Conflict Management Strategies and the Digitalization of Family Firms: The Moderating Role of Generational Ownership Dispersion

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Abstract—**Family business research indicates that digital transformation may lead to substantial conflicts. However, little is known about how conflict management strategies address such conflicts. We thus mobilize conflict theory and empirically examine the impact of these strategies on the level of family business digitalization and whether such strategies are contingent on the number of ownership generations involved. To do so, we draw on a combination of a survey of 85 German family firms and in-depth interviews with 13 family business actors. Our quantitative results indicate that selected strategies can help reach higher levels of digitalization, but their effects are contingent on generational ownership dispersion. Additionally, our qualitative insights suggest that, in case of multiple active ownership generations, senior family generations feel less responsible for digitalization and pass it on to the younger generation. However, where ownership is concentrated in one generation, collaboration strategies seem crucial to prevent digitalization-related conflicts.**

Index Terms—**Conflict management, conflict theory, digital transformation, digitalization, family firm, generational ownership dispersion.**

I. INTRODUCTION

FOR many contemporary family businesses, a digital business strategy can be critical in the current business environment and may improve their professionalization. Successfully digitalizing the family business can have positive effects on family firms' performance and increase the likelihood of their long-term survival [1], [2], [3], [4]. In general terms, digitalization describes the "manifold sociotechnical phenomena and processes of adopting and using digital technologies in broader individual, organizational, and societal contexts" ([5], p. 301). This definition applies to hardware- and software-related innovation [6]. Over recent decades, digitalization has become an indispensable part of everyday business life. Artificial intelligence, Big Data, blockchain, cloud computing, robotic process automation, three-dimensional printing, 5G technology, the Internet of Things, and many more opportunities are subsegments of the ongoing digital transformation [7], [8], [9], [10]. These innovations could also enhance the company's overall performance [11]. At the same time, the overarching digital transformation of individual businesses can be categorized into three incremental stages, namely process digitalization, product/service digitalization, and business model digitalization [12].

While existing evidence suggests that most family firms are still in the first stage of process digitalization [12], software-based technologies have become increasingly affordable [13]. Thus, even small companies, many of which are family businesses, have become increasingly professional through digitalization [14]. Still, family firms tend to show idiosyncrasies regarding their digital transformation [14], [15]. Family firms are businesses where family members are usually involved in the firm's ownership, governance, and management [16], [17]. Therefore, most decisions rendered in family firms are influenced by family considerations, traditions, and values [18]. In line with this notion, former research has highlighted that such family considerations considerably impact business transformation processes, including innovation processes [19], [20], [21], [22]. Similarly, it has been found that the implementation of digital technologies or a digital business model transformation is considerably shaped by family interests [23], [24], [25]. While such digital transformation can be expected to bring about new opportunities for family firms, it may also entail substantial risks for family firms (e.g., [2], [12], [14], [15], [22], [26], [27], [28], [29]). For instance, Soluk and Kammerlander [12] found that family firms undergoing a digital transformation often face challenges due to conflicts arising due to the digital transformation [30], [31]. Relatedly, Weyrauch et al. [32] highlighted the critical but often overlooked role of conflict and conflict resolution in realizing important innovation endeavors in an organizational context, such as digital transformation.

Due to the close ties among family members, conflict theory is a widely recognized theoretical lens in family business research (e.g., [33], [34], [35], [36], [37], [38], [39]), which we also adopt in this article. The relationships between family members (e.g.,

parents, children, or distant relatives) are often complicated [40]. The roots for conflicts lie in the unique and complex interplay of family members' roles. These roles may include membership in the private owner family, being an employee or manager in the family business and holding ownership rights in the business [41], [42]. Such complex role sets imply that family members are usually concerned about both family and business outcomes (e.g., [43], [44]). At the same time, these multiple interests may interfere with each other and lead to conflicts, especially when several family generations are involved in the business [45]. Conflict theory thus suggests that the potential for conflicts in family firms often stems from norms, personal influence on decision-making, different treatment of family members, sibling rivalry, unequal distribution of power, and differing views, values and goals among the family generations involved in the business [43], [46], [47]. Family firms can substantially suffer from such internal conflict, especially during transformation processes (e.g., [48], [49]), as they may overshadow business concerns [50], [51], [52], [53], and lead to lower operational performance, reduced profitability, and even the risk of business failure. However, conflict theory also suggests that a moderate level of conflict in family firms, where there are disagreements or tensions between parties but the conflict has not escalated, can be beneficial to achieving both business and family outcomes [54].

Equipped with these earlier insights into family business conflicts, in this article, we examine whether conflict management strategies can help overcome the conflicts related to digitalization within family firms, especially in those with multiple ownership generations. This article considers three established conflict management strategies by Sorenson [44] (avoidance, collaboration, and compromise) that we apply to the new field of family businesses' digital transformation. While avoidance aims to leave conflicts unresolved, either temporarily or permanently; compromise refers to finding a solution that may not fully satisfy everyone involved; collaboration involves all parties in the decision-making process to reach a mutually beneficial solution. In addition, following Alvarado-Alvarez et al. [55], we integrate generational ownership dispersion as a potential moderating factor in the relationship between conflict management strategies and digitalization. Generational ownership dispersion occurs when the ownership rights in the family business are dispersed among several family generations [56], [57]. Family business research has shown that firms with only one ownership generation have less potential for harmful conflicts. This low conflict potential is theorized to stem from the scope of personal contact, which prevents the emergence of relationship conflicts [37], [40]. In contrast, conflicts may be more likely to arise in family firms with two or more ownership generations, especially regarding the digital transformation. This is because the younger, tech-savvy generation, who often have experience and knowledge acquired outside the family firm, may have differing abilities and willingness to push for the adaptation of new technologies to align the business for the future [6], [46]. Meanwhile, the older generation may be more defensive and stick to the status quo, preferring to continue doing business as usual and resisting change (e.g., [30], [58]). Therefore, the digitalization of

family businesses may lead to conflicts between generations, and conflict management strategies could be particularly valuable. To summarize, we, therefore, address the following research question:

How do different conflict management strategies influence the digitalization of family firms and to what extent is this relationship moderated by generational ownership dispersion?

To address this research question, we rely on a mixed-methods approach. First, we include survey data from 85 German family firms with a maximum of 3000 employees. We find support for the notion that the effect of conflict management strategies on digitalization is contingent on generational ownership dispersion. To further analyze these quantitative results, we conducted thirteen in-depth interviews with family firm actors, six with family firms that had already participated in the quantitative studies, and seven with additional family firms.

Our findings contribute to the literature in three primary ways. First, we contribute to the literature on conflict theory applied to family firms (e.g., [36], [51], [54]). This article is among the first to deliver empirical evidence focusing on conflicts about the digitalization of family firms. Our survey reveals that many family firms experience process conflicts during the digitalization process. Second, we add to the literature by demonstrating that conflict management strategies, particularly compromise, and collaboration, may help alleviate such conflicts and support family business digitalization. At the same time, third, our findings show that the effectiveness collaboration is contingent on the number of family generations holding ownership rights (i.e., generational ownership dispersion). Moreover, this finding adds to the literature by highlighting the large heterogeneity among family firms and the importance of tailoring conflict management strategies to the specific context. That is, some conflict management strategies seem more effective than others during family business digitalization (e.g., [59], [60]).

The rest of the article is organized as follows. Section II positions this article in the existing literature and develops the hypotheses. Section III describes our mixed-methods research setup. Section IV presents the results of our analysis. Finally, Section V concludes this article.

II. LITERATURE REVIEW AND HYPOTHESES

A. Digitalization and Family Firms

Digitalization has become a ubiquitous part of everyday private and business life; indeed, it can be expected to become an even more ubiquitous part in the future, further changing how companies and employees work [61]. Although research on the digital transformation of family firms is still in its infancy [14], [15], [26], empirical studies have found that it can be divided into three incremental steps [12]: process digitalization, product/service digitalization, and business model digitalization. As the first step of digital transformation, process digitalization describes the adaption of family firms' IT standards to the requirements of their business partners along the supply chain. Therefore, process digitalization is concerned with existing social ties and the ability to meet the requirements of suppliers

and customers. Such process digitalization is, for instance, reflected in implementing or modifying firms' enterprise resource planning systems. By contrast, product and service digitalization describes family firms' capacity and resources to create technological opportunities (e.g., digital products and services). Business model digitalization represents the last step of digital transformation through continuous renewal. In this regard, Plomp et al. [62] assumed that companies, regardless of their form, are still relatively at the beginning of their digitalization efforts and limit this mainly to processes.

In the short run, these steps are expected to help ensure family firms' business professionalization; in the long run, digitalization is crucial for survival [1]. These steps suggested by Soluk and Kammerlander [12] indicate that digitalization is more than a technical process; it can be a game-changer for business models and, therefore, a new way for how family firms can operate. The more flexible, less formalized, very entrepreneurial, and superior decision-making characteristics of family firms can give them an advantage over nonfamily firms [63], allowing them to digitalize their businesses quickly [2], [14]. However, only a minority of family firms have reached the last stage of digitalization, namely, the digitalization of their business model [12]. Family businesses must therefore always manage to find a middle way between incremental innovation (exploitation), i.e., the optimization of existing technologies, and such new and more radical innovations (exploration), e.g., digital transformation [64]. The crucial question is how family firms are affected by digital transformation and the advantages and challenges they face.

In line with this notion, previous article has shown that although family firms are outstanding at facing incremental innovations, they may be less equipped for radical technological innovations, such as digitalization and digital transformation (e.g., [65]). Indeed, family firms seem to be more risk-averse to exploratory technological innovations [66], [67], [68]. Moreover, former research indicates that family businesses and their decision-makers do not always follow strict economic goals in their decision-making, but also pursue noneconomic goals [69], [70], even if a strategic decision does not have obvious economic benefits [71], [72], [73]. This phenomenon can be traced back to considerations around socioemotional wealth (SEW), which is defined as the "affective endowment of family owners" (70, p. 654), and describes the way in which family owners are driven by various sets of motives. These motives could be influenced, for example, by family bonds, identification of the family members with the firm, and emotional attachment [71], [72].

SEW considerations can also be a cause for conflicts in family firms, particularly when it comes to decision-making and governance. Family members may prioritize their emotional attachment to the firm over strategic priorities and investments [71]. The resulting divergence in family members' views about the usefulness and risks of digitalization may cause conflicts. Hence, family members may be hesitant to adopt explorative innovations, such as new digital technologies, because they are perceived as a threat to the family's traditions, values, and identity [74]. Digitalization may also require a significant investment of time and resources, which can create conflicts between preserving SEW and pursuing financial growth.

B. Conflict Theory and Conflict Types in Family Firms

This article focuses on process digitalization since most family firms have not completed the first steps in implementing a focused digitalization roadmap [14], [75]. As indicated above, for most family firms, process digitalization may be the first and primary challenge when it comes to digitalization [12]. However, even such process digitalization can lead to and enhance the conflict potential in family firms. Conflict theory is a framework that is particularly relevant for understanding conflicts in family business. Conflicts in family firms may normally arise in combination with decision-making [35], since most decisions are influenced by differences in individual goals, interests, and values [25]. In general, the conflict potential in family firms is due to the close ties and relationships among family members, leading to a complex interplay among family business, family ownership, and family business ownership [33], [34], [35], [36], [41], [47], [76]. This is reflected in the various and often overlapping roles in family businesses [40] as indicated above. Family firms usually take longer than nonfamily firms to adopt technological innovations because the older generations in charge are more resistant to new technological innovations than younger family generations and thus try to avoid or delay technological change [77]. This can be caused by a lack of technical knowledge and a desire to maintain the status quo and may challenge the strategic alignment of the family firm's digitalization effort [68]. Therefore, different types of conflicts can occur [67].

In this article, we mobilize conflict theory to view digitalization as an essential cause for conflicts currently effecting many family firms worldwide. Conflict theory suggests that conflicts can start on a small scale as disagreements, but if not addressed, can develop into serious disputes over time [40]. This can manifest itself in competing goals, personal hostility, disrespect, aggressive behavior, loss of constructiveness, and hatred. However, following conflict theory, a moderate extent of conflicts in family firms is beneficial to achieve both family and business outcomes (e.g., [36], [54]). This is because moderate conflicts in family businesses allow space for new ideas to be exchanged, which do not need to be addressed if the potential for conflict is low or cannot be addressed if the potential for conflict is high or paralyzes. Moderate conflicts therefore do not paralyze work but move it forward. Hence, when a conflict is well managed, for instance, with the help of conflict management strategies, differing perspectives can lead to better solutions than when there are concurring, nonconflicting perspectives [40].

Conflict theory states that conflicts can be separated into cognitive, process, and relationship types. Cognitive conflicts focus on strategies, goals, and open discussion, whereas mental disputes focus on the capabilities and talents of family members. Past research has found that cognitive and process conflicts positively relate to problem-solving, creativity, and family firm performance [36], [78], [79]. In contrast, relationship conflicts (i.e., tension and anger between group members) are negatively

related to family decision-making and harm the achievement of performance goals [37], [54], [80]. Given this background and our above definition of digitalization, we view digitalization and digital transformation as drivers of potential cognitive and process conflicts.

C. Conflict Management Strategies and the Digitalization of Family Firms

As Omrani et al. [7] suggested, a business's internal environment is an essential predictor of digital adoption. For family firms, conflicts among family business owners and associated conflict management strategies are an integral part of the internal environment. Without such strategies, conflicts can loom over everything and possibly reach high and uncontrollable levels. Conflicts in family firms can have their roots within the controlling family, the family members who are owners, and the family business. However, regardless of the origin of these conflicts, these conflicts can significantly impair operational and strategic decision-making and, in the worst case, even curtail a family firm's ability to act and succeed.

Family firms are thus regularly advised to apply conflict management strategies to reduce the destructive conflict potential to a moderate level [35]. One possible solution for solving conflicts is the so-called dual-concern model, which categorizes concern into two dimensions that go along with the five underlying conflict management strategies: concern for others and concern for self. Each dimension has two expressions for its application, namely, low and high. Collaboration, compromise, and avoidance are the three possible solutions to an integrative approach along these dimensions and their expressions. This means these three conflict management strategies lie on the opposite extremes of these two dimensions and describe the extent to which each individual is involved in finding the family firm's best solution. Family firms can apply these strategies to address extended family members' problem-solving and find appropriate answers (e.g., [44], [81], [82]). We next discuss these three conflict management strategies in more detail and develop hypotheses on how they are expected to affect the digitalization of family firms. We rely on the three integrative conflict management strategies described below.

Avoidance is one strategy in the contingency either/or approach [41], [83]. This approach includes settings within which family members can choose between self-interest and accommodating others' interests. Furthermore, it is characterized by failing to achieve the desired business and family outcomes. Through the absence of direct communication about existing conflicts, avoidance manifests in a lack of reaction to conflicts [84]. Therefore, frustration, negative feelings, and increased relationship tensions can occur. Such a denial of conflicts [44] and the withdrawal of family members from the family and/or business (e.g., through retirement, childbirth, and divorce) can be possible reasons for using this conflict management strategy [85], [86]. Hence, an avoidance strategy may be a practical solution for low-intensity conflicts and those between family and nonfamily members. Still, it may be unsuitable for disputes between family members. In the case of high-intensity

conflicts, this strategy can lead to unsolved issues, limited productivity, and rising rivalry within the family. Therefore, avoidance can result in a more destructive conflict potential and reduced organizational performance [87], [88]. In this context, avoidance leads to unsolved questions and problems related to digitalization.

A lack of consensus or discussion is likely to leave important questions regarding digitalization open. The result could be a failure to develop and implement a comprehensive digitalization strategy that could contribute to raising the family firms' digitalization level [62]. If questions regarding digitalization still trigger tensions and conflicts despite an avoidance strategy, such conflicts may only be approached very cautiously, and attempts will be made to avoid the conflict and related disputes. As a result, family firms resorting to such avoidance strategies can be expected to not address important digitalization steps and are likely to experience a lower level of digitalization. Hence:

Hypothesis 1a (H1a). The level of avoidance is negatively related to the extent of family business digitalization.

Compromise belongs to the both/and approach [41], [83]. It means accepting the persistence and interdependency of contradictory forces in family firms (e.g., the conflicts between family generations and between family and nonfamily members). This strategy is characterized by finding a middle course to broker an acceptable solution to achieve both business and family outcomes [89]. Finding a compromise between business and family outcomes can lead to solutions that focus on "keeping the peace" within the family and family firm. Although no one feels completely satisfied with the found solution, no one feels completely dissatisfied either. This conflict management strategy is thus depicted by a mentality of "giving in" to prevent harmful feelings and tensions from arising in relationships. Due to a more participatory decision-making, a compromise strategy may help minimize or reduce conflicts to a moderate level [84], [90]. If applied successfully, the family firm can achieve the desired business and family goals, but not to the highest possible extent due to the latent conflicts between those goals [91]. Therefore, this strategy can support the outcomes of the family firm since a moderate level of process, cognitive conflicts, and a lower level of relationship conflicts raise firm performance [54], [80], [92]. By including several important family business actors, the digitalization of family firms may also have a broader and thus firmer foundation, which is assumed to be beneficial to digitalization processes [62]. Overall, we can thus expect a compromising conflict management strategy to be beneficial to the extent of family firm digitalization. Hence:

Hypothesis 1b (H1b). The level of compromise is positively related to the extent of family business digitalization.

Collaboration is also part of the both/and approach [41], [83] and is characterized by achieving the desired business and family outcomes through highly participative decision-making. Collaboration reveals itself through open communication about potential conflicts. This results in mutual support, mutual trust, high effort, creativity, and, therefore, cohesive and positive relationships [93]. Achieving this jointly agreed, acceptable

solution for each party involved in the overarching goal means no sacrifices need to be made [85]. Applied to the digitalization of family businesses, this may imply that a joint digitalization strategy could be developed, which is theorized to be an important driver of actual digitalization [62]. In addition, this conflict management strategy is also characterized by organizational learning and continuous improvement. Thus, the likelihood of reaching business goals, such as digitalization, can increase [44], [52], [94].

Nevertheless, this strategy is impractical for solving short-term conflicts and decision-making. Furthermore, it might be unsuitable for family firms with a low level of trust. Similar to compromise, while a collaboration strategy may help to reduce or eliminate task and relationship conflicts due to participatory decision-making [84], [90], negative family or business outcomes remain possible, meaning a certain level of conflicts can still arise. Given the abovementioned benefits of a compromise strategy, on balance, the family business conflicts literature suggests that collaboration strategies are often helpful in solving family business challenges, such as digitalization [41]. Hence:

Hypothesis 1c (H1c). The level of collaboration is positively related to the extent of family business digitalization.

D. Moderating Role of Generational Ownership Dispersion

In addition, we assume that generational ownership dispersion moderates the relationships proposed in H1a, H1b, and H1c. At a conceptual level, generational ownership dispersion occurs when at least two family generations hold ownership stakes in the family firm (e.g., [57]). It heavily influences the decision-making processes in family firms due to the rivalry and conflicts within and between multiple generations [47], [56]. Therefore, various generations take part in the decision-making process and the likelihood of potential conflicts increases, which could derive from a lower output, such as reduced firm performance [36]. In line with this notion, Davis and Haverston [40] were able to establish that conflicts in family firms are generally related to the number of generations. These authors also emphasized that the so-called generational shadow favors conflicts. This effect can be characterized by the changing dynamics among family members when each new generation enters the firm, resulting in complex interactions. Davis and Haverston [40] therefore suggest that in order to reduce the potential for conflict, the influence of the older generation should be reduced, or appropriate tools should be used to reach consensual decisions.

These dynamics seem to be particularly pertinent when a new generation becomes part of the ownership structure. The degree of ownership involvement varies by family firm. The decisions made in the firm could be driven by altruism and a strong incentive to maximize the family's and the firm's welfare [90]. In family firms with one ownership generation, the generation in charge might be more open to external advice from, for example, family members without an ownership stake and nonfamily managers, especially when there could be a substantial impact on the strategic future of the firm and, thus, later generations. Therefore, in strategic decision-making, the older generation may be open to the insights and knowledge of the younger generation, even if

they are not in partial charge. The opinions of later generations could help avoid potential conflict before the earlier generation cedes control [41]. Hence, conflict could be maintained low, and conflict management strategies could better impact ownership behaviors. High generational ownership dispersion (i.e., two or more family generations with an ownership stake) is associated with agency problems and an increased risk of different types of conflicts [41], [94], [95], primarily across generations owing to their different points of view [72], [96]. In these situations, each family generation and their members may want to force their decisions on the others [97]. These conflicts may lead to short-term decision-making, increasing the likelihood of formulating harmful strategies and hampering business outcomes and technological innovations [57], [90], [97], [98].

In such an environment, the younger generation can be expected to foster digital transformation because they are usually more tech-savvy. In contrast, older generations can sometimes be defensive, stick to the status quo, and show a high unwillingness and resistance to (digital) change [2], [12], [99]. Norms, personal influence on decision-making, the different treatment of family members, interpersonal conflicts, sibling rivalry, a lack of trust and commitment between family and non-family managers, and different views on the strategic direction of the family firm can overshadow business concerns and diminish more radical innovations as well as its success [43], [50], [51], [52], [53]. Thus, in line with conflict theory, family firms with two or more ownership generations usually show a higher potential for conflicts, leading to self-interest, reducing performance [36], [43], and hampering innovation [100]. Large parts of the literature suggest family business conflicts between older and younger family owner generations (e.g., [85]). By contrast, in family firms with only one ownership generation, conflicts are often less harmful and can even improve the firm's outcomes.

Consequently, we can expect that conflict management strategies, such as avoidance, compromise, and collaboration, are especially relevant and helpful in family firms where two or more family generations hold ownership rights. Hence, we expect the relationship between conflict management strategies and digitalization to be more pronounced for firms with two or more family ownership generations than those with only one family ownership generation, as in the latter firms, the conflict levels around digitalization can be expected to be lower anyway (e.g., [58]). Based on the above considerations, we hypothesize:

Hypothesis 2a (H2a). The relationship described in H1a (avoidance) is more pronounced if two or more family generations are involved in the ownership.

Hypothesis 2b (H2b). The relationship described in H1b (compromise) is more pronounced if two or more family generations are involved in the ownership.

Hypothesis 2c (H2c). The relationship described in H1c (collaborate) is more pronounced if two or more family generations are involved in the ownership.

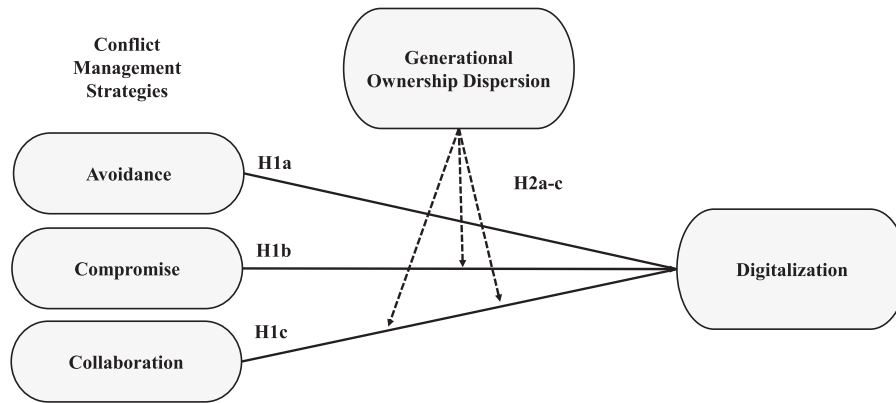A visual summary of our hypotheses can be found in Fig. 1.

Fig. 1.   Research model.

III. METHODS

A. Sampling and Data

To address our central research question, we employ a mixed-methods research design, consisting of a survey and in-depth interviews with family business actors to get a closer understanding of the dynamics of conflicts, conflict management strategies, and digitalization processes in family firms. Our survey targeted German Mittelstand firms as family firms are widespread in the German Mittelstand. The typical German family firm is often viewed as being part of the Mittelstand and, therefore, not very large and not publicly listed [101], [102]. At the same time, family firms in the German Mittelstand especially face challenges when it comes to digital transformation [2], [103], [104]. Following De Massis et al. [105] and Becker et al. [106], our target population of Mittelstand firms contains only firms with 3000 employees or less. We obtained the survey addresses from the Amadeus database. Listed firms and firms from the financial services industry were excluded due to their unique characteristics when it comes to digitalization [107], [108].

In the survey, we targeted the top management team, specifically CEOs, since it can be assumed that they are the most knowledgeable respondents about their business [109]. CEOs often hold a unique position in family businesses as they are usually responsible for maintaining close ties with the controlling family while simultaneously driving business performance. Therefore, CEOs have an excellent and comprehensive overview of their firms' activities and the nature of the collaboration in the top management team [109]. In family firms, we can distinguish between CEOs belonging to the controlling family (i.e., family CEOs) and CEOs not belonging to the family (i.e., nonfamily CEOs). However, regardless of family status, CEOs usually have close ties with the controlling family and an excellent understanding of what is driving them as well as potential conflicts [110]. We thus deem both family and nonfamily CEOs to be well-suited informants for the survey part of this article. Research has also shown that a company's executives have a decisive influence on digitalization [111] and are thus deemed an excellent group of respondents for issues around digital transformation, including conflicts.

To increase the likelihood of response, we manually identified the personal e-mail addresses of top managers, especially CEOs of Mittelstand firms that are located near our university. We particularly identified firms situated close to our university since past research has shown that geographic proximity between survey authors and potential respondents results in higher response rates [112]. This process resulted in a target population of 1118 firms. We sent out an initial mailing in early July 2020 and later sent multiple follow-up reminders through the middle of August 2020, as recommended by Dillman et al. [113]. In all our mailings, we indicated the university sponsorship of our survey to obtain full transparency (cf. [114]). Furthermore, we offered our survey addressees two incentives upon completing the survey [115]. Survey respondents could choose between receiving none, one, or both incentives: 1) an executive research report; and 2) a donation of EUR 10 to a charity of their choice.

We received 156 complete or partially complete questionnaires, resulting in an overall response rate of 13.95%. This response rate is comparable to similar recent survey studies drawing primarily on small- and medium-sized firms (e.g., [116], [117], [118]). This initial set of responses included family and nonfamily firms since there was no viable option to identify family firms upfront. Therefore, we needed to determine the family firms among our responses. To do so, we relied on the self-assessment approach, which is a usual way to define family firms in family business research (e.g., [17], [90], [95]). Specifically, we asked the respondents whether they considered their firm a family firm or not, and excluded those firms that did not view their firm as a family firm. The final sample contained only those firms that identified themselves as family firms. Hence, 71 of the 156 respondents had to be removed due to their missing family firm status and/or incomplete answers on the variables of interest considered in this article. We only used the 85 family business cases with complete information on the measures relevant to this article. Although this number of observations is low (and lower than we desired), it is in line with comparable survey-based family firm studies published recently owing to a complex and sensitive subject area (e.g., [119]). Furthermore, family firm studies often suffer from low sample sizes and response rates, as such firms tend to be reserved, especially

TABLE I
COMPARISON OF GENERAL PROCESS CONFLICTS AND SPECIFIC PROCESS CONFLICTS ABOUT DIGITALIZATION

Variable	Mean	Min	Max	Median	SD	Low (%)	Medium (%)	High (%)
General process conflicts	1.79	1.00	5.67	1.33	1.01	81.20	17.60	1.20
Specific process conflicts about digitalization	2.07	1.00	5.00	1.75	1.09	69.40	30.60	0.00

Note. Min. = minimum; Max. = maximum; SD = standard deviation.

TABLE II
COMPARISON OF THE VARIABLES FOR LATE AND EARLY RESPONDENTS

Variable	Early respondents	Late respondents	p-value
	Mean	Mean	
Digitalization	2.28	2.12	0.222
Avoidance	3.59	3.55	1.000
Compromise	4.25	4.61	0.509
Collaboration	5.15	5.47	0.420
Generational ownership dispersion	0.59	0.73	0.340
Firm size > 499	0.50	0.45	0.763
Manufacturing	0.68	0.77	0.498
Strategy	0.36	0.45	0.540
Past performance	4.70	4.65	0.851

when sensitive data are involved to keep the secrets of the family private [120], [121]. In addition, considering that the response rate in family business research has generally decreased over recent decades (e.g., [122], [123]), especially those targeting top executives [124], our achieved number of observations seems sufficient for conducting our statistical analyses (cf. [125]).

Note that this article started with the assumption that family firms, indeed, would experience conflicts around digitalization and that conflict management strategies may help alleviate such conflicts. To ascertain that such conflicts indeed are present in our sampled firms, we first examined two types of family firm conflicts: general process conflicts and specific process conflicts about digitalization. The process conflict variable was measured using the multi-item scale presented by Kellermanns and Eddleston [84]. The direct comparison of these two types of conflicts in Table I shows that, in particular, process conflicts about digitalization are more pronounced among our sampled firms than general process conflicts. These descriptive findings underpin that conflicts around digitalization are very present in many contemporary family firms, including those in our sample. Note, however, that the two conflict variables presented in Table I are not further used in our below analyses due to the cross-sectional nature of our sample. These descriptive findings nevertheless show that conflicts around digitalization are a relevant phenomenon that is present in many family firms we surveyed.

1) Nonresponse Bias: Nonresponse bias occurs when the percentage of nonrespondents is high, and thus the usable sample is biased [126], [127]. To analyze the likelihood of nonresponse bias in this article, we used the common approach of testing for differences between early and late respondents. Since late respondents are considered more similar to nonrespondents than

early respondents, we used late respondents as a proxy for nonrespondents (e.g., [128], [129]). Table II shows the mean values of all the variables included in this article and compares the subsamples between early respondents (25th quantile) and late respondents (75th quantile) [130]. We first used a Kolmogorov–Smirnov test and a Shapiro–Wilk test to analyze whether the constructs in this article follow a normal distribution. We found that none of the variables, except past performance, were normally distributed. Hence, we used a *t*-test for past performance. For all the other variables except generational ownership dispersion, industry, firm size, and strategy, we used the nonparametric Mann–Whitney U-test. For the dichotomous variables, we used the nonparametric chi-square test. We found no significant difference between early and late respondents, suggesting our sample did not suffer from nonresponse bias.

2) Common Method Bias: We obtained the independent and dependent variables from the same source; therefore, this article design could suffer from potential common method bias. To mitigate common method bias, we took several procedures. First, we separated the measurements of the independent and dependent variables in the flow of our questionnaire to avoid participants drawing their own conclusions about the hypotheses, which can evoke social desirability bias (e.g., [131], [132], [133]). Second, we ensured the respondents' anonymity. Third, we used the feedback from an extensive pretest on the variables involved in this article [131]. Fourth, we integrated a marker variable ([125], [133], [134], [135], [136], [137]) theoretically unrelated to at least one of our variables (i.e., donation, a dummy variable) into our questionnaire. As indicated above, we asked survey respondents whether they wanted to receive an executive research report and/or a donation of EUR 10 to a charity of their choice (or neither of these choices). Based on this

information, we developed the dichotomous variable donation, coded one if a donation was desired and zero otherwise.[1] We then computed the correlations between this variable and all the other variables in this article (see Table VI) [134], [138]. The maximum significant correlation value was relatively low (i.e., −0.180; see Cohen [140] for the correlation effect size). Hence, these correlations did not indicate common method bias [140]. Fifth, we used Harman's one-factor test, based on an exploratory factor analysis, to identify potential common method variance [132], [133], [141], [142]. We computed all our study variables as a single variable, showing that no single factor explains most of the covariance between the variables (the most crucial factor accounts for only 13.51% of the covariance). The results of these procedures indicated that the relationships in our survey regression are unlikely to be affected by common method bias.

B. Measures

Since the constructs in this article relied on established scales from the English-language literature, we translated all the questions in our survey into German. We back-translated them into English to check whether the German translation precisely conveyed the meaning of the original questions (cf. [143], [144]). The back-translation was conducted by a fellow researcher not further involved in this research project. In addition, we used extensive and helpful feedback from a pretest of our questionnaire involving five academics and five practitioners to ensure the comprehensibility and flow of the questionnaire (cf. [145]). The variables were collected using a structured survey, including only closed-ended questions.

To establish the construct validity of the multi-item constructs of our survey, we conducted a principle component analysis (PCA). Following Field [146] and Hair et al. [147], we suppressed factor loadings (i.e., PCA loadings) below 0.30. To interpret the factor groupings, we used varimax rotation to maximize the dispersion of the loads within the factors so that a smaller number of variables loaded onto each factor [146]. After removing cross-loadings, we ensured several items belonged to one factor [148]. We performed several empirical tests to establish the content and construct validity of our measures [149]. To test unidimensionality, we conducted Bartlett's test of item correlation (Bartlett's test = 0.00) and Kaiser–Meyer–Olkin statistics (KMO > 0.5). For the multi-item constructs in this article, we also calculated Cronbach's alpha, composite reliability (CR), and average variance extracted (AVE) values [150]. Not all the constructs reached the recommended threshold (0.70) for Cronbach's alpha values suggested by Nunnally [149]. However, similar situations have been noted in the family firm literature (cf. [44]). The CR statistics were all above the threshold of 0.70. The AVE values exceeded the threshold of 0.50, indicating the adequate reliability and validity of the constructs [151].

1) Dependent Variable: Digitalization was measured using a reverse-coded scale adapted from Plomp et al. [62]. Plomp et al. [62] built a so-called digitization maturity construct that measures the extent to which companies have digitalized their supply chains. We adapted this approach by focusing solely on the technological maturity dimensions. This measurement initially included nine statements for both the supply and the demand dimensions, such as "ordering goods or services online" versus "receiving online orders" and "managing the capacity or inventories of suppliers" versus "managing the capacity or inventories of customers" (for the complete list of items, see Table III). We asked respondents to indicate the extent to which their firms used specific IT systems/applications to manage these process characteristics and offered four answer categories [62]: 1) no; 2) yes, for only one of our suppliers/customers; 3) yes, for some of our suppliers/customers; and 4) yes, for most of our suppliers/customers. The nine-item "digitalization customer" construct was validated using a PCA with varimax rotation. The nine items loaded onto three factors and indicated satisfactory reliability (see Table III). The KMO measure verified the sampling adequacy of the analysis (KMO = 0.65, which is "mediocre" according to Kaiser and Rice [152]), and all the KMO values for the individual items were above 0.51 compared with an acceptable limit of 0.50 [152]. The three factors jointly explained 62.21% of the variance and had eigenvalues over Kaiser's criterion of 1. The nine-item "digitalization supplier" construct was also based on a PCA with varimax rotation (see Table III). To ensure the reliability and validity of the analysis, we eliminated two items because of their cross-loadings. The KMO measure verified the sampling adequacy of the analysis (KMO = 0.73, which indicates "middling" according to Kaiser and Rice [152]), and all the KMO values for the individual items were above 0.59 [152]. The seven items showed satisfactory reliability and loaded onto two factors (see Table III). These two factors had eigenvalues over Kaiser's criterion of 1 and jointly explained 58.92% of the variance. For our analysis, we computed the average of both dimensions as our appropriate variable, digitalization, ranked from high (4) to low (1).

2) Independent Variable: In line with the literature [44], [91], the three conflict management strategies (i.e., avoidance, compromise, and collaboration) were measured by established multi-item scales, including nine items initially. The items were measured using a seven-point Likert scale anchored from "strongly disagree" to "strongly agree." We included eight items in the analysis because of reliability and validity issues. The final multi-item constructs are based on a PCA with varimax rotation (see Table III). The KMO measure verified the sampling adequacy of the analysis: (KMO = 0.62 "mediocre" according to Kaiser and Rice [152]), and all the KMO values for the individual items were higher than 0.51 [152]. The eight items, therefore, indicated satisfactory reliability (see Table III) and loaded onto three factors. We termed the three resulting variables: avoidance, compromise, and collaboration. These three factors had eigenvalues over Kaiser's criterion of 1 and jointly explained 75.39% of the variance.

3) Moderator Variable: Our moderator variable, generational ownership dispersion, was measured using a single item

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[1]Donation as a single-item measure is not a perfect marker variable, as noted by Lindell and Whitney [132] and Williams et al. [136]. However, this marker variable did not lengthen our questionnaire compared with additionally including a multi-item measure. Furthermore, our procedure was in line with that of Calic and Ghasemaghaei [138].

TABLE III
CONSTRUCT VALIDITY OF DIGITALIZATION, THE THREE CONFLICT MANAGEMENT STRATEGIES, AND PAST PERFORMANCE

Digitalization (reflectively measured)		Factor loading (PCA)		
To support the sales function, does your organization use specific IT systems/applications for:		**1**	**2**	**3**
Receiving e-invoices?		**0.675**		
Enabling payments online for ordered products and services?		**0.771**		
Sending e-invoices?		**0.757**		
Sending offers?		0.346	**0.715**	
Answering calls after proposals and tenders?			**0.867**	
Launching sales auctions, for example, in B2B and B2C marketplaces?			**0.563**	0.308
Collaborating with customers to forecast their demand?				**0.825**
Collaborating with customers to design new products and services?				**0.774**
Managing the capacity and inventories of customers?		0.304		**0.726**
	Cronbach's α	0.66	0.60	0.76
	CR	0.78	0.76	0.82
	AVE	0.54	0.53	0.60
To support the purchase function, does your organization use specific IT systems/applications for:		**1**		**2**
Ordering goods and services online?		**0.787**		
Arranging payments online for ordered products and services?		**0.866**		
Receiving e-invoices?		**0.615**		
Running online auctions?				**0.694**
Collaborating with suppliers to forecast your demand?				**0.782**
Collaborating with suppliers to design new products and services?				**0.761**
Managing the capacity and inventories of suppliers?				**0.708**
	Cronbach's α	0.66		0.74
	CR	0.80		0.83
	AVE	0.58		0.54

Conflict management strategies (reflectively measured)		Factor loading (PCA)		
		Avoidance	**Compromise**	**Collaborate**
We attempt to avoid being "put on the spot" and try to keep conflicts to themselves.		**0.919**		
We usually avoid open discussions of differences.		**0.908**		
We try to find a middle course to resolve an impasse.			**0.733**	
We usually propose a middle ground for breaking deadlocks.			**0.930**	
We use "give and take" so that a compromise can be made.			**0.746**	
We exchange accurate information to solve the problem together.				**0.782**
We try to bring all our concerns out in the open to resolve the issues in the best possible way.				**0.846**
We try to work with one another for a proper understanding of the problem.				**0.870**
	Cronbach's α	0.83	0.76	0.80
	CR	0.91	0.85	0.87
	AVE	0.83	0.65	0.69

Past performance (reflectively measured)		Factor loading (PCA)	
		Growth	**Return**
Growth in sales		**0.935**	
Growth in market share		**0.940**	
Growth in profitability		0.326	**0.808**
Return on equity			**0.934**
Return on total assets			**0.935**
The profit margin on sales			**0.858**
Ability to fund growth from profits		0.414	**0.664**
	Cronbach's α	0.91	0.92
	CR	0.94	0.93
	AVE	0.88	0.72

The bold values represent the factor loadings and not significances, i.e., a bold value represents an association with the respective factor.

based on previous family business studies (e.g., [36], [154]). We asked respondents to indicate how many family generations were part of the ownership structure (e.g., [36], [94]). Three options were available: one generation, two generations, and three or more generations. Based on this information, we developed the dichotomous variable generational ownership dispersion, coded one for a family firm with two or more generations

involved and zero for a family firm with one generation in charge.

4) Control Variables: In our model, we integrated several relevant control variables; hence, we controlled for the following four variables theoretically or empirically related to family firms' level of digitalization. First, we controlled for firm size because larger family firms often have better access to finance;

TABLE IV
DESCRIPTIVE INFORMATION ON CASE FIRMS AND INTERVIEWEES

Case	Industry	Employees	Position	Family member	Interviewees family generation	Generational ownership dispersion	Interview duration
Alpha	Non manufacturing	>499	CEO	No		Yes	71 min
Beta	Non manufacturing	1–499	CEO	Yes	Younger generation	No	49 min
Gamma	manufacturing	>499	CFO	Yes	Middle generation	Yes	45 min
Delta	Non manufacturing	1–499	Employee	Yes	Younger generation	No	60 min
Epsilon	manufacturing	1–499	CEO	No		No	52 min
Zeta	Non manufacturing	1–499	CEO	Yes	Younger generation	Yes	48 min
Eta	Non manufacturing	1–499	Middle manager	Yes	Younger generation	Yes	72 min
Theta	Non manufacturing	1–499	Entry into the company planned	Yes	Younger generation	No	52 min
Iota	Non manufacturing	1–499	CEO	Yes	Younger generation	Yes	48 min
Kappa	Non manufacturing	1–499	Entry into the company planned	Yes	Younger generation	No	51 min
Lambda	manufacturing	1–499	CEO	Yes	Younger generation	Yes	51 min
My	manufacturing	1–499	Middle manager	No		No	62 min
Ny	Non manufacturing	1–499	Middle manager	Yes	Younger generation	Yes	52 min

Note. All the names of the family firms and interviewees are anonymized throughout the article, as confidentiality was guaranteed to all interview partners.

hence, they have more resources to invest in radical innovations [62], [154], [155]). By contrast, small- and medium-sized family firms usually have less economic power and severe resource constraints (e.g., [156]), often leading them to avoid or postpone digital transformation processes [8]. The respective dichotomous variable firm size was measured based on the number of employees (e.g., [36]), coded one if the family firm had more than 499 employees and zero otherwise.

Second, we controlled for industry because some industries are traditionally more prone to adopt new technologies, and innovations such as digital transformation are relatively more important [154]. Since most of the observed firms belong to the manufacturing industry (see Table V), we refrain from listing the various sectors individually. Therefore, industry represents a dummy variable, coded if the firm primarily belongs to the manufacturing industry and zero otherwise (i.e., all other sectors).

Third, we controlled for strategy since the family firm's strategic orientation can shape how it reacts to technological change [157]. We operationalized this variable based on two of Miles and Snow's [158] strategic archetypes: prospectors and defenders. While "defenders operate in relatively stable product areas, offer more limited products than competitors, and compete through cost leadership, quality, and service," prospector firms "compete through new products and market development" ([159], p. 359). Based on a short description of these two types of firms, we asked the respondents to choose which description fits their firm best. Based on the

respondent's choice, we developed the dichotomous variable strategy, coded one for prospector firms and zero for defender firms.

Fourth, we controlled for past performance because a higher degree of retained earnings and financial resources may lead to higher investment [160]—which can be expected to include investments in digitalization processes. We measured past performance on an eight-item scale based on the measurement proposed by [80]. We included seven items in the study because of reliability and validity issues. The respondents were asked to assess their firms' performance compared with their competitors in the 3 years before the survey. The items were measured using a seven-point Likert scale from "lower than competitors" to "higher than competitors." The PCA results showed that the items loaded onto two factors (see Table III). Both factors were metrically scaled and calculated as the mean value of the individual items. We computed the average of both performance factors as past performance.

C. Qualitative Interviews

To examine the modes of digitalization, the impact of multiple family generations, and applied conflict management strategies to overcome or prevent conflicts related to digitalization, we additionally conducted 13 semi-structured interviews with family business actors [161]. Frank et al. [35] have suggested that interviews are particularly valuable to analyze family business conflicts, as they can generate insights that could not be reached

with empirical-quantitative methods. The interviews were conducted with representatives of German family firms: owners, top managers, family members, and nonfamily managers. We conducted these interviews after we had obtained the above quantitative results to better assess and make sense of these survey results.

The family firms selected for the interviews consisted of six participants from the prior quantitative study (i.e., family firms that have already been part of the quantitative-based research) and seven additional family firms. Similar to the above survey, we tried to use geographic proximity between survey authors and potential interviewees to increase the likelihood of participation. Thus, the firms were selected to be located close to our university, i.e., in the same or neighboring German federal state. For this procedure, we used Bureau van Dijk's Amadeus database again, which included the location of the firm's headquarters and each firm's contact information. We also searched for potential companies due to personal contact, e.g., at various fairs. An additional sample criterion was firm size. We focused on family businesses with more than nine employees to exclude microenterprises since we expected that most of the micro family firms will not be comparable to much larger family firms when it comes to problems and conflicts regarding digitalization. To keep the companies comparable between our survey and the interview study, the upper limit for the additional companies (i.e., 3000 employees) was also applied when searching for interviewees. Another important criterion was the ownership structure. We were careful to include both family businesses whose ownership family spans only one and others that span several generations. This was necessary to connect our qualitative insights to the moderator variable from the survey study, i.e., ownership dispersion. This information could be crystallized through online research of the respective companies or asked in a personal exchange. Therefore, family firms of different ages, sizes, industries, generations, and generational ownership dispersion were included in our interview study (see Table IV). One person was interviewed for each of the 13 companies in this article.

The interviews were conducted during the COVID-19 pandemic, and we thus used online video communication software. The interview guide developed for this follow-up survey was sent to the interviewees in advance. The interviews were recorded with the permission of the interviewees, transcribed immediately afterward, and analyzed alongside the prior insights from the literature and our quantitative results. Respondents were assured that all data would be kept confidential and their identity would not be revealed. In particular, to better understand the variance in conflict management strategies across several ownership generations, the strategies presented in the literature (e.g., [44]), namely avoidance, compromise, and collaboration, were analyzed using a deductive approach following Mayring [162]. At the same time, we remained open to additional inductive insights from our interviews. Thus, our additional interview findings cannot be viewed as fully resulting from a deductive approach but rather from a combination of deduction and induction methods, rendering our approach to analyzing the interviews abductive [163]. We used a software-based evaluation tool to code and analyze our interview data and generate additional interview findings.

For these investigations, we focus on the primary outcomes regarding digitalization, its potential for conflicts, and possible strategies for resolving such inconsistencies.

IV. RESULTS

A. Descriptive Statistics and Correlations

Table V shows the descriptive statistics of our variables [e.g., N, mean, median, and standard deviation (SD)]. Digitalization ranges from 1.2 to 3.0, with a mean of 2.15 (SD = 0.46). These descriptive statistics indicate a relatively modest extent of digitalization in the German family firms we analyzed, as the theoretical maximum of our digitalization variable would be 4. Regarding the conflict management strategies, the respondents rated collaboration the highest (mean = 5.33), followed by compromise (mean = 4.57) and avoidance (mean = 3.35).

Table VI presents the correlation matrix. Due to the various scale levels of our variables, we used different measures of associations (for further information, see Field [146]). For the correlations between the metric and dichotomous variables, point-biserial correlation coefficients were applied. Pearson correlation coefficients were used for the correlations between the metric variables. For the correlations between the dichotomous variables, Phi values were deployed. Significant correlations at $p \leq 0.05$ are indicated in bold. There are some significant associations between the variables. Digitalization is negatively correlated with collaboration, while it is positively correlated with firm size, and generational ownership dispersion is positively correlated with manufacturing. However, all the correlations are below the accepted threshold of 0.70; hence, multicollinearity is unlikely to be a concern in our analyses [140], [148], [164].

B. Multiple Regression Analyses

Following Hartmann and Moers [165], Table VII provides the results of the hierarchical regression analysis. Our first model contains the control variables only (Model 1). The main effects suggested in H1 are included in Model 2. Finally, the complete model (Model 3) adds the interaction terms between the conflict management strategies (avoidance, compromise, and collaboration) and generational ownership dispersion. To better interpret the main effects and further assess potential multicollinearity issues, we mean-center all the variables involved in the interaction term [146], [147], [166]. In addition to the correlation matrix mentioned above, we further test whether multicollinearity issues might arise. Multicollinearity can be expected not to be an issue when the variance inflation factors (VIFs) are below the recommended threshold of 10 (e.g., [147], [164]). All the VIFs in our regression models are well below this threshold and even below 2. Hence, we do not have any indications that our results would suffer from multicollinearity issues.

Our hierarchical regression setup is supported because our full model (Model 3) features the highest R^2 of all the models (0.36). Further, all three models have significant F statistics ($p < 0.01$). To hold sufficient statistical power, our 11 independent variables in Model 3 would require a minimum number

TABLE V
DESCRIPTIVE STATISTICS

Variable	N	Mean	Min	Max	Median	SD
Digitalization	85	2.15	1.22	3.00	2.06	0.46
Avoidance	85	3.35	1.00	7.00	3.00	1.82
Compromise	85	4.57	1.00	7.00	4.67	1.32
Collaboration	85	5.33	1.00	7.00	5.67	1.25
Generational ownership dispersion	85	0.73	0.00	1.00	1.00	0.45
Firm size > 499	85	0.39	0.00	1.00	0.00	0.49
Manufacturing	85	0.73	0.00	1.00	1.00	0.45
Strategy	85	0.46	0.00	1.00	0.00	0.50
Past performance	85	4.56	1.00	6.80	4.60	1.08

Note. Min. = minimum; Max. = maximum; SD = standard deviation.

TABLE VI
CORRELATION MATRIX

	Variable	N	1	2	3	4	5	6	7	8	9	10
1	Digitalization	85	1									
2	Avoidance	85	0.096	1								
3	Compromise	85	0.024	0.119	1							
4	Collaboration	85	−0.089	−0.046	**−0.381**	1						
5	Generational ownership dispersion	85	0.109	−0.008	0.017	0.010	1					
6	Firm size > 499	85	**0.504**	0.114	−0.175	0.031	0.105	1				
7	Manufacturing	85	0.164	−0.059	−0.084	−0.146	**0.225**	0.105	1			
8	Strategy	85	−0.100	−0.138	−0.090	0.0050	0.029	−0.055	−0.077	1		
9	Past performance	85	0.116	−0.060	−0.182	0.083	−0.038	0.143	−0.117	0.189	1	
10	Donation (marker variable)	85	−0.009	0.104	−0.058	−0.180	−0.010	−0.051	0.115	−0.018	−0.185	1

The significance is based on the value $p < 0.10$.

TABLE VII
HIERARCHICAL REGRESSION ANALYSIS

	Dependent variable: digitalization											
	Control variables only (Model 1)				**Main effects added (Model 2)**				**Interaction effects added (Model 3)**			
Independent variables	Stand. beta	t value	p value	VIF	Stand. beta	t value	p value	VIF	Stand. beta	t value	p value	VIF
Constant		8.329	0.000			5.029	0.000	1.115		4.461	0.000	
Firm size > 499	0.476	4.903	0.000***	1.043	0.508	5.084	0.000***	1.116	0.501	5.057	0.000***	1.116
Manufacturing	0.116	1.205	0.232	1.032	0.104	1.037	0.303	1.074	0.126	1.252	0.215	1.157
Strategy	−0.079	−0.816	0.417	1.047	−0.060	−0.607	0.546	1.126	−0.094	−0.932	0.354	1.166
Past performance	0.076	0.772	0.443	1.079	0.120	1.194	0.236	1.070	0.158	1.557	0.124	1.179
Avoidance					0.011	0.113	0.910	1.323	0.012	0.126	0.900	1.088
Compromise					0.203	1.862	0.067*	1.252	0.216	1.907	0.060*	1.466
Collaboration					−0.174	−1.639	0.105	1.069	−0.145	−1.346	0.182	1.322
Generational ownership dispersion					0.037	0.377	0.707	1.115	0.033	0.340	0.735	1.071
Avoidance * generational ownership dispersion									−0.098	−0.985	0.328	1.135
Compromise * generational ownership dispersion									−0.018	−0.171	0.865	1.241
Collaboration * generational ownership dispersion									−0.189	−1.797	0.076*	1.256
R²		0.276				0.318				0.359		
Adjusted R²		0.240				0.247				0.262		
F		7.619***				4.438***				3.715***		
N		85				85				85		

*$p < 0.10$; **$p < 0.05$; ***$p < 0.01$.

between 55 observations (that is, five times the number of independent variables in the complete regression analysis, see Hair et al. [147]) and 75 observations (that is, 20 plus 5 times the number of independent variables, see Khamis and Kepler [167]). Hence, all three models should hold appropriate statistical power since our number of observations (85) is above both these thresholds.

In Model 1, we estimated the control variables' effects. These variables explain a relatively large proportion of the variance ($R2 = 0.28$). However, the control variables in Model 1

suggest only one significant effect. We find a positive relationship between firm size and digitalization ($b = 0.476$, $p < 0.01$), following our assumption that small family firms would be less likely than large family firms to have the resources to invest in digital transformation processes [62], [168].

In Model 2, we include the direct effects proposed in H1(a–c). The explained variance increases significantly ($R2 = 0.32$). However, we only find one significant direct effect on digitalization besides its positive relationship with firm size ($b = 0.508$, $p < 0.01$). That is, compromise is significantly associated
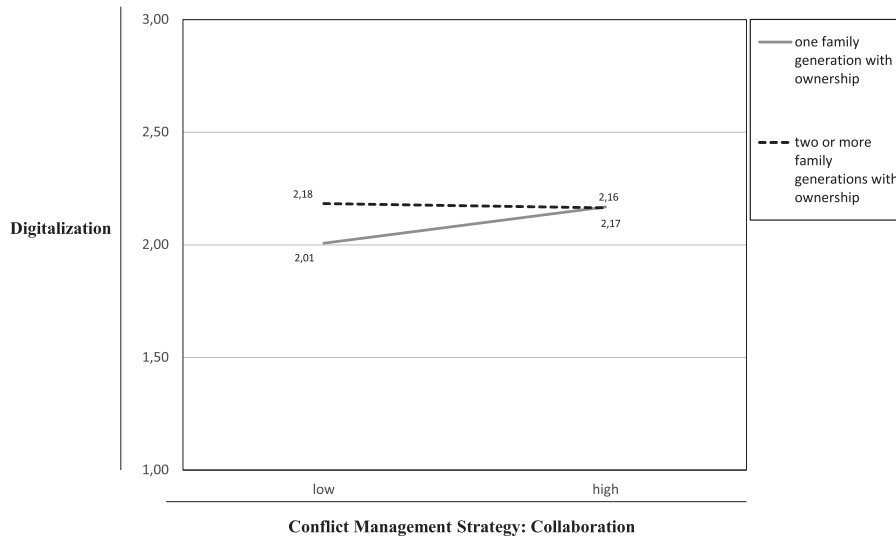
Fig. 2. Interaction between collaboration and generational ownership dispersion.

with digitalization ($b = 0.203$, $p < 0.10$), providing support for hypothesis H1b. Model 2 shows no significant direct effect of avoidance and collaboration on digitalization. Hence, H1a and H1c are not supported.

In Model 3, we include the interaction terms of the conflict management strategies and generational ownership dispersion. The significant predictors firm size ($b = 0.501$, $p < 0.01$) and compromise ($b = 0.216$, $p < 0.10$) are also confirmed in Model 3. Therefore, H1b receives further support from this model. In addition, one of the three proposed interaction effects, the moderating role of generational ownership dispersion in the relationship between collaboration and digitalization, turns out to be significant ($b = -0.189$, $p < 0.10$). These findings support H2c. In contrast, the other two interaction terms are unrelated to digitalization. Thus, H2a and H2b are not supported.

Fig. 2 plots the significant interaction effect found in Model 3, showing that a collaboration conflict management strategy positively impacts digitalization in family firms with only one ownership generation (see the solid line in Fig. 2). By contrast, the results show that when family ownership is dispersed over two or more generations, a high level of collaboration does not affect digitalization in family firms (see the almost flat dotted line in Fig. 2). In summary, the plot in Fig. 2 suggests that the relationship between collaboration and digitalization is more pronounced for family firms with only one ownership generation. That is, while the interaction term is significant in Model 3, the underlying dynamic is different from hypothesis H2c, where we proposed that this relationship would be more pronounced in family firms with ownership dispersed over two or more family generations. We thus turn to our insights from the qualitative interviews to make sense of this surprising finding.

C. Qualitative Interviews

The results of the interviews confirm our descriptive findings that digitalization is a hot and conflict-ridden topic for many contemporary family firms (see Table I). However, our interviewees' understanding of their family firms' current digitalization efforts is often related to process digitalization only, which aligns with earlier evidence presented by Soluk and Kammerlander [12]. That is, most interviewed family firm actors connect digitalization with efficiency and effectiveness improvements, which underpins our choice to focus on process digitalization in our quantitative survey. Only three of the 13 interviewees describe digitalization as the transformation of previously analog business models into digital ones. For instance, the younger generation family CEO of Beta, a company in the nonmanufacturing industry with more than 500 employees and one-generation ownership, stated: "Digitalization is not about organizational or production processes. For us, that would mean digitalizing organizational processes so that we have more time, more time for our employees, and more time for our customers."

All interviewed family firm actors noted that the challenges of digitalization could not simply be avoided and that their firms are actively taking entrepreneurial actions. Therefore, our interviews confirm our nonsignificant results on avoidance and detail that avoiding conflicts triggered by digitalization by trying to evade the issue seems unsuitable. Indeed, only one interviewee mentioned this strategy as a possible approach. The younger generation family member soon to join the family firm Theta, a company in the nonmanufacturing industry with less than 500 employees and a multigeneration ownership, acknowledged that he is "more of a conflict-avoiding person if possible," which explains his preference for the avoidance strategy.

In contrast, our survey findings suggest that adopting compromise as a strategy to overcome conflicts during the digitalization of family firms is a widespread and suitable approach. Many interviewees indicated a broad consensus in their firms about compromise strategies around digitalization. Several interviewees used expressions like "finding a consensus," "using mediation," and "convincing others" to describe their approaches to conflicts around digitalization. For instance, the nonfamily CEO of Epsilon, a company in the manufacturing industry with less than 500 employees and one-generation ownership, explained: "(…) we drive forward here with a perfect consensus."

TABLE VIII
ADDITIONAL INTERVIEW STATEMENTS

Interview statements regarding the understanding of digitalization	
Business model digitalization	"When we talk about digitalization, one thing is to digitalize our business model." *(Alpha, multiple-generation ownership)*
Process digitalization	"It is (digitalization) about paperless processes (...) to achieve advantages in efficiency and effectiveness." *(Gamma, middle generation, multiple-generation ownership)*
Process digitalization	"For me, digitalization is (...) taking what I do today in analog form and putting it on a digital track, so that people in the company can be freed from the tasks that are forever recurring." *(Epsilon, one-generation ownership)*
Process digitalization	"Ultimately, digitalization for our company is the digital mapping of legacy processes and the simplification and slagging of processes." *(Eta, younger generation, multiple-generation ownership)*
Process digitalization	"In our company, digitalization actually takes place primarily in processes and process management." *(Ny, younger generation,multiple-generation ownership)*

Interview statements regarding compromise strategy	
Consensus	"But it's (means: decision making) not yet to the point where we have governance, for example, to achieve certain majorities in the family tribes. So, now, this is still based on consensus." *(Delta, one-generation ownership)*

Interview statements regarding collaboration strategy	
Communication, transparency	"I explain what we do, how the business has changed, what digitalization means for us, and so on. (...) We still try to be as transparent as possible or to give as much transparency as possible to the individual topics." *(Alpha, younger generation, multiple-generation ownership)*
Communication, finding the best case	"Because understanding must be created, you need more communication, (…) in the best case, you find a level where you can say ok if we do it (means: the decision) now. But it just needs more (…) communication."*(Eta, younger generation, multiple-generation ownership)*

Interview statements regarding generational ownership dispersion	
Older generation as enabler	"(The older generation) is in their late 50s now, so it's difficult for them to say what the latest trends (in digitalization) are right now (…) they are an enabler in the background." *(Delta, younger generation, one-generation ownership)*
Conflicts concerning different understanding	"It's hard to argue things because sometimes the basic understanding isn't there either. Because they (the older generation) didn't grow up with it. (…) Then, they didn't focus on that anymore.You can derive the potential for conflict from this yourself." *(Epsilon, one-generation ownership)*
The young generation has the knowledge	"He (older generation) had given me free rein, but I knew (...) this is like open-heart surgery." *(Zeta, younger generation, multiple-generation ownership)*
The young generation has ideas, the old generation is backup	"(...) of course worlds collide. This is, of course, difficult. As the young generation, we may already have the ideas, but of course, that also needs backup." *(Eta, younger generation, multiple-generation ownership)*
Missing acceptance of digitalization in the older generation	"There are issues (means digitalization) that simply do not arouse acceptance in certain (means older) generations or in certain circles of shareholders because the individual shareholders have had nothing to do with these topics before." *(Iota, younger generation, multi-generation ownership)*
Not the topic for the older generation, the younger generation in charge	"Then my father (means: older generation) said to me, if you see this as your future path (means: digitalization), go for it, you must gain your experience on your own." *(Lambda, younger generation,multi-generation ownership)*

Our quantitative analyses in Table VII did not indicate a significant direct effect of collaboration as a conflict management strategy on digitalization. Our interviews show, however, that the respective family firms are resorting to this strategy to some extent. Here, words like "communication," "transparency," "opinion," and "rules" were mentioned several times. For instance, the family CEO of Beta, a company in the nonmanufacturing industry with less than 500 employees and one-generation ownership, noted: "(…) everyone contributes their own opinion. And the decision or whether the opinion is subsequently considered or not is something else. However, that doesn't depend on whether I don't hold the opinion, or my esteemed colleague doesn't hold the opinion. Therefore, the opinion that makes the most sense is always valued and taken. (…) The impulse before that is always thrown into the room, and then everyone can give their opinion on whether they like it or not."

In addition, our interview data illustrate how collaboration may help overcome conflicts during the digitalization of family firms and thus help to interpret our significant finding on the moderating role of generational ownership dispersion in the relationship between a collaboration conflict management strategy and digitalization. Our interviews indicate that in

family firms with multiple ownership generations, digitalization is usually not addressed collaboratively by actors from different generations. In contrast, our interviews indicate that in such family firms with generational ownership dispersion, the senior generations often delegate digitalization efforts to more junior generations due to the lack of expertise of the older generation around digitalization topics. Still, the different generations may need to compromise on a shared capital allocation, but collaboration is a less relevant conflict management strategy for such family firms with generational ownership dispersion. For instance, the nonfamily CEO of Alpha, a company in the nonmanufacturing industry with more than 500 employees and multigeneration ownership, told us: "In the young generation, the topic of digitalization has arrived very differently (…) these are digital natives, you don't have to tell them anything more about it. My generation (older generation) want to be convinced, but they understand that digitalization plays a role."

In contrast, the family firms covered by our interviews owned by one family generation are already exclusively led and owned by the younger, succeeding generation. While our interviews with actors from such family firms did not yield many conflict narratives, the notion that older generations do not actively

collaborate in digitalization efforts may help explain our significant but surprising interaction results above (see Table VII). That is, collaboration as a conflict management strategy may be most beneficial in family firms where just one ownership generation is left but where there are potentially several owners from the same (young) generation who need to collaborate on their family firms' further digitalization endeavors. Further illustrative quotes from our interviews can be found in Table VIII.

To summarize our interview findings, we did not find much evidence of avoidance strategies here, but several indications of compromise strategies, which is consistent with the nonsignificant results on avoidance and the significant direct effect of compromise on family business digitalization levels in our quantitative survey. In addition, our interviews suggest that the significant interaction effect we found between collaboration and generational ownership dispersion can be explained by the notion that collaboration seems to be a relevant conflict management strategy only in family firms owned by same generation, usually younger generation family members. In contrast, in family firms with more than one family generation involved in ownership, collaboration does not seem to be an essential strategy as our interviews indicate that in such family firms, intergenerational collaboration on digitalization efforts does usually not occur, while a compromise strategy on the principal strategic direction of the family firm is still needed (as indicated by the significant direct effect of this conflict management strategy on digitalization in Table VII). In contrast, in family firms with multiple ownership generations, digitalization tasks tend to be delegated to younger generations.

V. CONCLUSION

A. Discussion and Contributions

With this article, we aimed to shed more light on how conflict management strategies may help family firms reach higher levels of digitalization since we assumed—and found—that many contemporary family firms experience conflicts around digitalization. In addition, we expected such conflicts to be particularly pronounced in family firms where ownership is dispersed among two or more family generations since we expected that conflicts might mainly occur between older and younger family owners. Our results indicate that not all conflict management strategies help to address digitalization issues. We found that avoidance is an ineffective conflict management strategy for digitalization issues in family firms. Our interviews indicate that digitalization is here to stay and discussions around this topic cannot simply be avoided. In contrast, our survey and interview findings show that compromise is positively related to higher levels of digitalization in family firms. Finally, the impact of collaboration is more pronounced in family firms with owners from a single-family generation. This article thus underscores the importance of tailored conflict management strategies to promote digitalization and enhance competitiveness in family firms. It highlights the need for family firms to recognize the significance of digitalization in modern business operations and to use effective conflict management strategies to address digitalization issues.

In summary, we contribute to the literature in three primary ways. First, we contribute to the family business literature on conflict theory (e.g., [36], [41], [44]). Former research has documented that for certain conflicts—for instance, relationship, process, and task conflicts—so-called conflict management strategies have an impact on the output of family firms, in particular, organizational performance (e.g., [36], [44], [169], [170]) or innovation (e.g., [46]), especially for disruptive innovations (e.g., [31]). To what extent conflicts are to be considered in the case of digitalization and digital transformation has not been empirically examined to date. Therefore, this article is among the first to deliver empirical evidence focusing on conflicts regarding the digitalization of family firms. In the literature, it has been assumed that there could be an increased potential for conflict in relation to digitalization (e.g., [12]), but this has not yet been analyzed in quantitative studies based on measurable conflict levels. Our survey shows that many family firms experience process conflicts regarding digitalizing their businesses.

At the same time, and second, we add to this literature by demonstrating that selected conflict management strategies—in particular, compromise and collaboration—may help to alleviate such conflicts and support family business digitalization. While Weyrauch et al. [32] presented one generic approach to deal with innovation-related conflicts, we highlight several established conflict resolution techniques that apply to family firms and, thus, most firms worldwide. Whereas collaboration has been studied more frequently in the literature as a strategy and has been found to increase corporate performance effectively (e.g., [169], [170]), compromise has not yet been studied so profoundly as a conflict management strategy. Our survey and interview data show that compromise is an important conflict management strategy that can solve digitalization conflicts and help foster family firms' digitalization—irrespective of whether ownership is dispersed among several family generations. In this way, this article adds to the growing literature on the digitalization of family firms [12], [14], [15], [26], [28], [58] by highlighting an important strategy that can be used by family firms experiencing troubles or conflicts in their digitalization efforts.

Third, this article shows that the effectiveness of the collaboration conflict management strategy is contingent on the number of family generations holding ownership rights (i.e., generational ownership dispersion). This further adds to the literature on the digitalization of family firms and the literature on the effectiveness of conflict management strategies in family firms (e.g., [41], [43]). This article indicates that the heterogeneity among large family firms renders some strategies more effective than others (e.g., [59], [60]). In family businesses where several family generations are involved as owners, collaboration is a less pronounced strategy to manage digitalization conflicts than in family businesses where only one family generation acts as owner. This finding is surprising, since we assumed from the earlier literature that collaboration between the generations could be strengthened by such a strategy, especially in the context of digitalization. However, our interview data suggest that older family generations often do not want to be actively involved with digitalization and pass this topic on to the younger and, in their opinion, more tech affine generations. This article thus contributes to the literature on family business conflicts [41], [43] by finding that conflict management strategies may need to be adapted for conflicts around digitalization, and that

earlier findings on the effectiveness of specific strategies such as collaboration cannot just be applied to technology-related challenges such as family business digitalization. Hence, this article adds a significant moderator of the relationship between conflict management strategies and family business digitalization: that is, generational ownership dispersion.

B. Implications for Practice

As a practical implication, this article suggests that family firms facing conflicts around digitalization can benefit from implementing conflict management strategies to promote the digitalization of their business. In particular, compromise conflict management strategies seem advisable since they were found to directly impact the level of digitalization, regardless of the number of ownership generations in the family firm. In contrast, our findings suggest that family firms should only focus on collaboration conflict management strategies around digitalization when there is one ownership generation. In this case, they can sort out digitalization-related conflicts in the same (younger) generation and thus foster higher levels of digitalization and ensure their business remains competitive in the rapidly evolving technological landscape. In contrast, in cases of multiple ownership generations, collaboration strategies do not promise much value for family firms as older generations tend to delegate digitalization efforts to younger generations. Finally, our findings imply that family firms should not use avoidance conflict management strategies when it comes to the digital transformation since digital business models are here to stay and their application cannot simply be avoided.

C. Limitations

Like other research, our findings are not free from limitations. First, the participating family firms are located in one European country, Germany; thus, our results cannot be generalized to other countries with different cultural settings and potentially different cultural norms regarding handling conflicts. Hence, family business research using data from additional regions (e.g., non-European countries) is needed to corroborate our findings. Second, our sample is composed of Mittelstand firms, which have been shown to have different dynamics when innovating than larger firms [97]. At the same time, however, most family firms worldwide are not large and German Mittelstand firms are generally perceived as representing very typical family firms [10], [101]. Hence, while our results may not generalize to larger family firms, they are likely representative of the challenges faced by many family firms worldwide when it comes to digital transformation. Third, the data collection period represents a possible limitation. We collected the survey data during a global pandemic. Furthermore, a digital transformation cannot be accomplished quickly. Hence, we cannot determine how much the process has progressed or even been completed during the data collection period, which prevents us from objectively measuring the firms' digitalization effort's success or failure. This should be considered since the respondents' answers depend strongly on their current mood, especially during mood-forming events, such as a pandemic and potential discrepancies in the company's strategic direction [131]. A longitudinal investigation may thus

be warranted to understand the long-term influence of potential conflicts and conflict management strategies on the digital transformation of family firms. Fourth, the respondents' answers could be subjective, especially when they are a part of the older generation, which has a significant impact on decision-making [171].

Consequently, their suggestions, especially conflict management solutions, could be caused by their perceptions and may deviate from the firms' objective situation [106]. Further corroborating and contextualizing our findings by in-depth case studies that are able to capture the views from multiple actors is thus an additional fruitful research avenue to create a deeper understanding of the successful digital transformation of family businesses. This topic is promised to accompany us for many years to come.

REFERENCES

[1] R. Chittoor and R. Das, "Professionalization of management and succession performance—A vital linkage," *Fam. Bus. Rev.*, vol. 20, no. 1, pp. 65–79, 2007, doi: 10.1111/j.1741-6248.2007.00084.x.

[2] J. de Groote, J. Soluk, S. L. Laue, M. Heck, and N. Kammerlander, "How can family-owned Mittelstand firms use their unique resources to master the age of digitalization? The role of family historical, venture, and collaborative capital," *Bus. Horiz.*, vol. 66, pp. 133–152, 2023, doi: 10.1016/j.bushor.2022.04.001.

[3] C. Llopis-Albert, F. Rubio, and F. Valero, "Impact of digital transformation on the automotive industry," *Technol. Forecasting Social Change*, vol. 162, 2021, Art. no. 120343, doi: 10.1016/j.techfore.2020.120343.

[4] S. Nambisan, K. Lyytinen, A. Majchrzak, and M. Song, "Digital innovation management: Reinventing innovation management research in a digital world," *MIS Quart.*, vol. 41, no. 1, pp. 223–238, 2017, doi: 10.25300/MISQ/2017/41:1.03.

[5] C. Legner et al., "Digitalization: Opportunity and challenge for the business and information systems engineering community," *Bus. Inf. Syst. Eng.*, vol. 59, no. 4, pp. 301–308, 2017, doi: 10.1007/s12599-017-0484-2.

[6] A. K. Heider, T. Clauss, M. Hülsbeck, M. Gerken, and T. A. Rüsen, "Blood is thicker than water: The role of family willingness and family ability in achieving holistic digitalization on in family businesses," *Int. J. Innov. Manage.*, vol. 26, no. 3, 2022, Art. no. 2240009, doi: 10.1142/S1363919622400096.

[7] N. Omrani, N. Rejeb, A. Maalaoui, M. Dabić, and S. Kraus, "Drivers of digital transformation in SMEs," *IEEE Trans. Eng. Manage.*, pp. 1–14, 2022, doi: 10.1109/TEM.2022.3215727.

[8] S. Nambisan, "Digital entrepreneurship: Toward a digital technology perspective of entrepreneurship," *Entrepreneurship Theory Pract.*, vol. 41, no. 6, pp. 1029–1055, 2017, doi: 10.1111/etap.12254.

[9] D. Schallmo, C. A. Williams, and L. Boardman, "Digital transformation of business models—Best practice, enablers, and roadmap," *Int. J. Innov. Manage.*, vol. 21, no. 8, pp. 1–17, 2017, doi: 10.1142/S136391961740014X.

[10] D. Schallmo, C. A. Williams, and J. Tidd, "The art of holistic digitalization: A meta-view on strategy, transformation, implementation, and maturity," *Int. J. Innov. Manage.*, vol. 26, no. 3, 2022, Art. no. 2240007, doi: 10.1142/S1363919622400072.

[11] C. Singhal, R. V. Mahto, and S. Kraus, "Technological innovation, firm performance, and institutional context: A meta-analysis," *IEEE Trans. Eng. Manage.*, vol. 69, no. 6, pp. 2976–2986, Dec. 2022, doi: 10.1109/TEM.2020.3021378.

[12] J. Soluk and N. Kammerlander, "Digital transformation in family-owned Mittelstand firms: A dynamic capabilities perspective," *Eur. J. Inf. Syst.*, vol. 30, no. 6, pp. 676–711, 2021, doi: 10.1080/0960085X.2020.1857666.

[13] E. Strauss, G. Kristandl, and M. Quinn, "The effects of cloud technology on management accounting and decision-making," *CIMA Res. Executive Summary Ser.*, vol. 10, no. 6, pp. 1–12, 2014.

[14] C. E. Batt, P. Cleary, M. R. W. Hiebl, M. Quinn, and P. M. Rikhardsson, "The digitalization of family firms: A research agenda," in *A Research Agenda for Family Business: A Way Ahead for the Field*, A. Calabrò, Ed. Cheltenham, U.K.: Edward Elgar, 2020, pp. 247–260, doi: 10.4337/9781788974073.00021.

[15] A. S. Löhde, G. Campopiano, and D. G. Jiménez, "Digital business transformation in family firms: How the owning family sets the scene," in *A Research Agenda for Family Business: A Way Ahead for the Field*, A. Calabrò, Ed. Cheltenham, U.K.: Edward Elgar, 2020, pp. 261–273, doi: 10.4337/9781788974073.00022.

[16] J. H. Chua, J. J. Chrisman, and P. Sharma, "Defining the family business by behavior," *Entrepreneurship Theory Pract.*, vol. 23, no. 4, pp. 19–39, 1999.

[17] T. Steiger, C. Duller, and M. R. Hiebl, "No consensus in sight: An analysis of ten years of family business definitions in empirical research studies," *J. Enterprising Culture*, vol. 23, no. 1, pp. 25–62, 2015, doi: 10.1142/S0218495815500028.

[18] S. Newbert and J. B. Craig, "Moving beyond socioemotional wealth: Toward a normative theory of decision making in family business," *Fam. Bus. Rev.*, vol. 30, no. 4, pp. 339–346, 2017, doi: 10.1177/0894486517733572.

[19] M. Cucculelli, I. Dileo, and M. Pini, "Filling the void of family leadership: Institutional support to business model changes in the Italian Industry 4.0 experience," *J. Technol. Transfer*, vol. 47, no. 1, pp. 213–241, 2022, doi: 10.1007/s10961-021-09847-4.

[20] T. Pucci, M. Brumana, T. Minola, and L. Zanni, "Social capital and innovation in a life science cluster: The role of proximity and family involvement," *J. Technol. Transfer*, vol. 45, no. 1, pp. 205–227, 2020, doi: 10.1007/s10961-017-9591-y.

[21] N. D. Kraiczy, A. Hack, and F. W. Kellermanns, "What makes a family firm innovative? CEO risk-taking propensity and the organizational context of family firms," *J. Prod. Innov. Manage.*, vol. 32, no. 3, pp. 334–348, 2015, doi: 10.1111/jpim.12203.

[22] M. Anwar, M. A. Scheffler, and T. Clauss, "Digital capabilities, their role in business model innovativeness, and the internationalization of SMEs," *IEEE Trans. Eng. Manage.*, pp. 1–13, 2022, doi: 10.1109/TEM.2022.3229049.

[23] J. J. Daspit, J. J. Chrisman, T. Ashton, and N. Evangelopoulos, "Family firm heterogeneity: A definition, common themes, scholarly progress, and directions forward," *Fam. Bus. Rev.*, vol. 34, no. 3, pp. 296–322, 2021, doi: 10.1177/08944865211008350.

[24] P. Davis, "Realising the potential of the family business," *Org. Dyn.*, vol. 12, no. 1, pp. 47–56, 1983, doi: 10.1016/0090-2616(83)90026-8.

[25] P.-H. Chung, C.-J. Lee, H.-L. Wu, and C.-Y. Lee, "Innovation promoter or inhibitor? Non-family CEO's effect on innovation in family businesses," *IEEE Trans. Eng. Manage.*, vol. 70, no. 9, pp. 3143–3155, Sep. 2023, doi: 10.1109/TEM.2021.3080115.

[26] T. R. Bürgel, M. R. W. Hiebl, and D. I. Pielsticker, "Digitalization and entrepreneurial firms' resilience to pandemic crises: Evidence from COVID-19 and the German Mittelstand," *Technol. Forecasting Social Change*, vol. 186, 2023, Art. no. 122135, doi: 10.1016/j.techfore.2022.122135.

[27] M. F. Manesh, M. M. Pellegrini, G. Marzi, and M. Dabic, "Knowledge management in the fourth industrial revolution: Mapping the literature and scoping future avenue," *IEEE Trans. Eng. Manage.*, vol. 68, no. 1, pp. 289–300, Feb. 2021, doi: 10.1109/TEM.2019.2963489.

[28] J. Soluk, I. Miroshnychenko, N. Kammerlander, and A. De Massis, "Family influence and digital business model innovation: The enabling role of dynamic capabilities," *Entrepreneurship Theory Pract.*, vol. 45, no. 4, pp. 867–905, 2021, doi: 10.1177/1042258721998946.

[29] H. A. Rozak, A. Adhiatma, O. Fachrunnisa, and T. Rahayu, "Social media engagement, organizational agility and digitalization strategic plan to improve SMEs' performance," *IEEE Trans. Eng. Manage.*, pp. 1–10, 2021, doi: 10.1109/TEM.2021.3085977.

[30] R. Chakma, J. Paul, and S. Dhir, "Organizational ambidexterity: A review and research agenda," *IEEE Trans. Eng. Manage.*, pp. 1–17, 2021, doi: 10.1109/TEM.2021.3114609.

[31] M. Guffler, A. Bertschi-Michel, A. Hack, and F. W. Kellermanns, "Family firm ambidexterity: The influence of paradoxical tensions and the entrepreneurial family's cohesion," *J. Technol. Transfer*, pp. 1–33, 2023, doi: 10.1007/s10961-022-09986-2.

[32] T. Weyrauch, C. Herstatt, and F. Tietze, "The objective–conflict–resolution approach: A novel approach for developing radical and frugal innovation," *IEEE Trans. Eng. Manage.*, vol. 68, no. 3, pp. 699–712, Jun. 2021, doi: 10.1109/TEM.2020.3000924.

[33] G. M. Caputo, M. M. Pellegrini, and R. Rialti, "Conflict management in family businesses," *Int. J. Conflict Manage.*, vol. 29, no. 4, pp. 519–542, 2018, doi: 10.1108/IJCMA-02-2018-0027.

[34] C. A. E. Claßen and R. Schulte, "How do conflicts impact change in family businesses? The family system and familiness as a catalytic converter of change," *J. Org. Change Manage.*, vol. 30, no. 7, pp. 1198–1212, 2017, doi: 10.1108/JOCM-04-2016-0071.

[35] H. Frank, A. Kessler, L. Nosé, and D. Suchy, "Conflicts in family firms: State of the art and perspectives for future research," *J. Fam. Bus. Manage.*, vol. 1, no. 2, pp. 130–153, 2011, doi: 10.1108/20436231111167219.

[36] F. W. Kellermanns and K. A. Eddleston, "A family perspective on when conflict benefits family firm performance," *J. Bus. Res.*, vol. 60, no. 10, pp. 1048–1057, 2007, doi: 10.1016/j.jbusres.2006.12.018.

[37] D. Wang and Z. Zhang, "Disassembling the influences of perceived family relational conflict on business family offspring's intrapreneurial intentions," *Int. Entrepreneurship Manage. J.*, vol. 18, no. 1, pp. 153–189, 2022, doi: 10.1007/s11365-021-00747-5.

[38] J. M. Xi, S. Kraus, M. Filser, and F. W. Kellermanns, "Mapping the field of family business research: Past trends and future directions," *Int. Entrepreneurship Manage. J.*, vol. 11, no. 1, pp. 113–132, 2015, doi: 10.1007/s11365-013-0286-z fha.

[39] R. Tagiuri and J. A. Davis, "On the goals of successful family companies," *Fam. Bus. Rev.*, vol. 5, no. 1, pp. 43–62, 1992, doi: 10.1111/j.1741-6248.1992.00043.x.

[40] P. S. Davis and P. D. Harveston, "The phenomenon of substantive conflict in the family firm: A cross-generational study," *J. Small Bus. Manage.*, vol. 39, no. 1, pp. 14–30, 2001, doi: 10.1111/0447-2778.00003.

[41] H. Qiu and M. Freel, "Managing family-related conflicts in family businesses: A review and research agenda," *Fam. Bus. Rev.*, vol. 33, no. 1, pp. 90–113, 2020, doi: 10.1177/0894486519893223.

[42] M. Harvey and R. E. Evans, "Family business and multiple levels of conflict," *Fam. Bus. Rev.*, vol. 7, no. 4, pp. 331–348, 1994, doi: 10.1111/j.1741-6248.1994.00331.x.

[43] A. Kubíček and O. Machek, "Intrafamily conflicts in family businesses: A systematic review of the literature and agenda for future research," *Fam. Bus. Rev.*, vol. 33, no. 2, pp. 194–227, 2020, doi: 10.1177/0894486519899573.

[44] R. L. Sorenson, "Conflict management strategies used by successful family businesses," *Fam. Bus. Rev.*, vol. 12, no. 4, pp. 325–339, 1999, doi: 10.1111/j.1741-6248.1999.00325.x.

[45] D. Miller, A. Minichilli, and G. Corbetta, "Is family leadership always beneficial?," *Strategic Manage. J.*, vol. 34, no. 5, pp. 553–571, 2013, doi: 10.1002/smj.2024.

[46] D. De Clercq and I. Belausteguigoitia, "Intergenerational strategy involvement and family firms' innovation pursuits: The critical roles of conflict management and social capital," *J. Fam. Bus. Strategy*, vol. 6, no. 3, pp. 178–189, 2015, doi: 10.1016/j.jfbs.2015.04.003.

[47] V. Magrelli, P. Rovelli, C. Benedetti, R. Überbacher, and A. De Massis, "Generations in family business: A multifield review and future research agenda," *Fam. Bus. Rev.*, vol. 35, no. 1, pp. 15–44, 2022, doi: 10.1177/08944865211069781.

[48] D. Shepherd and J. M. Haynie, "Family business, identity conflict, and an expedited entrepreneurial process: A process of resolving identity conflict," *Entrepreneurship Theory Pract.*, vol. 33, no. 6, pp. 1245–1264, 2009, doi: 10.1111/j.1540-6520.2009.00344.x.

[49] H. W. Wong and K. L. F. Chau, *Tradition and Transformation in a Chinese Family Business*. Evanston, IL, USA: Routledge, 2019, doi: 10.4324/9781315690612.

[50] A. De Massis, J. H. Chua, and J. J. Chrisman, "Factors preventing intrafamily succession," *Fam. Bus. Rev.*, vol. 21, no. 2, pp. 183–199, 2008, doi: 10.1111/j.1741-6248.2008.00118.x.

[51] B. Dunn, "Success themes in Scottish family businesses: Philosophies and practices through the generations," *Fam. Bus. Rev.*, vol. 8, no. 1, pp. 17–28, 1995, doi: 10.1111/j.1741-6248.1995.00017.x.

[52] W. G. Dyer, *Cultural Change in Family Firms: Understanding and Managing Business and Family Transitions*. San Francisco, CA, USA: Jossey-Bass, 1986.

[53] I. Lansberg and J. Astrachan, "Influence of family relationships on succession planning and training: The importance of mediating factors," *Fam. Bus. Rev.*, vol. 7, no. l, pp. 39–59, 1994, doi: 10.1111/j.1741-6248.1994.00039.x.

[54] F. W. Kellermanns and K. A. Eddleston, "Feuding families: When conflict does a family firm good," *Entrepreneurship Theory Pract.*, vol. 28, no. 3, pp. 209–228, 2004, doi: 10.1111/j.1540-6520.2004.00040.x.

[55] C. Alvarado-Alvarez, I. Armadans, and M. J. Parada, "Tracing the roots of constructive conflict management in family firms," *Negotiation Conflict Manage. Res.*, vol. 13, no. 2, pp. 105–126, 2020, doi: 10.1111/ncmr.12164.

[56] K. E. Gersick, J. A. Davis, M. M. Hampton, and I. Lansberg, *Generation to Generation: Life Cycles of the Family Business*. Boston, MA, USA: Harvard Business School Press, 1997.

[57] F. W. Kellermanns, K. A. Eddleston, R. Sarathy, and F. Murphy, "Innovativeness in family firms: A family influence perspective," *Small Bus. Econ.*, vol. 38, no. 1, pp. 85–101, 2012, doi: 10.1007/s11187-010-9268-5.

[58] J. K. de Groote, W. Conrad, and A. Hack, "How can family businesses survive disruptive industry changes? Insights from the traditional mail order industry," *Rev. Managerial Sci.*, vol. 15, no. 8, pp. 2239–2273, 2021, doi: 10.1007/s11846-020-00424-x.

[59] J. H. Chua, J. J. Chrisman, L. P. Steier, and S. B. Rau, "Sources of heterogeneity in family firms: An introduction," *Entrepreneurship Theory Pract.*, vol. 36, no. 6, pp. 1103–1113, 2012, doi: 10.1111/j.1540-6520.2012.00540.x.

[60] C. Dibrell and E. Memili, "A brief history and a look to the future of family business heterogeneity: An introduction," in *The Palgrave Handbook of Heterogeneity Among Family Firms*, C. Dibrell and E. Memili, Eds. London, U.K.: Palgrave Macmillan, 2019, pp. 1–15, doi: 10.1007/978-3-319-77676-7.

[61] C. Degryse, "Digitalisation of the economy and its impact on labour markets," ETUI Research Paper (Working Paper), 2016.

[62] M. G. Plomp, R. S. Batenburg, and R. C. van Rooij, "Determining chain digitisation maturity: A survey among Dutch CIOs," *Electron. Markets*, vol. 22, no. 4, pp. 283–293, 2012, doi: 10.1007/s12525-012-0102-6.

[63] J. B. Craig and K. Moores, "A 10-year longitudinal investigation of strategy, systems, and environment on innovation in family firms," *Fam. Bus. Rev.*, vol. 19, no. 1, pp. 1–10, 2006, doi: 10.1111/j.1741-6248.2006.00056.x.

[64] P. Junni, R. M. Sarala, V. A. S. Taras, and S. Y. Tarba, "Organizational ambidexterity and performance: A meta-analysis," *Acad. Manage. Perspectives*, vol. 27, no. 4, pp. 299–312, 2013, doi: 10.5465/amp.2012.0015.

[65] A. Calabrò, M. Vecchiarini, J. Gast, G. Campopiano, A. De Massis, and S. Kraus, "Innovation in family firms: A systematic literature review and guidance for future research," *Int. J. Manage. Rev.*, vol. 21, no. 3, pp. 317–355, 2019, doi: 10.1111/ijmr.12192.

[66] R. Ceipek, J. Hautz, A. De Massis, K. Matzler, and L. Ardito, "Digital transformation through exploratory and exploitative Internet of Things innovations: The impact of family management and technological diversification," *J. Prod. Innov. Manage.*, vol. 38, no. 1, pp. 142–165, 2021, doi: 10.1111/jpim.12551.

[67] M. Filser, A. Brem, J. Gast, S. Kraus, and A. Calabrò, "Innovation in family firms—Examining the inventory and mapping the path," *Int. J. Innov. Manage.*, vol. 20, no. 6, pp. 1–39, 2016, doi: 10.1142/S1363919616500547.

[68] L. Ardito and P. Capolupo, "Exploratory innovation in family-owned firms: The moderating role of digital search," *IEEE Trans. Eng. Manage.*, pp. 1–11, 2023, doi: 10.1109/TEM.2022.3231468.

[69] L. R. Gomez-Mejia, P. C. Patel, and T. M. Zellweger, "In the horns of the dilemma: Socioemotional wealth, financial wealth, and acquisitions in family firms," *J. Manage.*, vol. 44, no. 4, pp. 1369–1397, 2018, doi: 10.1177/0149206315614375.

[70] L. R. Gómez-Mejía, C. Cruz, P. Berrone, and J. De Castro, "The bind that ties: Socioemotional wealth preservation in family firms," *Acad. Manage. Ann.*, vol. 5, no. 1, pp. 653–707, 2011, doi: 10.5465/19416520.2011.593320.

[71] P. Berrone, C. Cruz, L. R. Gomez-Mejia, and M. Larraza-Kintana, "Socioemotional wealth and corporate responses to institutional pressures: Do family-controlled firms pollute less?," *Administ. Sci. Quart.*, vol. 55, no. 1, pp. 82–113, 2010, doi: 10.2189/asqu.2010.55.1.82.

[72] P. Berrone, C. Cruz, and L. R. Gómez-Mejía, "Socioemotional wealth in family firms theoretical dimensions, assessment approaches, and agenda for future research," *Fam. Bus. Rev.*, vol. 25, no. 3, pp. 258–279, 2012, doi: 10.1177/0894486511435355.

[73] M. P. Leitterstorf and S. B. Rau, "Socioemotional wealth and IPO underpricing of family firms," *Strategic Manage. J.*, vol. 35, no. 5, pp. 751–760, 2014, doi: 10.1002/smj.2236.

[74] S. Firfiray and L. R. Gomez-Mejia, "When is ambivalence good for family firms? Understanding the impact of family managers' emotional ambivalence on decision making," *Entrepreneurship Res. J.*, vol. 11, no. 3, pp. 177–189, 2021, doi: 10.1515/erj-2021-0181.

[75] "Family business survey: U.S. findings," PricewaterhouseCoopers, 2021, Accessed: Aug. 10, 2021. [Online]. Available: https://www.pwc.com/us/en/industries/private-companyservices/library/family-business-survey/innovation-digital-disruption.html

[76] S. Sharma, G. Singh, P. Jones, S. Kraus, and Y. K. Dwivedi, "Understanding agile innovation management adoption for SMEs," *IEEE Trans. Eng. Manage.*, vol. 69, no. 6, pp. 3546–3557, Dec. 2022, doi: 10.1109/TEM.2022.3148341A.

[77] A. König, N. Kammerlander, and A. Enders, "The family innovator's dilemma: How family influence affects the adoption of discontinuous technologies by incumbent firms," *Acad. Manage. Rev.*, vol. 38, no. 3, pp. 418–441, 2013, doi: 10.5465/amr.2011.0162.

[78] K. A. Jehn, "A multimethod examination of the benefits and detriments of intragroup conflict," *Administ. Sci. Quart.*, vol. 40, no. 2, pp. 256–282, 1995, doi: 10.2307/2393638.

[79] K. A. Jehn, "A qualitative analysis of conflict types and dimensions in organizational groups," *Administ. Sci. Quart.*, vol. 42, no. 3, pp. 530–557, 1997, doi: 10.2307/2393737.

[80] K. A. Eddleston and F. W. Kellermanns, "Destructive and productive family relationships: A stewardship theory perspective," *J. Bus. Venturing*, vol. 22, no. 4, pp. 545–565, 2007, doi: 10.1016/j.jbusvent.2006.06.004.

[81] D. M. Saunders, J. W. Minton, R. J. Lewicki, and B. Barry, *Negotiation: Readings, Exercises, and Cases*. Homewood, IL, USA: Irwin/McGraw-Hill, 2003.

[82] R. E. Walton and R. B. McKersie, *A Behavioral Theory of Labor Negotiations: An Analysis of a Social Interaction System*. New York, NY, USA: McGraw-Hill, 1965.

[83] L. L. Putnam, G. T. Fairhurst, and S. Banghart, "Contradictions, dialectics, and paradoxes in organizations: A constitutive approach," *Acad. Manage. Ann.*, vol. 10, no. 1, pp. 65–171, 2016, doi: 10.5465/19416520.2016.1162421.

[84] F. W. Kellermanns and K. A. Eddleston, "Feuding families: The management of conflict in family firms," in *Handbook of Research on Family Business*, P. Poutziouris, K. Smyrnios, and S. Klein, Eds. Cheltenham, U.K.: Edward Elgar, 2006, pp. 358–368.

[85] K. Alderson, "Conflict management and resolution in family-owned businesses," *J. Fam. Bus. Manage.*, vol. 5, no. 2, pp. 140–156, 2015, doi: 10.1108/JFBM-08-2015-0030.

[86] C. S. Galbraith, "Divorce and the financial performance of small family businesses: An exploratory study," *J. Small Bus. Manage.*, vol. 41, no. 3, pp. 296–309, 2003, doi: 10.1111/1540-627X.00083.

[87] C. McCarthy, "Styles of handling interpersonal conflict and family functioning in family owned businesses," *Dissertation Abstr. Int.*, vol. 57-04B, 1996, Art. no. 2922.

[88] L. A. Perlow and N. P. Repenning, "The dynamics of silencing conflict," *Res. Org. Behav.*, vol. 29, pp. 195–223, 2009, doi: 10.1016/j.riob.2009.06.007.

[89] W. K. Smith and M. W. Lewis, "Toward a theory of paradox: A dynamic equilibrium model of organizing," *Acad. Manage. Rev.*, vol. 36, no. 2, pp. 381–403, 2011, doi: 10.5465/amr.2009.0223.

[90] W. S. Schulze, M. H. Lubatkin, and R. N. Dino, "Toward a theory of agency and altruism in family firms," *J. Bus. Venturing*, vol. 18, no. 4, pp. 473–490, 2003, doi: 10.1016/S0883-9026(03)00054-5.

[91] M. A. Rahim, "A measure of styles of handling interpersonal conflict," *Acad. Manage. J.*, vol. 26, no. 2, pp. 368–376, 1983, doi: 10.2307/255985.

[92] D. McKee, T. M. Madden, F. W. Kellermanns, and K. A. Eddleston, "Conflicts in family firms: The good and the bad," in *The SAGE Handbook of Family Business*, L. Melin, M. Nordqvist, and P. Sharma, Eds. Newbury Park, CA, USA: Sage, 2014, pp. 514–528, doi: 10.4135/9781446247556.n26.

[93] K. C. Seymour, "Intergenerational relationships in the family firm: The effect of leadership on succession," *Fam. Bus. Rev.*, vol. 6, no. 3, pp. 263–281, 1993, doi: 10.1111/j.1741-6248.1993.00263.x.

[94] K. A. Eddleston, R. F. Otondo, and F. W. Kellermanns, "Conflict, participative decision-making, and generational ownership dispersion: A multilevel analysis," *J. Small Bus. Manage.*, vol. 46, no. 3, pp. 456–484, 2008, doi: 10.1111/j.1540-627X.2008.00252.x.

[95] R. Arteaga and S. Menéndez-Requejo, "Family constitution and business performance: Moderating factors," *Fam. Bus. Rev.*, vol. 30, no. 4, pp. 320–338, 2017, doi: 10.1177/0894486517732438.

[96] P. S. Davis and P. D. Harveston, "In the founder's shadow: Conflict in the family firm," *Fam. Bus. Rev.*, vol. 12, no. 4, pp. 311–323, 1999, doi: 10.1111/J.1741-6248.1999.00311.X.

[97] A. De Massis, J. Kotlar, G. Campopiano, and L. Cassia, "Dispersion of family ownership and the performance of small-to-medium size private family firms," *J. Fam. Bus. Strategy*, vol. 4, no. 3, pp. 166–175, 2013, doi: 10.1016/j.jfbs.2013.05.001.

[98] A. Shleifer and R. W. Vishny, "Large shareholders and corporate control," *J. Political Econ.*, vol. 94, pp. 461–488, 1986, doi: 10.1086/261385.

[99] M. R. W. Hiebl, "Family involvement and organizational ambidexterity in later-generation family businesses: A framework for further investigation," *Manage. Decis.*, vol. 53, no. 5, pp. 1061–1082, 2015, doi: 10.1108/MD-04-2014-0191.

[100] A. Calabrò, M. Torchia, D. G. Jimenez, and S. Kraus, "The role of human capital on family firm innovativeness: The strategic leadership role of family board members," *Int. Entrepreneurship Manage. J.*, vol. 17, no. 1, pp. 261–287, 2021, doi: 10.1007/s11365-020-00657-y.

[101] H. Berghoff, "The end of family business? The Mittelstand and German capitalism in transition, 1949–2000," *Bus. Hist. Rev.*, vol. 80, no. 2, pp. 263–295, 2006, doi: 10.1017/S0007680500035492.

[102] A. Pahnke and F. Welter, "The German mittelstand: Antithesis to silicon valley entrepreneurship?," *Small Bus. Econ.*, vol. 52, pp. 345–358, 2019, doi: 10.1007/s11187-018-0095-4.

[103] A. Pahnke, F. Welter, and D. B. Audretsch, "In the eye of the beholder? Differentiating between SMEs and Mittelstand," *Small Bus. Econ.*, vol. 60, pp. 729–743, 2023, doi: 10.1007/s11187-022-00612-x.

[104] C. Weigel, K. Derfuss, and M. R. W. Hiebl, "Financial managers and organizational ambidexterity in the German Mittelstand: The moderating role of strategy involvement," *Rev. Managerial Sci.*, vol. 17, pp. 569–605, 2023, doi: 10.1007/s11846-022-00534-8.

[105] A. De Massis, D. Audretsch, L. Uhlaner, and N. Kammerlander, "Innovation with limited resources: Management lessons from the German Mittelstand," *J. Prod. Innov. Manage.*, vol. 35, no. 1, pp. 125–146, 2018, doi: 10.1111/jpim.12373.

[106] S. D. Becker, M. D. Mahlendorf, U. Schäffer, and M. Thaten, "Budgeting in times of economic crisis," *Contemporary Accounting Res.*, vol. 33, no. 4, pp. 1489–1517, 2016, doi: 10.1111/1911-3846.12222.

[107] E. H. Manser Payne, A. J. Dahl, and J. Peltier, "Digital servitization value co-creation framework for AI services: A research agenda for digital transformation in financial service ecosystems," *J. Res. Interactive Marketing*, vol. 15, no. 2, pp. 200–222, 2021, doi: 10.1108/JRIM-12-2020-0252.

[108] S. Meng, H. Su, and J. Yu, "Digital transformation and corporate social performance: How do board independence and institutional ownership matter?," *Front. Psychol.*, vol. 13, 2022, doi: 10.3389/fpsyg.2022.915583.

[109] S. Zahra, J. Hayton, and C. Salvato, "Entrepreneurship in family vs. non-family firms: A resource-based analysis of the effect of organizational culture," *Entrepreneurship Theory Pract.*, vol. 28, no. 4, pp. 363–381, 2004, doi: 10.1111/j.1540-6520.2004.00051.x.

[110] M. R. Hiebl and Z. Li, "Non-family managers in family firms: Review, integrative framework and future research agenda," *Rev. Managerial Sci.*, vol. 14, pp. 763–807, 2020, doi: 10.1007/s11846-018-0308-x.

[111] L. Li, W. Tang, H. Zhou, and S. Yang, "Digitalization and firm performance: The moderating role of top management team attributes," *IEEE Trans. Eng. Manage.*, pp. 1–11, 2023, doi: 10.1109/TEM.2023.3242766.

[112] S. Bartholomew and A. D. Smith, "Improving survey response rates from chief executive officers in small firms: The importance of social networks," *Entrepreneurship Theory Pract.*, vol. 30, no. 1, pp. 83–96, 2006, doi: 10.1111/j.1540-6520.2006.00111.x.

[113] D. A. Dillman, J. D. Smyth, and L. M. Christian, *Internet, Phone, Mail, and Mixed-Mode Surveys: The Tailored Design Method*. Hoboken, NJ, USA: Wiley, 2014.

[114] K. Mellahi and L. C. Harris, "Response rates in business and management research: An overview of current practice and suggestions for future direction," *Brit. J. Manage.*, vol. 27, no. 2, pp. 426–437, 2016, doi: 10.1111/1467-8551.12154.

[115] E. Singer and C. Ye, "The use and effects of incentives in surveys," *Ann. Amer. Acad. Political Social Sci.*, vol. 645, no. 1, pp. 112–141, 2013, doi: 10.1177/0002716212458082.

[116] E. Casprini, T. Pucci, and L. Zanni, "From growth goals to proactive organizational resilience: First evidence in women-led and non-women-led Italian wineries," *Rev. Managerial Sci.*, vol. 17, pp. 1017–1036, 2023, doi: 10.1007/s11846-022-00557-1.

[117] Y. Ling, M. Hammond, and L. Q. Wei, "Ethical leadership and ambidexterity in young firms: Examining the CEO-TMT Interface," *Int. Entrepreneurship Manage. J.*, vol. 18, no. 1, pp. 25–48, 2022, doi: 10.1007/s11365-020-00695-6.

[118] C. G. Sastre, M. del Mar Benavides-Espinosa, and D. Ribeiro-Soriano, "When intentions turn into action: Pathways to successful firm performance," *Int. Entrepreneurship Manage. J.*, vol. 18, no. 2, pp. 733–751, 2022, doi: 10.1007/s11365-021-00782-2.

[119] F. Bernhard and R. Labaki, "Moral emotions in family businesses: Exploring vicarious guilt of the next generation," *Fam. Bus. Rev.*, vol. 34, no. 2, pp. 193–212, 2020, doi: 10.1177/0894486520941944.

[120] J. J. Chrisman, J. H. Chua, and R. Litz, "Comparing the agency costs of family and non-family firms: Conceptual issues and exploratory evidence," *Entrepreneurship Theory Pract.*, vol. 28, no. 4, pp. 335–354, 2004, doi: 10.1111/j.1540-6520.2004.00049.x.

[121] S. R. Wilson, J. G. Whitmoyer, T. M. Pieper, J. H. Astrachan, J. F. Hair, Jr, and M. Sarstedt, "Method trends and method needs: Examining methods needed for accelerating the field," *J. Fam. Bus. Strategy*, vol. 5, no. 1, pp. 4–14, 2014, doi: 10.1016/j.jfbs.2014.01.011.

[122] A. Chidlow, P. N. Ghauri, S. Yeniyurt, and S. T. Cavusgil, "Establishing rigor in mail-survey procedures in international business research," *J. World Bus.*, vol. 50, no. 1, pp. 26–35, 2015, doi: 10.1016/j.jwb.2014.01.004.

[123] D. I. Pielsticker and M. R. W. Hiebl, "Survey response rates in family business research," *Eur. Manage. Rev.*, vol. 1, no. 1, pp. 327–346, 2020, doi: 10.1111/emre.12375.

[124] C. S. Cycyota and D. A. Harrison, "What (not) to expect when surveying executives," *Org. Res. Methods*, vol. 9, no. 2, pp. 133–160, 2006, doi: 10.1177/1094428105280770.

[125] R. F. Speklé and S. K. Widener, "Challenging issues in survey research: Discussion and suggestions," *J. Manage. Accounting Res.*, vol. 30, no. 2, pp. 3–21, 2018, doi: 10.2308/jmar-51860.

[126] M. T. Frohlich, "Techniques for improving response rates in O.M. survey research," *J. Oper. Manage.*, vol. 20, no. 1, pp. 53–62, 2002, doi: 10.1016/S0272-6963(02)00003-7.

[127] A. Van Loon, "Survey nonresponse in The Netherlands effects on prevalence estimates and associations," *Ann. Epidemiol.*, vol. 13, no. 2, pp. 105–110, 2003, doi: 10.1016/S1047-2797(02)00257-0.

[128] A. N. Oppenheimer, *Questionnaire Design and Attitude Measurement*. New York, NY, USA: Basic Books, 1966.

[129] W. A. Van der Stede, S. M. Young, and C. X. Chen, "Assessing the quality of evidence in empirical management accounting research: The case of survey studies," *Accounting, Org. Soc.*, vol. 30, no. 7–8, pp. 655–684, 2005, doi: 10.1016/j.aos.2005.01.003.

[130] J. S. Armstrong and T. S. Overton, "Estimating nonresponse bias in mail surveys," *J. Marketing Res.*, vol. 14, no. 3, pp. 396–402, 1977, doi: 10.2307/3150783.

[131] P. M. Podsakoff, S. B. MacKenzie, J.-Y. Lee, and N. P. Podsakoff, "Common method biases in behavioral research: A critical review of the literature and recommended remedies," *J. Appl. Psychol.*, vol. 88, no. 5, pp. 879–903, 2003, doi: 10.1037/0021-9010.88.5.879.

[132] M. K. Lindell and D. J. Whitney, "Accounting for common method variance in cross-sectional research designs," *J. Appl. Psychol.*, vol. 86, no. 1, pp. 114–121, 2001, doi: 10.1037//0021-9010.86.1.114.

[133] G. T. M. Hult, D. J. Ketchen, S. T. Cavusgil, and R. J. Calantone, "Knowledge as a strategic resource in supply chains," *J. Oper. Manage.*, vol. 24, no. 5, pp. 458–475, 2006, doi: 10.1016/j.jom.2005.11.009.

[134] C. W. Craighead, D. J. Ketchen, K. S. Dunn, and G. T. M. Hult, "Addressing common method variance: Guidelines for survey research on information technology, operations, and supply chain management," *IEEE Trans. Eng. Manage.*, vol. 58, no. 3, pp. 578–588, Aug. 2011, doi: 10.1109/TEM.2011.2136437.

[135] H. A. Richardson, M. J. Simmering, and M. C. Sturman, "A tale of three perspectives: Examining post hoc statistical techniques for detection and correction of common method variance," *Org. Res. Methods*, vol. 12, no. 4, pp. 762–800, 2009, doi: 10.1177/1094428109332834.

[136] L. J. Williams, N. Hartman, and F. Cavazotte, "Method variance and marker variables: A review and comprehensive CFA marker technique," *Org. Res. Methods*, vol. 13, no. 3, pp. 477–514, 2010, doi: 10.1177/1094428110366036.

[137] N. K. Malhotra, S. S. Kim, and A. Patil, "Common method variance in IS research: A comparison of alternative approaches and reanalysis of past research," *Manage. Sci.*, vol. 52, no. 12, pp. 1865–1883, 2006, doi: 10.1287/mnsc.1060.0597.

[138] G. Calic and M. Ghasemaghaei, "Big data for social benefits: Innovation as a mediator of the relationship between Big Data and corporate social performance," *J. Bus. Res.*, vol. 131, pp. 391–401, 2021, doi: 10.1016/j.jbusres.2020.11.003.

[139] J. Cohen, *Statistical Power Analysis for the Behavioral Sciences*, 2nd ed. Hillsdale, NJ, USA: Lawrence Erlbaum, 1988, doi: 10.4324/9780203771587.

[140] R. P. Bagozzi, Y. Yi, and L. W. Phillips, "Assessing construct validity in organizational research," *Administ. Sci. Quart.*, vol. 36, no. 3, pp. 421–458, 1991, doi: 10.2307/2393203.

[141] H. H. Harman, *Modern Factor Analysis*. Chicago, IL, USA: Univ. Chicago Press, 1976.

[142] P. M. Podsakoff and D. W. Organ, "Self-reports in organizational research: Problems and prospects," *J. Manage.*, vol. 12, no. 4, pp. 531–544, 1986, doi: 10.1177/014920638601200408.

[143] R. W. Brislin, "Back-translation for cross-cultural research," *J. Cross-Cultural Psychol.*, vol. 1, no. 3, pp. 185–216, 1970, doi: 10.1177/135910457000100301.

[144] W. Maneesriwongul and J. K. Dixon, "Instrument translation process: A methods review," *J. Adv. Nurs.*, vol. 48, no. 2, pp. 175–186, 2004, doi: 10.1111/j.1365-2648.2004.03185.x.

[145] S. D. Hunt, R. D. Sparkman, and J. B. Wilcox, "The pretest in survey research: Issues and preliminary findings," *J. Marketing Res.*, vol. 19, no. 2, pp. 269–273, 1982, doi: 10.1177/002224378201900211.

[146] A. P. Field, *Discovering Statistics Using IBM SPSS Statistics*, 5th ed. Newbury Park, CA, USA: Sage, 2018.

[147] J. F. Hair, C. M. Ringle, and M. Sarstedt, "PLS-SEM: Indeed a silver bullet," *J. Marketing Theory Pract.*, vol. 19, no. 2, pp. 139–152, 2011, doi: 10.2753/MTP1069-6679190202.

[148] M. Sarstedt, C. M. Ringle, D. Smith, R. Reams, and J. F. Hair, "Partial least squares structural equation modeling (PLS-SEM): A useful tool for family business researchers," *J. Fam. Bus. Strategy*, vol. 5, no. 1, pp. 105–115, 2014, doi: 10.1016/j.jfbs.2014.01.002.

[149] J. C. Nunnally, *Psychometric Theory (2.ed.). McGraw-Hill Series in Psychology*. New York, NY, USA: McGraw-Hill, 1978.

[150] J. F. Hair, W. C. Black, B. J. Babin, and R. E. Anderson, *Multivariate Data Analysis*, 7th ed. Upper Saddle River, NJ, USA: Prentice-Hall, 2010.

[151] C. Fornell and D. F. Larcker, "Structural equation models with unobservable variables and measurement error," *J. Marketing Res.*, vol. 18, no. 1, pp. 39–50, 1981, doi: 10.1177/002224378101800104.

[152] H. F. Kaiser and J. Rice, "Little jiffy, mark iv," *Educ. Psychol. Meas.*, vol. 34, no. 1, pp. 111–117, 1974, doi: 10.1177/001316447403400115.

[153] J. P. Wanous, A. E. Reichers, and M. J. Hudy, "Overall job satisfaction: How good are single-item measures?," *J. Appl. Psychol.*, vol. 82, no. 2, pp. 247–252, 1997, doi: 10.1037/0021-9010.82.2.247.

[154] J. Craig and C. Dibrell, "The natural environment, innovation, and firm performance: A comparative study," *Fam. Bus. Rev.*, vol. 19, no. 4, pp. 275–288, 2006, doi: 10.1111/j.1741-6248.2006.00075.x.

[155] G. George, "Slack resources and the performance of privately held firms," *Acad. Manage. J.*, vol. 48, no. 4, pp. 661–676, 2005, doi: 10.5465/amj.2005.17843944.

[156] M. D. P. Casado-Belmonte, M. D. L. M. Capobianco-Uriarte, R. Martínez-Alonso, and M. J. Martínez-Romero, "Delineating the path of family firm innovation: Mapping the scientific structure," *Rev. Managerial Sci.*, vol. 15, no. 8, pp. 2455–2499, 2021, doi: 10.1007/s11846-021-00442-3.

[157] Z. Liu, J. Zhou, and J. Li, "How do family firms respond strategically to the digital transformation trend: Disclosing symbolic cues or making substantive changes?," *J. Bus. Res.*, vol. 155, 2023, Art. no. 113395, doi: 10.1016/j.jbusres.2022.113395.

[158] R. E. Miles and C. C. Snow, *Organizational Strategy, Structure, and Process*. New York, NY, USA: McGraw-Hill, 1978.

[159] R. Simons, "Accounting control systems and business strategy: An empirical analysis," *Accounting, Org. Soc.*, vol. 12, no. 4, pp. 357–374, 1987, doi: 10.1016/0361-3682(87)90024-9.

[160] A. Werner, S. Schell, and L. Haunschild, "How does a succession influence investment decisions, credit financing and business performance in small and medium-sized family firms?," *Int. Entrepreneurship Manage. J.*, vol. 17, no. 1, pp. 423–446, 2021, doi: 10.1007/s11365-019-00613-5.

[161] S. E. Rabionet, "How I learned to design and conduct semi-structured interviews: An ongoing and continuous journey," *Qualitative Rep.*, vol. 16, no. 2, pp. 563–566, 2011.

[162] P. Mayring and T. Frenzl, "Qualitative Inhaltsanalyse," in *Handbuch Methoden der empirischen Sozialforschung*. Berlin, Germany: Springer, pp. 543–556, doi: 10.1007/978-3-531-18939-0_38.

[163] B. L. Kennedy and R. Thornberg, "Deduction, induction, and abduction," in *The SAGE Handbook of Qualitative Data Collection*, U. Flick, Ed. Newbury Park, CA, USA: Sage, 2018, pp. 49–64.

[164] C. F. Dormann et al., "Collinearity: A review of methods to deal with it and a simulation study evaluating their performance," *Ecography*, vol. 3, no. 1, pp. 27–46, 2013, doi: 10.1111/j.1600-0587.2012.07348.x.

[165] F. G. H. Hartmann and F. Moers, "Testing contingency hypotheses in budgetary research: An evaluation of the use of moderated regression analysis," *Accounting, Org. Soc.*, vol. 24, no. 4, pp. 291–315, 1999, doi: 10.1016/S0361-3682(99)00002-1.

[166] L. J. Cronbach, "Statistical tests for moderator variables: Flaws in analyses recently proposed," *Psychol. Bull.*, vol. 102, no. 3, pp. 414–417, 1987, doi: 10.1037/0033-2909.102.3.414.

[167] H. J. Khamis and M. Kepler, "Sample size in multiple regression: 20 + 5k," *J. Appl. Statist. Sci.*, vol. 17, no. 4, pp. 505–517, 2010.

[168] F. W. Kellermanns and K. A. Eddleston, "Corporate entrepreneurship in family firms: A family perspective," *Entrepreneurship Theory Pract.*, vol. 30, no. 6, pp. 809–830, 2006, doi: 10.1111/J.1540-6520.2006.00153.X.

[169] R. L. Sorenson, C. A. Folker, and K. H. Brigham, "The collaborative network orientation: Achieving business success through collaborative relationships," *Entrepreneurship Theory Pract.*, vol. 32, no. 4, pp. 615–634, 2008, doi: 10.1111/j.1540-6520.2008.00245.x.

[170] R. L. Sorenson, K. E. Goodpaster, P. R. Hedberg, and A. Yu, "The family point of view, family social capital, and firm performance: An exploratory test," *Fam. Bus. Rev.*, vol. 22, no. 3, pp. 239–253, 2009, doi: 10.1177/0894486509332456.

[171] S. Reisinger and J. M. Lehner, "Navigating a family business through a changing environment: Findings from a longitudinal study," *Rev. Managerial Sci.*, vol. 9, no. 2, pp. 411–429, 2015, doi: 10.1007/s11846-014-0163-3.

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