer behaviour (Belk, 1988; Sherry, 1993). This concept develops early in life and may have an evolutionary origin (Nijs et al., 2021). As early as two years old, children assert their possession of objects by saying “mine!” The perception of these objects shifts from being inherently inalienable to potentially negotiable in reciprocal exchanges (Rochat, 2011). Studies have revealed that children understand psychological ownership. Research has demonstrated that, like adults (Kirk et al., 2018), children can infer ownership, both legal and psychological, by observing the actions of others. Additionally, research indicates that children begin to develop a sense of “we” around age five (Sani & Bennett, 2003), and own-

ership considerations can influence their actions towards objects in the future (for example Davoodi et al., 2020; Kanngiesser et al., 2020).

Drawing from the field of social psychology, which examines how individual or group behaviour is shaped by the presence and behaviour of others (Myers & Twenge, 2019), the theory of self-categorisation emerged. This theory complements social identity theory, which aims to explain the cognitive processes and social conditions that underlie intergroup behaviours (Hogg, 2016; Turner & Oakes, 1986). The theory of self-categorisation explains when a person perceives a group of people, including themselves, as a collective entity and the consequences of viewing people in group terms (Reynolds et al., 2003). Drawing from cognitive psychology (Turner et al., 1987), self-categorisation theory posits that individuals can be classified at various levels of abstraction, as either a singular “me” (personal identity) or a more inclusive “we” (social identity). When individuals are categorised as part of a group, they view themselves and others within that group as being identical and interchangeable (Turner & Oakes, 1986). The transition from a personal self to a group self involves a shift in terms and concerns related to the self, including a change from personal self-esteem to collective self-esteem, personal efficacy to collective efficacy, personal responsibility to collective responsibility, personal interests to collective interests, and personal ownership to collective ownership (Nijs et al. 2021). Our sense of self is intrinsically tied to the groups we belong to and vice versa. The self-categorisation theory suggests a process of depersonalisation, which involves redefining the self from a personal identity perspective (“I”) to a group identity perspective (“we”) (Verkuyten & Martinovic, 2017). Collective ownership perceptions can arise in various contexts, such as within organisations, neighbourhoods, and entire nations (Storz et al., 2020). These perceptions can impact one’s attitudes towards their in-group (Pierce & Jussila, 2010) and how they relate to other groups (Verkuyten & Martinovic, 2017). The transition from the individual to the collective is believed to occur when the individual is present in the objects of possession (people, objects) and becomes an extension of the self. Furthermore, individuals recognise that they are not only psychologically linked to the object but also to others, and that the interactive dynamics with other team members reinforce these feelings of possession (Kozłowski & Klein, 2000). When the shift from the individual to the collective consolidates into a mutual and shared feeling for the object of possession, it is called CPO. Collective ownership has been used to predict motivations, attitudes, and behaviours at the group level and

has both positive and negative effects at the individual and group levels (Pierce & Jussila, 2010). Pierce & Jussila (2010) argued that team members in an organisation may perceive that their team has collective ownership of their work, workspace, and results of their work. They may prevail over personal feelings because of the influence of the group through cognitive processes involving the acquisition, storage, transmission, manipulation, and use of information (Kozłowski & Klein, 2000; Su & Ng, 2019). The construct of CPO is “constituted as a reflection of the psychology of “us” and “our”, which emerges through interactive dynamics through which individuals arrive at a single, shared mindset that refers to the feeling of ownership over a particular ob-

ject” (Pierce & Jussila, 2010, p. 810). The development of shared feelings of ownership relies on a collective acknowledgement of joint efforts towards the potential object of ownership. Everyone within the group must view activities and their results as a product of their own contributions, in conjunction with the input and efforts of their interdependent collaborators (Pierce & Jussila, 2010). This collective recognition is essential for the formation of a sense of shared ownership among group members.

Table 1 provides an overview of the main definitions of CPO in the organisational context and introduces the next section, where the FCPO concept is developed in more detail.

Table 1. Definition of the construct of CPO

Organization's field		
Author	Year	Definition of CPO
Pierce and Jussila	2010	Collective psychological ownership (CPO) is a collectively held sense or feeling of ownership for a particular object, idea, or entity
Su and Ng	2019	CPO refers to the sense shared by group mates that they jointly own their organization.
Verkuyten and Martinovic	2017	CPO is a state of mind whereby groups can experience objects, places, and ideas as belonging to them ('ours'), even without legal ownership.
Wang et al.	2023	Collective psychological ownership of nature is defined as individuals' perception of their group's feeling that 'nature is ours'
Martinović and Verkuyten,	2024	CPO implies a sense of group-based responsibility and can stimulate civic involvement and stewardship behaviours.
Family firm's field		
Rantanen and Jussila	2011	F-CPO (Family Collective Psychological Ownership) refers to the shared sense of ownership among family members towards the family business

2.2. Family collective psychological ownership

This segment aims to elucidate the concept within the context of family firms and their constituent components. It is necessary to understand that the concept of CPO is different in the non-family organisational context than in the family context. This distinction is crucial to understanding how the CPO operates differently in family

businesses, influencing unique aspects such as intergenerational succession, preservation of the family legacy, and the blending of family and business dynamics. In the family context, the CPO not only affects the organization as a business entity, but also the family as a social and emotional unit aso it can see in the Table 2.

Table 2. Differences between CPO and FCPO

Characteristics	CPO	FCPO
Involved members	Refers to employees and managers who do not necessarily have family ties.	Refers specifically to family members who are involved in the company.
Organizational dynamics	Organizational dynamics are based more on professional relationships and formal corporate structures.	Organizational dynamics are strongly influenced by family relationships, shared history, and family values.
Long term perspective	Focuses more on professional development and career progression of individuals.	FCPO may influence succession processes, which are crucial characteristic of family businesses.
Identity	It is more related to corporate and professional identity.	It is closely linked to family identity and the perception of the company as an extension of the family.
Emotions	Although there may be strong emotional attachment, it is generally less intense than in family businesses.	It involves a more intense emotional burden due to family ties.

The conceptual foundation of this study is based on the framework postulated by [Rantanen and Jussila \(2011\)](#), which informed the development of the scale elaborated in subsequent sections. Family Collective Psychological Ownership (FCPO) is defined as the collective sense of possession held by the owning family towards the business, indicating realised family influence on the business ([Rantanen & Jussila, 2011](#)). These authors emphasised that FCPO emerges from collective control over the business, interdependent investment in the business, and intersubjective familiarisation with the business. Family members must recognise their participation in collective action as part of the family entity, which holds psychological significance for them. Thus, FCPO encompasses a broader range of interactions beyond individual cognition and affect, highlighting the family's collective feelings, knowledge, and beliefs about the business ([Rantanen & Jussila, 2011](#)).

According to [Rantanen and Jussila \(2011\)](#), the concept of FCPO can be used to measure and understand the fusion between family and business values in family businesses by capturing the collective sense of possession held by the family towards the business. This sense of ownership transcends individual cognition and affect, reflecting a socially constructed structure that embodies shared feelings, knowledge, and beliefs about the business itself. The FCPO construct enables the analysis of how family members collectively acquire, store, transmit, manipulate, and use information about the business, as well as how they transfer affective states, such as through face-to-face meetings. This collective memory and intimate knowledge of the business, developed through intersubjective familiarisation, creates the essence of the family business, indicating the extent to which the family has

collectively arrived at a shared understanding of the business. Therefore, FCPO serves as a key defining construct of family businesses, offering a means to measure the 'fusion' between family and business that is fundamental to understanding the unique dynamics of family businesses.

Rendering to [Rantanen and Jussila \(2011\)](#), the four dimensions necessary for psychological ownership in family firms are: A. *Efficacy and effectance*: Individuals need a sense of possession to experience efficacy and control of their behavior's causes and consequences. B. *Self-identity*: Arises from the need to self-determine and maintain a lasting sense of self, related to possessions defining the individual. C. *Home*: Reflects the need to belong to a space, strengthening self-identity, and sense of ownership. D. *Stimulation*: Related to the need for emotional or behavioral activation, which can strengthen psychological ownership. CPO is a dynamic process of interaction between individuals and companies.

Using FCPO rather than CPO to refer to family businesses is more appropriate because FCPO is a family centric specification of CPO, specifically tailored to capture the unique dynamics of family businesses ([Heino et al. 2019](#)). This specification acknowledges the central role of the family in the business, which is a distinctive aspect of family business research and practice, and the socioemotional components to differentiate non-family firms ([Bubolz 2001](#); [Gómez-Mejía et al. 2011](#)).

The application of CPO to the family business context through FCPO underscores the importance of the family's collective identity and its influence on the business, which is not adequately captured by the more general construct of CPO.

2.3. Measuring CPO in family firms: a road ahead

According to our previous review, there were no scales measuring this construct until 2017. In the organizational context, [Pierce et al. \(2018\)](#) proposed a scale to measure CPO (see [Annex 1](#)). It was developed through a rigorous process that began with the adaptation of existing measures of Individual Psychological Ownership (IPO) to reflect collective ownership at the team level. This process was guided by the theoretical work of [Pierce and Jussila \(2010\)](#) on CPO and involved a qualitative study with a panel of judges to generate a set of items specifically designed to measure CPO. The panel helped ensure that the items were homogeneous and valid for capturing the essence of CPO, focusing on the collective sense of “ours” rather than the individual sense of “mine”. According to [Pierce et al. \(2018\)](#), the development of the CPO instrument involved several steps to ensure its construct validity, including qualitative and quantitative phases. The qualitative phase involved a panel of judges who assessed the items for content validity, with a high rate of correct identification of CPO items, suggesting good content validity and discriminant validity. The quantitative phase involved item purification and assembling evidence to support the instrument’s construct validity through a series of field studies.

Similarly, [Su & Ng \(2019\)](#) developed a scale to measure CPO in an organizational context (see also [Annex 1](#)). It is based on a bifactor analysis structure, including one general factor, shared possessiveness, and two specific factors: shared decision-making and shared hardship endurance. The scale was designed to capture the shared sense among co-workers that they jointly own the organisation, focusing on shared possessiveness toward the organisation, involvement in decision-making, and enduring hardships together. The scale demonstrated satisfactory internal consistency, and both convergent and divergent validity were supported by correlations with validation scales in the expected directions, indicating good preliminary psychometric properties.

However, CPO scales are insufficient to measure CPO in family firms because they do not fully capture the unique, collective dimensions of psychological ownership present within family businesses and the feelings resulting from family ties ([Cailluet et al., 2018](#); [Treviño-Rodríguez & Bontis, 2010](#)). The concept of FCPO specifically addresses the collective feelings, knowledge, and beliefs about the business held by the family, which traditional CPO scales may not measure adequately. The FCPO emphasises the shared sense of ownership and collective identity of the family in relation to the business, aspects that

are fundamental to understanding the dynamics of family firms but are not explicitly targeted by general CPO scales. Therefore, to accurately assess the fusion between family and business values in family businesses, it is necessary to use measures such as the FCPO, which are designed to reflect the collective nature of ownership within these firms.

In this way, and as largely acknowledged by the literature on family firms, these companies often exhibit strong senses of identity and ownership not just among family members but potentially among non-family employees as well, due to the unique culture and values that these firms may foster ([Pierce & Jussila, 2010](#); [Sánchez-Marín et al., 2016](#); [Soler et al., 2017](#)). The sense of “ours” that CPO captures can be crucial for understanding the dynamics within family businesses, where the overlap between family and business systems can intensify feelings of ownership and belonging ([Pierce et al., 2003](#)). In the case of family firms, the business satisfies the need for home or shelter, stimulation, entertainment, and social identity. Together, these motivations explain the motives and non-economic goals of family businesses ([Pierce & Jussila, 2010](#); [Sánchez-Marín et al., 2016](#)).

To create the FCPO concept, [Rantanen & Jussila \(2011\)](#) based their proposal on the F-PEC scale because, despite its widespread use and significant contributions to measuring family influence in businesses, it primarily measures only the potential for family influence rather than the actual realized influence. The F-PEC scale offers descriptive and formal measures that indicate how a family might affect the business but falls short of capturing the extent to which this potential influence is realised within the business operations. The F-PEC is closer to measuring actual influence by capturing attitudes or intentions and does not fully measure realised influence. The F-PEC scale ([Astrachan et al., 2002](#)) was developed to solve the dilemma of defining a family firm by measuring family influence through three subscales: power, experience, and culture. The power subscale F-PEC involves aspects such as the percentage of family participation, governance structure (percentage of family members on the board), and management structure (percentage of family members actively participating in the firm’s management team). The F-PEC experience subscale includes information on business succession (ownership generation, generation active in management, and generation active on the governing board) and the number of family members actively contributing to the firm. Finally, the F-PEC culture subscale considers the overlap between family and business values, as well as the entrepreneurial family’s commitment to the firm

(Astrachan et al., 2002; Klein et al., 2005; Rau et al., 2019).

Suppose CPO is mismanaged or not managed at all, it can subsequently have adverse effects on the management of the family firm and its results due to the emotional distancing that would generate less interest in the company's affairs, leading to family problems (Vandekerckhof et al., 2022). Among the conflicts caused by inadequate management of FCPO are the processes inherent to succession, as they are derived from decision-making which, on many occasions, is collective and not exempt from the emotional and socio-affective nature of the family (Vazquez & Campopiano, 2023).

However, regarding the measurement of FCPO, we did not find evidence of an instrument that measures this construct. Given the socioemotional nature of family firms, we consider it relevant to create a robust instrument that captures the implications of CPO in family firms.

3. Method

Considering all the factors mentioned above, we created and validated a scale, the FCPO-S. To develop this scale, a quantitative, descriptive, and instrumental type of research was conducted (Hernández-Sampieri et al., 2014) to determine the psychometric properties of the instrument in family businesses through a test creation process. A comprehensive framework was proposed, consisting of nine steps that adhere to the guidelines for creating psychometric tests outlined by Muñiz and Fonseca-Pedrero (2019). The initial stage is grounded in a theoretical foundation.

3.1. Definition of the measured variable

In this first phase, an exhaustive and detailed review of documents, concepts, and antecedents of the construct of FCPO was conducted, thus allowing the definition of the objective and study population and clarifying the definition of the attribute.

FCPO is defined as the collective and shared possessive feeling among the members of a family firm (Rantanen & Jussila, 2011). Building upon this work, Rantanen and Jussila (2011) proposed three dimensions or subscales of their FCPO concept: collective control (CC), intersubjective familiarisation (IF), and interdependent effort (IE). CC indicates the family's influence over the firm, encompassing the extent to which the family has exercised its capacity to control the firm over time and its ability to manage the business collectively. It involves collective control over a target of collective possession. This signifies those members of a clearly defined social entity, such as a family in the context of a family business,

engage in collective action focused on ownership. The process of collective control is an integral component of the broader framework that leads to the development of CPO, alongside interdependent investment and intersubjective familiarisation with the target.

IF Intersubjective familiarisation refers to the process of knowledge processing and personalisation of a target of ownership as part of the collective psychological ownership (CPO) construct. It involves members of a social entity, such as a family, engaging with a target of collective possession, which, in this context, is the business. This process is one of the elements through which CPO emerges, alongside collective control and interdependent investment in the target.

Finally, IE shows the extent to which the family views the values of the business as their own, the extent to which the values of the business reflect the family's identity, and how collective actions shape the future of the business itself. Studying and understanding CPO is an investment that can ensure the success of family businesses in economic and non-economic terms. Family business identity refers to the collective understanding of "who we are" and "what we stand for" in a family business. This identity emerges from the intersection of family and business systems, creating a unique organizational identity (Boers 2013). Family business identity can be seen as the foundation upon which collective psychological ownership (CPO) is developed (Rantanen & Jussila, 2011). As family members internalise this shared identity, they are more likely to develop a collective sense of ownership of the business (Parada & Dawson, 2017). Family identity can be shaped by the intergenerational transmission of attachment patterns, which shape the emotional foundations of family relationships, influence trust and intimacy, and contribute to the overall sense of connection and investment within the family unit (Li et al., 2023). It is necessary to understand that family members in a business are inherently interdependent, relying on each other's skills, efforts, and resources to make the business successful (Aldamiz-Echevarria et al., 2017; Corona, 2021). This interdependence can foster a sense of collective ownership as family members recognise their shared stake in business outcomes (Tagiuri & Davis, 1996).

3.1.1. The importance of "we" and "ours"

A crucial stage in creating the scale was examining the role of language in shaping thought and behaviour (Whorf, 1997). Numerous studies have demonstrated that language plays a significant role in shaping individuals' perceptions, interactions, and behaviours, both consciously and subconsciously (Boroditsky, 2011). Language is

widely regarded as a cultural, social, and psychological phenomenon; thus, linguists strive to comprehend how words and phrases can affect individuals (Kramsch, 2014). The Sapir-Whorf hypothesis posits that the language we use can influence our perception of the world and our behaviour within it (Perlovsky, 2011). Language profoundly influences cognition and interaction, shaping thoughts by influencing how individuals perceive the world and interact with it. It is a fundamental aspect of human cognition and interaction, and language reflects its significant influence on various aspects of thought, emotion, and behaviour (Colombetti, 2009).

Research has also demonstrated that the frequent employment of first-person plural pronouns, such as “we,” “us,” “our,” and “ours,” is correlated with stronger and more positive relationship dynamics (Na & Choi, 2009). The pronouns individuals use when discussing their romantic relationships may offer insights into their attachment styles. People with a more secure attachment style typically employ more “we” and “our” pronouns, reflecting a stronger sense of connection and interdependence within the relationship (Pennebaker et al., 2003). Thus, the utilisation of “we” and “our” in language may symbolise interconnectedness, mutual respect, and shared identity within relationships, ultimately influencing the dynamics and quality of the relationship (Mercer, 2000).

Based on the information provided earlier, it can be inferred that the relationship between feelings of ownership and the utilisation of pronouns such as “we” and “our” may be impacted by how we convey and express our connections through language. Feelings of ownership are commonly associated with attachment and a sense of belonging to something or someone. In the context of family firms, the use of “we” and “our” may signify a feeling of belonging and connection with others, which is related to ownership and emotional attachment. Thus, the way we employ these pronouns may be shaped by our feelings of ownership and attachment to the individuals or groups we identify with. This is the reason why the items of the scale have been constructed with the use of “we” and “our” to attain a collective perception of relationships that surpasses the use of “I.”

3.2. Specifications

We suggest the use of a Likert scale, which is a common psychometric tool employed in questionnaires to evaluate the attitudes or opinions of respondents towards a specific topic, statement, or item (Batterton & Hale, 2017). This scale typically consists of a series of statements to which respondents indicate their level of agreement or disagreement (Batterton & Hale, 2017; Croasmun & Ostrom, 2011; Joshi et al., 2015). The Likert scale is widely used in social sciences and market research to determine the strength of respondents’ feelings regarding a given subject (Croasmun & Ostrom, 2011). It is recommended that seven response options be used when employing Likert scales, particularly in online surveys, as suggested by Finstad (2009), as was the case in this instance. This recommendation is based on the idea that providing a greater number of options enables respondents to express their thoughts or opinions more accurately, potentially resulting in more precise and accurate data collection in Internet-based research (Tuten, 2010). Additionally, we opted to utilise an online survey as it offers several advantages that make it a popular choice in survey research, such as eliminating interviewer bias and reducing the need for data entry as respondents input data directly into an electronic file (Tuten, 2010; Van Selm & Jankowski, 2006). Furthermore, online surveys are cost-effective, time-efficient, and easy to administer and complete. Moreover, they facilitate the recruitment of respondents with deviant or covert behaviours by providing anonymity, which is essential for sensitive topics (Fielding et al. 2016). Therefore, a formal invitation to participate was transmitted via the Google Forms virtual platform, accompanied by a link to complete the scale and a formal invitation to do so. It is important to note that in the initial section of the scale, informed consent was explicitly stated, and the appropriate processing of personal data in accordance with the EU General Data Protection Regulation (GDPR)¹ and Organic Law 3/2018, of 5 December, on Personal Data Protection and Guarantee of Digital Rights² was clarified.

3.3. Item construction

In developing the items, we adhered to the guidelines established for their creation (Haladyna, 2004; Haladyna & Downing, 1993) while

1. Regulation (EU) 2016/679 of the European Parliament and of the Council, of 27 April 2016, on the protection of natural persons with regard to the processing of personal data and on the free movement of such data (General Data Protection Regulation). <https://data.europa.eu/eli/reg/2016/679/oj>

2. Organic Law 3/2018, of 5 December, on the Protection of Personal Data and Guarantee of Digital Rights”, adapting the Spanish legal system to Regulation (EU) 2016/679 of the European Parliament and of the Council, of 27 April 2016, on the protection of natural persons with regard to the processing of their personal data and on the free movement of such data.

upholding the principles of representativeness, relevance, diversity, clarity, simplicity, and comprehensibility (DeVellis, 2017; Hinkin, 1995; Marquez, 2023; Muñiz & Bartram, 2007).

We created the scale, which was elaborated considering the conceptual and structural definition of the construct, thus allowing the creation of 40 items, distributed in 6 questions of identification or characterisation of family businesses and 34 items focused on specifically assessing the family collective psychological ownership. This initial version of the scale was assessed by a team of researchers, who, from their experience and training, allowed the respective improvements to be made, especially in the addition of identification questions, before proceeding to the next phase. All items were translated into Spanish, as the questionnaire was designed for Spanish-speaking participants. The next editing pilot test played a crucial role in verifying that the translation was clear and easily understood while ensuring its accuracy.

3.4. Editing

Once this initial version of the test was established, we proceeded to the next phase of the process, aimed at evaluation by expert judges (Hardesty & Bearden, 2004), which allowed us to obtain evidence of content validity. To carry out this activity, a format for content evaluation by judges was created to validate the items and check whether the working criteria were appropriate. To achieve this objective, five judges with expertise in psychometric assessments (one expert), family business (three experts), and psychological processes (one expert) in the target population and the construct being measured were selected (Boateng et al., 2018; Haynes et al., 1995; Pierce et al., 2018). The chosen judges were knowledgeable about the specific domain under evaluation. They were asked to evaluate the scale considering two aspects: relevance, referring to the item responding to the dimension considering the theoretical underpinning of the construct, and *clarity*, which aims to assess that the item has appropriate wording and can be understood by the population to be evaluated. In our case, relevant -irrelevant, clear - unclear (0 means that the item evaluated is irrelevant or unclear). This was used generally in the review for reformulation and deletion of items (Lynn, 1986). They were also asked to make observations on the entire process or the items in general to improve the test. The format established for the evaluation by judges was sent by e-mail to each of the five experts, together with a theoretical support document to provide greater clarity on the concept to be evaluated.

Once the content validity evaluations were re-

ceived from the judges, they were analysed, evaluating each item based on the characteristics of pertinency and clarity and considering the qualitative observations of the experts. The data were stored in the Microsoft Excel 2019 program through a matrix, which made it possible to identify the degree of agreement of the experts with respect to each of the items and the instrument in general, making it possible to consolidate a total of 12 questions for identifying the business dynamics and 23 items for evaluating the family collective psychological ownership. Also, from this review, spelling and wording corrections were made to most of the items, considering the recommendations regarding clarity and qualitative observations—the 35 items made up the Pilot Test which corresponds to the next phase.

3.5. Pilot test

The research group contacted 12 family businesses and respectfully asked them to participate in the study via email. To carry out the pilot test, the objective of the research project and the purpose of the pilot test were explained to those evaluated, which served to create accurate approximations of the research projects before establishing the final test (Muñiz & Fonseca-Pedrero, 2019). It is important to emphasise that this phase contributes to the test's validity and reduces possible biases and errors that could occur in the final application. According to Fink (2003) and Saunders et al. (2009), the standard size for a pilot study is ten participants. The pilot test involved 12 individuals who exhibited characteristics like the population under study. The survey was distributed via email using the Google Forms application. Pilot test subjects were selected based on proximity to the research team, and their participation was solicited and agreed upon. The sample consisted of twelve respondents, comprising first-, second-, and third-generation members of the business family. At the time of testing, all participants held administrative or managerial roles in their respective family enterprises. The group comprised nine men and four women. We meticulously recorded every occurrence during the pilot, including participants' queries, recommendations, comprehension of the items, and any flaws or complications identified in the instrument.

Thus, family members were asked to complete the questionnaire and express their experience with its application. This allowed them to verify whether the test version was understandable, whether the items were clear, and whether the language used according to the context was appropriate. The original language was Spanish. The pilot test allowed some adjustments to be made concerning the *clarity* of specific questions

and indications regarding certain technical terms established in the scale that the respondents did not understand. In addition, according to the participants' suggestions, additional questions were added, especially in the identification section, which was necessary to achieve the desired revision. This procedure facilitated the integration of 37 identification queries pertaining to respondent data, company data, company organisation, the management team, and succession dynamics. In addition, 28 evaluation-related queries for FCPO were incorporated.

3.6. Application of the test

The context of this study is the Autonomous Community of Navarre in Spain. It is predominantly composed of family businesses, which account for 79.46% of the total business landscape and span all sectoral activities, particularly in the primary sector. In 2017, family firms played a significant role in the region's economy, generating over 3,500 million euros in Gross Value Added (GVA), amounting to 58% of the total produced in Navarre, and providing employment to 66,556 individuals (Garcés-Galdeano et al., 2020). Another positive aspect highlighted in the study is the longer lifespan of family-owned businesses in Navarre, which average 18.4 years, compared to the 17-year average for non-family firms. Additionally, these family firms have lower debt ratios (2.58%) than non-family companies (2.87%).

The sample described below was a non-probabilistic sample, where the choice of sample was subject to the demands of the research (Hernández Sampieri et al., 2014). Information was collected by inviting different family businesses in Navarre to fill out the instrument in Spanish. The database information from the study by Garcés-Galdeano et al. (2020) was cross-checked using SABI, a tool with general information and annual accounts of more than two million Spanish companies, to verify whether the ownership was family owned. A total of 1,052 surveys were distributed, of which 124 responses were garnered, reflecting a 13.4% response rate. Of these 124 responses, only 107 were deemed eligible as they adhered to the consent and use of data criteria, were from family businesses, and were completely filled out, resulting in a final sample of 107 completed responses.

To date, 107 participants have responded to the invitation. The sample comprised 81 men (76%) and 26 women (24%). The ages of the participants ranged from 24 to 72 years old from different industries, such as food (0.93%), construction (20.56%), services (28.97%), industry (32.71%), agriculture (3.74%), communication (1.87%), hospitality (0.93%), renewables (4.67%), chemical (0.93%), and commerce (4.67%). All were cur-

rently working in the company and were involved in management and administrative activities. An additional significant criterion in the sample was the requirement of a minimum of two individuals working in the family business to ensure the collective nature of the enterprise. The distribution of family members working in family firms was as follows: 2 (43.93%), 3 (29.91%), 4 (15.89%), 5 (2.80%), 6 (2.80%), 7 (0.93%), 8 (1.87%), 10 (0.93%), and 13 (0.93%). The sample included first-to fourth-generation participants.

Additionally, 18 businesses in the study (16.80%) were considered microenterprises, comprising companies with 1 to 9 employees. Additionally, 56 businesses (52.33%) were classified as small enterprises with 10-49 employees. Furthermore, there were 22 medium-sized companies (20.05%) with 50-199 employees and 11 large companies (10.28%) with 200 or more employees.

Regarding the representativeness of the sample, it can be asserted that our sample appears to be adequately representative of family businesses in Navarre, exhibiting diversity in terms of sector, company size, and generational involvement. The sample aligns well with the key characteristics highlighted in the executive report by Garcés-Galdeano et al. (2020) such as the presence of family firms across various sectors and sizes. Although our sample is small, it provides a substantial representation of family businesses in Navarre. Our sample encompasses a variety of sectors, with the highest representation in industry (32.71%), services (28.97%), and construction (20.56%). This corresponds with the conclusion of the executive report that family businesses are significant across all sectors in Navarre. Our sample comprises 16.80% micro, 52.33% small, 20.05% medium, and 10.28% large enterprises, while the executive report indicates 65.13% small, 33.97% medium, and 18.37% large family businesses. Our sample demonstrates a good representation across different company sizes, albeit with a slightly higher proportion of medium and large enterprises than the population of Navarre as a whole. Furthermore, our sample includes companies from the first to fourth generations. Although not directly comparable to the data in the executive report, this provides insight into the gender distribution in the leadership of family businesses. Our sample ranged from 24 to 72 years, suggesting a broad representation of different generations in family business leadership.

3.7. Psychometric properties

3.7.1. Factor analysis

Factor extraction is a crucial step in the scale development process, which aims to determine the optimal number of factors that best fit a set

of items. Employing factor analysis, this phase involved regressing observed standardised variables on latent factors to reveal the internal structure of the items. The emphasis lies on the number of factors, loading estimates' salience, and the relative magnitude of residual variances.

Before proceeding to the analysis, we began our Exploratory Factor Analysis (EFA) ³by conducting a Bartlett test of sphericity on the scale items to assess the factorability of the data. The test yielded a statistically significant result (chi-square = 1389.29, 171 d.f., p-value = 0.000), indicating that the variables were correlated and that it was appropriate to search for common factors. To further validate these findings, we performed a Kaiser-Meyer-Olkin (KMO) test, which returned an overall KMO value of 0.91, well above the recommended minimum cutoff of 0.6, thus supporting the factorability of the data.

In addition, we performed a scree plot indicating two factors with eigenvalues above 1. To further confirm this, we conducted a parallel analysis that also supported the two-factor solution. Additionally, using Velicer's MAP criteria, we found a minimum MAP value of 0.026 for the two factors. Thus, two factors must be considered in the EFA. It is important to highlight that the factors extracted at this stage provide a hypothetical framework for the scale, and their dimensionality requires validation before we can assess reliability and validity in the next steps. In our case, using varimax rotation, the analysis revealed two factors with eigenvalues greater than 1: Factor1 explains approximately 44.15% of the variance; Factor2 explains approximately 42.99%, together explaining approximately 87.15% of the variance. However, these factors do not fully correspond with the proposed theory, suggesting that further investigation is necessary to refine our understanding and ensure that the scale accurately reflects the intended dimensions of the construct. This discrepancy emphasises the need for additional validation to reconcile empirical findings with existing theoretical frameworks.

We followed the guidelines established by Costello and Osborne (2005) for item analysis, which involved scrutinizing item loading tables and excluding items exhibiting loadings below 0.40 (Netemeyer et al., 2003). In this case, one of the variables was discarded from the subsequent confirmatory analysis. This decision was based on its low factor loading (0,15) and high unique vari-

ance (0,97), indicating that it was not well represented by the extracted factors and contributed insufficiently to the overall model structure.

3.7.2. Scale evaluation

The dimensionality test involves assessing the hypothesised factors or factor structures derived from a previous model. Methods for conducting dimensionality tests include confirmatory factor analysis, bifactor modelling, and measurement invariance.

Confirmatory Factor Analysis (CFA) is a psychometric assessment tool that allows for the organised comparison of predefined factor structures based on a fit assessment process. This technique evaluates the relationships between latent factors, while accounting for measurement errors. CFA is based on an exclusive ICM model that assumes zero cross-loadings between items and non-target factors. The fit assessment process involves various methods, such as the chi-square test of exact fit, Root Mean Square Error of Approximation (RMSEA ≤ 0.06), Tucker-Lewis index (TLI ≥ 0.95), Comparative Fit Index (CFI ≥ 0.95), standardised root mean square residual (SRMR ≤ 0.08), and Weighted Root Mean Square Residual (WRMR ≤ 1.0). These thresholds play a vital role in determining acceptable fit and verifying the dimensionality.

We conducted a structural equation modelling (SEM) analysis for confirmatory purposes, standardising two sets of variables based on their significant factor loadings. This approach allowed us to evaluate the relationships between the observed variables and underlying factors A and B using robust standard errors for accuracy. Initially, the goodness-of-fit statistics were unsatisfactory, leading us to remove variables with standardised coefficients below 0.5 and then 0.65, resulting in 12 final variables. This refinement significantly improved the model fit. Table 3 shows the different indicators analysed for the proposed models until we found the model that best fits our sample of family businesses, complying with all the parameters.

The final model had an average fit (chi-square test= 63,991, RMSEA=0.044, GFI=0.988, TLI=0.985, SRMR= 0.040)⁴

3. We provide the results of the EFA using the principal factoring method, however we also repeated the analyses using alternative methods such as Weighted Least Squares or Maximum Likelihood. We observed no significant changes in the results and conclusions, concluding that the results of the EFA analysis are stable across alternative factoring methods.

4. Once we have confirmed the two first-order factors, we proceed to test the second-order factor. We have estimated such a model, but it does not improve the fit compared to a model without a second-order factor.

Table 3. Results of the CFA models for the FCPO scale

Construct	X ²	<i>p</i>	RMSEA	CFI	TLI	SRMR
Model 1 (2 factors;18 variables)	211.924	0	0.089	0.92	0.908	0.071
Model 2 (2 factors;15 variables)	114.904	0.003	0.069	0.962	0.955	0.048
Model 3 (2 factors;12 variables)	63.991	0.143	0.044	0.988	0.985	0.04

3.7.3. Reliability

Reliability, which indicates the consistency of measurements under identical conditions, was assessed using various statistics for scale evaluation. Common reliability tests include Cronbach's alpha, ordinal alpha for binary and ordinal scale items, test-retest reliability, McDonald's Omega, Raykov's rho, Revelle's beta, split-half estimates, Spearman-Brown formula, alternate form method, and inter-observer reliability.

Cronbach's alpha is widely used to evaluate internal consistency, with a threshold of 0.70 considered acceptable, and 0.80 and 0.95 preferred for psychometric quality. Cronbach's alpha is the most common and seems to have received general approval. In our case, the two extracted dimensions had Cronbach's alpha values above 0.9. (0.9002 and 0.9129 respectively). Table 4 shows the items that make up each factor and the reliability of the two factors.

Table 4. Internal consistency of the construct

Construct	Mean	Sd	Cronbach's alpha
Family firm identification			
We feel that the family firm in which we work is ours.	6.673	0.822	0.9001
We take pride and satisfaction in working in this family business.	6.626	0.885	
Our personal and professional growth is linked to the growth of the family business.	6.131	1.367	
We consider that the problems of the family firm are also our problems.	6.243	1.220	
Our personal values are represented or complementary to the values of the family business.	6.140	1.217	
The work we do demonstrates our commitment to family business.	6.570	0.912	
We identify with the family business	6.551	0.934	
Family firm interdependence			
In general, we feel motivated as a group to continue working for the family business.	6.009	1.232	0.9129
In general, we believe that the family firm interdependence enables and will enable the needs of all members of the family firm to be met.	5.850	1.413	
In general, we believe that the family firm interdependence fosters a collective feeling of ownership of the company. That is, we feel that we own the company.	5.963	1.324	
In general, we believe that the orientation of the family firm encourages the development of feelings of affection for Family firm (love, pride, affection...).	5.860	1.342	
The interdependence of the family firm encourages care for all of us even in difficult times.	6.271	1.162	

3.7.4. Tests of scale validity

Scale validity measures how well an instrument accurately assesses the intended latent dimension or construct. Validation is an ongoing process initiated by the identification and definition of the study domain and extends to assessing generalisability with other constructs. Validation methods include content validity, often conducted before administering the instrument, and subsequent assessments of criterion validity (predictive and

concurrent) and construct validity (convergent, discriminant, differentiation by known groups, and correlations) following survey administration. [Campbell and Fiske \(1959\)](#) and [Lowe and Ryan-Wenger \(1992\)](#) introduced two key aspects for assessing the construct validity of a test.

Convergent Validity: This aspect focuses on the confidence level in the measurement of a trait by its indicators. It examines the extent to which different indicators or measures of a trait yield

consistent and similar results, thereby reinforcing the validity of the construct.

Discriminant Validity: This aspect evaluates the degree to which measures of distinct traits are unrelated. It assesses whether the test can effectively differentiate between the construct under consideration and unrelated constructs, ensuring that the test does not inadvertently capture aspects of different traits.

In the context of structural equation modeling, Confirmatory Factor Analysis (CFA) has been commonly employed to assess construct validity (Jöreskog, 1969). CFA allows researchers to confirm the underlying factor structure proposed for a set of indicators, providing statistical evidence for the test's convergent and discriminant validity.

3.7.5. Convergent validity

The [Fornell-Larcker \(1981\)](#) criterion is frequently used to evaluate the extent of shared variance among latent variables in a model. Convergent validity of the measurement model, as per this criterion, is assessed through Average Variance Extracted (AVE).

Average Variance Extracted (AVE): The AVE measures the proportion of variance captured by a construct compared to the variance attributed to measurement error. AVE values above 0.7 are considered highly favourable, while values around 0.5 are deemed acceptable. A higher AVE indicates stronger convergent validity, suggesting that the latent variable effectively captures the intended constructs. In our case, the AVE measures were 0.596 and 0.651, which are acceptable.

3.7.6. Discriminant Validity

Discriminant validity was evaluated by comparing the AVE of each latent variable with the squared correlations between those variables and other latent variables. The AVE should be greater than the squared correlation between the latent variable and any other variable. This ensures that each latent variable captures more variance from its indicators than it shares with other latent variables, establishing discriminant validity. In our case, the AVE (0.596 and 0.651) is greater than the squared correlation between the latent variable and any other variable (0.591).

3.8. Final version

The purpose of the FCPO-S is to measure the FCPO (See Annex 2). It is administered to family members currently employed in the family business. The FCPO-S comprises 12 items that are evaluated on a scale of 1-7 and can be administered manually or digitally via an online platform. Additionally, the scale can be administered either collectively or individually, as per the re-

quirement. The questionnaire was translated into English by expert proof-readers. This suggests that professional language and translation experts were involved in this process. The experts validated the wording of these translated items. This step is crucial to ensure that the meaning and nuances of the original items are accurately conveyed in English and involves a thorough review to ensure accuracy and equivalence between the original and translated versions. This process aimed to maintain the integrity of the original items while adapting them to English. This process was undertaken to ensure equivalence, which helps ensure that the English version of the scale is equivalent to the original, which is crucial for cross-cultural validity. Expert translation helps preserve the content validity of the scale in all languages and reduces potential biases that could arise from mistranslation.

4. Results

The development and validation of the FCPO-S revealed significant insights into the construct's dimensionality, specifically focusing on two core dimensions: family firm interdependence and family firm identification.

Family firm interdependence has emerged as a critical dimension, encapsulating the collective strategic involvement, governance, and control that the family exerts over the business. This dimension reflects the family's unified approach to decision-making and their long-term vision for the business, emphasising the importance of managing emotional dynamics within the family firm. The scale items related to interdependence demonstrated strong reliability, with Cronbach's alpha values indicating high internal consistency. This dimension underscores the significance of the family's operational influence on the business, highlighting how the orientation towards the family firm fosters a sense of belonging and encourages care for all family members, even in challenging times.

Family firm identification, the second dimension, captures the emotional and cognitive embedding of a business within the family's collective self-concept. This dimension reflects the extent to which family members identify with and feel connected to the family business, incorporating the family's heritage, culture, and values. The scale items assessing family firm identification also showed high reliability, with Cronbach's alpha values above 0.9, validating this dimension's robustness in measuring the family's emotional investment in the business. Family firm identification highlights how the family firm's unique combination of traits, values, and achievements, closely tied to the family's legacy, can serve as a

competitive advantage and strengthen the family's culture and sense of belonging across generations.

Confirmatory factor analysis (CFA) supported the two-dimensional structure of the FCPO scale, indicating a good fit for the model with data from family businesses. This analysis confirmed that the three initially hypothesised dimensions could be more accurately represented by two, as items related to family firm identification and family firm interdependence demonstrated high positive correlations, suggesting that they were measuring interconnected aspects of the family's psychological ownership of the business. These dimensions, supported by rigorous psychometric testing, offer a nuanced understanding of the interplay between the family's operational influence and emotional investment in the business, providing a valuable tool for exploring the unique dynamics of family firms.

5. Discussion

Some studies have been conducted on the development and validation of instruments to assess CPO in organizational settings (Pierce et al., 2018). However, they omit the emotional, affective, social, and even economic dynamics that exist between the members of families that control family firms and are central to understanding the functioning of these organisations. The FCPO scale focuses on capturing these collective elements, thus emphasising the unique relationship between the family and the firm. However, while the FCPO construct has been recognised for its valuable contribution to the advancement of our understanding of psychological ownership in family firm research (Rantanen & Jussila, 2011), there is no scale to measure this concept yet.

In this study, we proposed and validated an FCPO scale for the first time. Our findings indicate that this construct has two dimensions: *family firm interdependence* and *family firm identification*. *Family firm interdependence* emphasizes the long-term perspective and vision that the family holds for the business, focusing on the strategic and future-oriented aspects of the family's involvement in the firm and their collaborative efforts on behalf of the family-owned firm. *Family firm identification* relates to the emotional connection and commitment of family members to the business, highlighting how they identify with the firm and see it as an extension of their family identity. More in depth, the perspective on *family firm identification* refers to the extent to which family members feel connected to and personally identify with the family business (Hall, 2012). Family firm identification is a unique combination of heritage, culture, and values, which

are often closely tied to the family's legacy and identity (Sánchez-Marín et al., 2016). Research suggests that the distinct traits, values, and achievements of a family business's identity set it apart from non-family businesses and can serve as a competitive advantage (Gómez-Mejía et al., 2011). Developing a strong family firm identification can help strengthen the family's culture and sense of belonging across generations, minimise the risk of ownership dilution, and capture business and financial success of the firm.

The review findings indicate that family members' belief in their ability to effectively participate in the management of the family firm is rooted in their interactions with the firm and shared experiences and interpretations based on an emotional and affective foundation (García et al., 2019). To be fully engaged in the challenges associated with family firms, family members must have a strong emotional attachment to the firm. Conversely, those who lack this emotional connection may find it difficult to become involved in the business (Björnberg & Nicholson, 2012). Our research suggests that in addition to sharing values, goals, resources, and rewards, family members should actively involve themselves in important decisions and encourage collective efforts (Habbershon & Astrachan, 1997; Johnson et al., 1998). The interdependence within a family firm is structured, which shapes the firm's dynamics. The concept of a unified "we" emerges when family members recognise each other as a group with a common purpose, which is linked to the ownership of the firm (Rantanen & Jussila, 2011). Furthermore, trust is a crucial element in fostering moral behaviour within the family, which lays the groundwork for cooperation, coordination, reciprocity, and exchanges (Bubolz, 2001). The collective and organizational identification of family firms can serve as a significant source of competitive advantage, as their unique "family identity" cannot be entirely replicated (Sundaramurthy & Kreiner, 2008, p. 408). Interdependence among family members arises when individuals support and facilitate each other's efforts to achieve group objectives, such as promoting and maximising the learning of other members (Collazos et al., 2003). Such collaborative efforts exemplify the commitment of family firms.

Commitment to the family firm is considered a valuable trait (Chrisman et al., 1998) that arises from close interaction with the company and a desire to be part of the team. Our research suggests that for collective identification and effort to develop, commitment must be practical (Meyer & Allen, 1991) and shared within the firm; that is, an emotional state of belonging to the family firm. Commitment to the family firm also has behavioural implications (Ellemers et al., 1998)

that progress from the intangible to the tangible. Therefore, commitment to a family firm refers to the dedication of family members to the performance of specific tasks or activities and, in general, to the achievement of shared goals. If the primary commitment is to the family rather than the business, there may be alternative ways to contribute beyond a leadership role in the family firm. Some family members who have chosen not to participate in the business remain part of the family but are not particularly engaged because they view the business as not being their own (Hewa Kuruppuge & Gregar, 2017); we consider this a positive attitude of family members toward work. Similarly, involvement in the family firm facilitates the identification of family members with the company's interests (Basly & Saunier, 2020b). The second aspect of the scale is derived from the integration of family and business interests and dedication to a vision of the future. The *family firm interdependence dimension* emphasizes the significance of comprehending and managing emotional dynamics in the context of family firms, as well as the importance of the family business preserving a sense of identity and attachment to the business (Bachkirov, 2015; Bee & Neubaum, 2014; Cailluet et al., 2018).

Studies have demonstrated that a long-term perspective in a family business can serve as a valuable resource for fostering an entrepreneurial approach within the firm (Astrachan et al., 2002). The efforts made by the family firm to implement mechanisms to reinforce the family firm's sense of belonging demonstrate the presence of the family in the firm and contribute to the stability and congruence of the family firm (Elsbach & Pieper, 2019). This understanding of values, behavioural norms, and cognitive schemes within the family improves the integration, cohesion, and survival of the family unit (Bourdieu, 2011) and fosters reciprocity and exchange among family members in relation to employees (Carrasco-Hernández & Sánchez-Marín, 2007).

Moreover, Family firm interdependence, promoting identification, adaptation, and emotional bonding between the family and the business, can contribute to the commitment of family members to the company and its continued success. It is essential for family businesses to recognise the influence of family emotions on family firm processes and to govern these emotions in the best interests of the business (Humphrey et al., 2021; Kellermanns et al., 2014). This involves upholding non-economic factors, such as the preservation of values and lineage legacy, which contribute to the preservation of socioemotional wealth and the maintenance of collective identification and family ownership (Berrone et al., 2012; Gómez-Mejía et al., 2011).

5.1. Differential factor of the FCPO-S

The FCPO-and CPO scales differ primarily in their contextual application and the specificity of their constructs. The FCPO-S is specifically designed to measure collective psychological ownership within family firms, capturing the unique dynamics and emotional bonds that family members share with their businesses. It focuses on the collective sentiment among family members that their business is an integral extension of the family unit, embodying a shared sense of belonging. This scale is tailored to capture the socio-emotional aspects of family firms, reflecting the intertwined identities of the family and firm. It was developed through theoretical and empirical item generation, judges' evaluation, and pilot testing, followed by exploratory and confirmatory factor analyses.

Unlike the proposals by Rantanen & Jussila (2011), who proposed three dimensions that focus on collective control (CC), intersubjective familiarization (IF), and interdependent effort (IE) to measure family influence within the firm and approach the concept of CPO in the family firm context FCPO. *Collective control* (CC) refers to the family's influence over the firm, particularly in terms of their ability to exercise control and manage the business collectively. *Intersubjective familiarization* (IF) captures the extent to which the family achieves a shared understanding and knowledge of the business, reflecting a collective cognitive dimension. *Interdependent effort* (IE) focuses on the extent to which the family views business values as their own and how these values reflect the family's identity, emphasizing collective action and values alignment within the family business.

The main differences between these sets of dimensions lie in their focus and their underlying concepts. The FCPO-Scale's dimensions are centered on the psychological and emotional aspects of family members' relationships with the firm, emphasizing *family firm interdependence* and *family firm identification*. In contrast, Rantanen and Jussila's dimensions focus more on the operational and cognitive aspects of family influence, such as control, shared knowledge, and value alignment within the family firm. While both approaches aim to capture elements of family influence and psychological ownership, they do so from slightly different perspectives, with the FCPO-S placing a stronger emphasis on the emotional and identity-related aspects of family involvement in the business.

In contrast, non-family firm-tailored CPO scales, such as those developed by Pierce et al. (2018), and Su and Ng (2019), are designed for a broader organizational context. These scales aim to capture the shared sense among co-workers that

they jointly own the organization, focusing on shared possessiveness toward the organization, involvement in decision-making, and enduring hardships together. The CPO scales are based on a bifactor analysis structure, including one general factor (shared possessiveness) and two specific factors (shared decision-making and shared hardship endurance), demonstrating satisfactory internal consistency and both convergent and divergent validity.

Therefore, while both scales measure collective psychological ownership, the FCPO-Scale is distinct in its focus on the family firm context, emphasizing the emotional and socio-affective nature of family involvement in the business. In contrast, CPO scales are more general, designed to measure collective ownership feelings among co-workers in various organizational settings, and are not specifically tailored to the unique dynamics of family firms.

6. Contribution and Practical Implications

The development and validation of the Family Collective Psychological Ownership Scale (FCPO-S) constitutes a significant contribution to business research, with several important practical implications. This analysis elucidates and expands on these contributions and implications.

The FCPO-S addresses a critical gap in the family business literature by providing an empirical instrument to measure collective psychological ownership specifically within family firms. As noted by [Henssen and Koironen \(2021\)](#) and [Rantanen and Jussila \(2011\)](#), there is a paucity of instruments tailored to capture the unique dynamics of ownership in family businesses. The FCPO-S fills this void, enabling researchers to quantify and analyze the shared sense of possession that family members experience towards their business. Unlike existing measures of collective psychological ownership (CPO) that are not specific to family firms, the FCPO-S is designed to capture the emotional, affective, social, and economic dynamics unique to family businesses. As highlighted by [Gómez-Mejía et al. \(2007\)](#), [Basly and Saunier \(2020a\)](#), and [Cano-Rubio et al. \(2021\)](#), these aspects are central to understanding family firm governance and decision-making processes. The FCPO-S improves upon traditional CPO scales by incorporating elements that reflect the intersection of familial and commercial domains.

The FCPO-S contributes to a more comprehensive understanding of the relationship between family identity and business dynamics in family-owned enterprises. By examining dimensions such as family firm identification and family firm interdependence, the scale elucidates the emotional connections among family members and their

collaborative, long-term visions for the business. This aligns with the research of [Zellweger et al. \(2010\)](#) and [Bettinelli et al. \(2022\)](#), who emphasized the significance of shared ownership and collective identification in family firms. By providing a valid measurement instrument for the FCPO, this study establishes new avenues for empirical research into the implications of collective ownership for management and succession planning in family firms. Researchers can now quantitatively investigate how FCPO influences various aspects of family business operations, building on the theoretical foundations established by [Pierce and Jussila \(2010\)](#) and [Rantanen and Jussila \(2011\)](#). FCPO-S can function as a diagnostic instrument for family business consultants and managers to evaluate the level of collective psychological ownership within a family firm. This information is potentially crucial for understanding the family's influence on business operations and decision-making processes. As posited by [Makó et al. \(2018\)](#) and [Murphy et al. \(2019\)](#), understanding FCPO can provide insights into how emotional and affective sensations towards the family business may influence its management.

One of the most significant challenges faced by family businesses is succession planning. The FCPO-S can facilitate this process by providing a measure of how deeply ingrained the sense of collective ownership is across generations. This information can be valuable for identifying potential successors who share the family's collective sense of ownership and are likely to maintain the family's vision for the business. This aligns with the work of [Björnberg and Nicholson \(2012\)](#), who emphasize the importance of emotional dynamics in family firm succession. By measuring the extent of collective psychological ownership, the FCPO-S can assist in identifying areas of misalignment or conflict within the family regarding their relationships with the business. This information can be used to develop targeted interventions to improve family cohesion and resolve conflicts, ultimately leading to improved business outcomes. This application draws on [Gómez-Mejía et al.'s \(2011\)](#) insights regarding the impact of socio-affective dynamics on family firm decision-making. The FCPO-S can inform strategic decision-making processes in family firms. A high level of collective psychological ownership may indicate a strong commitment to long-term goals and a willingness to make decisions that prioritize the family's legacy over short-term gains. This insight can be particularly valuable when considering major strategic moves such as expansion, acquisition, or diversification. The scale can be employed to design tailored professional development programs for family members involved in businesses. To understand the level and nature

of collective psychological ownership, training programs can be created to reinforce the positive aspects of FCPO while addressing any potential negative consequences, such as resistance to change or external input.

Insights derived from the FCPO-S can inform the development of governance structures that balance family influence and professional management. This can facilitate family firms in achieving an appropriate equilibrium between maintaining family control and incorporating external expertise, when necessary, as posited by [Basly and Saunier \(2020a\)](#) on family firm governance. Furthermore, understanding the level of FCPO within a family firm can aid in managing relationships with external stakeholders, such as investors, partners, and customers. A robust sense of collective ownership can be conveyed as a commitment to long-term stability and values, potentially enhancing a firm's reputation and stakeholder trust.

7. Limitations

The study's sample presents limitations primarily due to its non-probabilistic nature, meaning that the selection of participants did not rely on probability but was subject to the specific demands of the research. This approach can introduce biases, as it may not accurately represent the broader population of family businesses. Another limitation is the lack of cross-checking of data obtained by at least two or more members of each family firm. Moreover, the sample's composition, predominantly male (76%) and from a variety of industries, although diverse, might not fully capture the nuances across different sectors and gender representations within the family businesses. Additionally, reliance on self-reported measures from participants directly involved in management and administrative activities within their family firms raises concerns about response bias. Participants may have presented themselves or their firms in a more favourable light, potentially skewing the results.

Finally, another limitation of this study is the sample size. Despite our best efforts to widely disseminate the survey, the response rate was somewhat lower than anticipated, resulting in a sample size of 107 participants. This poses a challenge in achieving a fully representative dataset; therefore, we have taken appropriate measures to ensure that our sample is representative based on size, sector, and family generation involved. These limitations should be considered when interpreting the results, as they may affect the overall robustness and applicability of our conclusions of this study.

8. Future research

Future research in the realm of FCPO presents a rich landscape of opportunities for deeper exploration and understanding.

First, the FCPO scale can be used in longitudinal studies, which could offer valuable insights into the evolution of FCPO-S over time, elucidating its impact on family firm governance, succession planning, and intergenerational transfer. By expanding the scope to diverse cultural contexts, researchers can elucidate how cultural norms and values influence the development and expression of psychological ownership in family business success. Furthermore, to gain a more comprehensive understanding of FCPO, future studies should employ a mixed-methods approach, combining qualitative and quantitative techniques such as case studies, interviews, and surveys. This multifaceted approach captures the depth and breadth of shared psychological ownership experiences among family members. Additionally, adopting a multilevel analysis could provide deeper insights into how collective psychological ownership manifests and operates across different levels within family firms, including the individual, family, and organisational dimensions.

Second, further research is imperative to elucidate the theoretical and practical implications of FCPO on various aspects of firm performance, such as innovation, growth, and financial health. Such investigations would facilitate the establishment of clearer causal relationships and enhance our understanding of the mechanisms governing family emotions in family firms ([Koh et al., 2019](#)). Exploring practices that foster the positive outcomes of FCPO while mitigating potential negative consequences could yield valuable insights for practitioners and scholars alike ([Corona, 2021](#)). This article aims to contextualise the vast quantity of evidence and experience and enable a better understanding of the challenges, the role of the new generation, the probate process, the preparation of the successor, and the importance of family harmony in family business successions. This study underscores the significance of cultivating the next generation of leaders and the necessity of judiciously determining the appropriate timing for initiating the succession process. It further emphasizes that the preparation of successors is an evolutionary endeavor and that maintaining family harmony is crucial for success in this process. The objective of this article is to contextualize the extensive body of evidence and experience, thereby facilitating a deeper understanding of the challenges, the role of the new generation, the succession process, the preparation of successors, and the importance of family harmony within family

business successions. The article elucidates the criticality of developing new generational leaders and the need for careful consideration of the timing of the succession process. Additionally, it highlights that the preparation of successors is an evolutionary process and that family harmony is essential for achieving success in this endeavor (Corona, 2021). Integrating FCPO into existing theoretical frameworks, such as socioemotional wealth or stewardship theory, could offer a more nuanced understanding of the complex dynamics of family firms. Furthermore, given the ongoing digital transformation of businesses, examining how technological advancements affect FCPO can provide valuable insights into the evolving nature of collective ownership and its implications for family business management in the digital era. An important avenue for future research is to investigate the influence of non-family members on the emergence and implications of FCPO. This approach would involve adapting existing FCPO items or developing new items to reflect the perspectives of non-family employees. Such studies could explore how non-family employees' sense of belonging interacts with the family's collective ownership feelings and investigate the potential differences in psychological ownership between family members and long-term, trusted non-family employees. By pursuing these diverse research directions, scholars can develop a more comprehensive understanding of psychological ownership in family firms, which encompasses both family members and key non-family employees. This holistic approach has the potential to offer valuable insights into how family firms can leverage their unique cultural attributes to create robust, cohesive organisations that extend beyond family boundaries, ultimately contributing to the advancement of theory and practice in the field of family business research. Finally, future research could measure the concept of extended family in relation to family members employed within the firm, such as sons-in-law and daughters-in-law, and family members who are not employed in the firm but play a crucial role in the family business.

Author contribution statement

All authors contributed equally to the conception, design, data collection, analysis, and writing of this manuscript. All authors have read and approved the final version of the manuscript.

Conflict of interest statement

The authors declare no conflicts of interest.

Ethical statement

The authors confirm that data collection for the research was conducted anonymously, and there was no possibility of identifying the participants.

Declaration on the use of generative AI in the writing process

Generative AI has been used solely for editing in the writing process. No AI-generated content was included in the conceptualization, analysis, or original drafting of this manuscript.

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Data availability statement

The data supporting the findings of this study are available from the corresponding author upon reasonable requests.

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Annex 1. Previous Scales Development

CPO scale by Pierce et al. (2018)

Instructions: Think about the house, automobile, workspace, or some other item that you own or co-own with someone, and the experiences and

feelings associated with the statement 'THIS IS OURS!' The following questions deal with the 'sense of ownership' that you and your work team members feel for the work that you do. Please indicate the degree to which you personally agree or disagree with the following statements.

1= Strongly disagree, 2= Disagree, 3= Moderately disagree, 4= Neither agree nor disagree, 5= Moderately agree, 6=, Agree 7= Strongly agree

1. We (my team members and I) collectively agree that this is OUR job.
2. We (my team members and I) collectively feel that this job belongs to US together.
3. We (my team members and I) feel a very high degree of collective (team) ownership for this job.
4. All the members of my work team feel as though we own this job collectively.

CPO scale by Su and Ng (2019)

1. I feel like we are co-owners of the organization.
2. My colleagues feel like they are co-owners of the organization.
3. The organization encourages staff members to develop a collective sense of ownership.
4. I will choose to stay with the organization even in tough times.
5. My colleagues will choose to stay with the organization even in tough times.
6. The organization is keen to keep staff even in tough times

Annex 2. FCPO-S

Instructions: The following questions are about the emotional and affective sensations (sense of psychological ownership) that you and your family members feel towards the family business. Please respond to the following statements by marking the corresponding box with what you consider to be most in line with your opinion,

bearing in mind that: 7 = Very much agree, 4 = Neither agree nor disagree, 1 = Very much disagree.

Many questions are formulated using the word 'We'; this term refers to the collective of all family members, including you. Please remember that there are no right or wrong answers to the information presented; we only seek to know your opinion, so we ask that you respond with complete honesty.

Items	Response						
	11	22	33	44	55	66	77
We feel that the family firm in which we work is ours.							
We take pride and satisfaction in working in this family business.							
Our personal and professional growth is linked to the growth of the family business.							
We consider that the problems of the family firm are also our problems.							
Our personal values are represented or complementary to the values of the family business.							
The work we do demonstrates our commitment to family business.							
We identify with the family business							
In general, we feel motivated as a group to continue working for the family business.							
In general, we believe that the family firm interdependence enables and will enable the needs of all members of the family firm to be met.							
In general, we believe that the family firm interdependence fosters a collective feeling of ownership of the company. That is, we feel that we own the company.							
In general, we believe that the business orientation of the family firm encourages the development of feelings of affection for Family firm (love, pride, affection...).							
The interdependence of the family firm encourages care for all of us even in difficult times.							