

The Impact of Digitalization on Family Firms' Performance: The Moderating Role of Family Goals

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Abstract—In this article, we examine the performance effects of business information technology (IT) alignment in the context of family firms. Using a unique survey-based dataset of 954 European family firms, this study provides empirical support for the prediction that business-IT alignment is associated with family firms' performance. However, this result is weaker in family firms that prioritize family goals.

Index Terms—Business information technology (IT) alignment, family firms, family goals, performance, socioemotional wealth (SEW).

I. INTRODUCTION

DIGITALIZATION can be defined as the use of digital technologies or information technology (IT) to reshape business processes [1]. Therefore, any digitalization initiative that ensures an alignment between IT and business strategy aimed at fostering value creation describes a construct known as business-IT alignment (BITA) [2]. From a process view, BITA is the creation of a suitable strategic fit between a firm's business executives and IT or digital technology experts regarding their views on strategy or strategic decision making [3], [4], [5]. It is generally conceptualized as a firm-level construct about the congruence in the vision and plans between IT and business strategy [5], [6], [7], [8], [9]. A large body of research has focused on analyzing the performance effects of BITA, which has produced mixed results [6]. These conflicting findings are referred to as the alignment paradox [7]. Illustratively, prior research has shown a positive effect of BITA on performance [10], [11], [12]. Other studies have shown a negative effect of BITA on performance (e.g., [7]). The alignment paradox is a result of the failure of BITA to foster firms' ability to respond timely to market conditions and lead to an intended increase in performance [13]. Alignment paradox essentially shows a reduced or no effect of BITA on performance [14], [15].

One of the major reasons for these fragmented results is that prior studies have largely examined this technical question of

BITA in the prism of the strategic alignment model (see [5]). In this light, existing research has sought to explain BITA in four dimensions, namely business strategy, IT strategy, business infrastructure and processes, and IT infrastructure and processes [5], [11], [16]. While the strategic alignment model appears to be comprehensive in its analytic perspectives, there is an implicit assumption that all firms strive for BITA to increase financial performance. However, this might not be the case if family firms, defined as firms that are owned, controlled, or managed by business families [17], [18], are considered, which leads us to question whether there is indeed an "alignment paradox" (e.g., [2] and [15]). Family firms, for example, are driven by family goals in their strategic activities, such as BITA [19], [20], [21]. These goals include dynastic succession, family legacy, family cohesion, family members' identification with the firm, etc., which might impact the way they decide about BITA and consequently the outcome [22], [23], [24]. For instance, family goals are associated with less risk taking [17]. Meanwhile, implementing BITA involves significant risks as the outcome is often uncertainty [7], [10]. This suggests that family firm is likely to be conservative and cautious in their implementation of BITA decisions. Furthermore, BITA involves experimenting with new technologies and IT infrastructure [15]. It is also widely accepted that family firm owners are emotionally attached to established technologies and routines [21]. Therefore, the focus on family goals might hinder a proper implementation of BITA and, consequently, the expected performance gains from BITA. These family goals are collectively referred to as socioemotional wealth (SEW) [25], [26]. While the idiosyncratic focus of family firms on SEW has been shown to impact performance outcomes, such as sales and employment [27], [28], innovation performance [18], [29], [30], [31], profitability [32], [33], [34], among others, there is still a big gap in the understanding of how family goals impact business model innovation, given the complex nature of these activities [35]. Business model innovation in this sense refers to the nontrivial changes that are fostered by BITA as well as the introduction of technologies to increase value creation and capture and, consequently, firm performance [36].

Family firms have been shown to deploy digital technologies aimed at improving business models [21], [37]. However, the literature is silent on whether there is BITA in family firms and even less on how this affects the performance of family firms and under which conditions. Notwithstanding, one of the fundamental challenges of family firms is how to improve profitability via digital business model innovation processes [38],

[39], which includes aligning digital technology with business strategies amidst increasing focus on family goals [40], [41], [42]. We believe this to be an important gap in the literature that this study aims to fill. More specifically, we seek to answer the following questions: *What is the influence of BITA on the performance of family firms? How do family goals moderate this relationship?*

Filling this gap is relevant because family firms constitute about two-third of businesses around the world, estimated to contribute about 80% to employment and about 70%–90% to annual global gross domestic product (GDP) [28], [43]. Also, recent studies have shown that family firms are improving performance as a result of firm renewal through the digitalization of business models [44], [45], [46], [47], [48]. There could not have been a better time to investigate how the level of BITA affects performance and how family goals influence this relationship.

Using a dataset of European family firms collected through the successful transgenerational entrepreneurship practices (STEP) Project Global Consortium (SPGC) between September 13 and November 15, 2021, the study finds empirical support for the prediction that BITA has a positive effect on the performance of family firms, but this relationship is weaker in family firms, which prioritize family goals.

The study makes three important contributions to the literature on BITA and family business strategy. First, this is the first study that addresses the important issue of BITA on firm performance in family firms. By leveraging the context of family firms, the study reveals the positive performance effects associated with BITA in family firms. In this light, the study contributes to the ongoing discussion about whether there is an alignment paradox [15] by revealing that family firms, by their nature, create work environments where employees feel involved and supported, pursue care-oriented policies [49], provide job security [50], and an environment where employees and managers consult and exchange ideas [49]. These enable family firms to take the advantage of BITA and increase performance. Second, the study contributes to the family firm literature by showing that an increasing focus on family goals compromises financial performance associated with BITA in family firms. By leveraging on the heterogeneity of family goals, the study reveals that non-financial goals play a significant role between family firms' digital strategy and performance. It also shows that family firms make economic tradeoffs to achieve nonfinancial family goals [51], [52], even in the context of important business policy decisions, such as BITA [53]. This suggests that family firms place a higher weight on nonfinancial family goals in their strategic decision-making processes [54], [55]. Third, this study contributes to the business model innovation literature by showing that BITA is an important antecedent of the process of ensuring nontrivial changes to business processes, value creation, and capture in family firms [56]. Thus, highlighting business model innovation as an important driver of success in family firms [35]. Fourth, this study advances the primary literature on European family businesses using digitalization to foster performance (e.g., [47], [57], and [58]). In doing so, this study used a large sample of 954 European family firms to solve the paradox tension in family firms concerning digital strategy, family goals, and performance.

II. LITERATURE REVIEW AND HYPOTHESIS

A. BITA, Business Model Innovation, and Performance in Family Firms

BITA is generally conceptualized as a firm-level construct about the congruence in the vision and plans between digital technology and business strategy [3], [4], [5], [6]. BITA is also viewed as creating a fit between business processes and IT infrastructure [3]. BITA facilitates business model innovation through the nontrivial changes introduced by the alignment between IT and business strategy to increase value creation and, hence, firm performance [36].

Prior research indicates that alignment is positively associated with firm performance across industries [7], [59], [60]. Alignment creates a shared understanding of business processes such that important changes are discovered by IT executives on time. An effective alignment also ensures that the role of IT capabilities in fostering new strategies and business models to deal with emerging issues is easily communicated to business executives [36], [61], [62]. In light of this, the trust-based intimate relationship of mutual respect and recognition created by alignment increases a firm's ability to detect and provide timely solutions to both internal and external changes, such as digital innovation [59], [63], [64].

Digital technology occupies an important position in the strategic decision making and implementation process in today's rapidly changing business environment [13]. Alignment is reported to increase operational efficiency [65], [66], [67], [68], thereby creating opportunities for firms to benefit from complementarities and synergies in IT–business investments and, thus, improve performance [69], [70]. A proper alignment with business strategies will eliminate wasteful investments in nonstrategic areas [7]. This will consequently ensure that scarce resources are applied to only priority activities, such as digital business model innovation to drive BITA [59], [71], [72].

Digital business model innovation is one of the strategies adopted by firms to increase performance [44], [47]. In particular, digital business model innovation has been recognized for its ability to facilitate long-term competitive advantage as well as survival by improving the creation, delivery, and capture of value in firms [73], [74]. For instance, deploying digital technologies may propel family firms to exploit new entrepreneurial opportunities by changing how business is conducted, such as how existing and new customers can be reached [37], [75], [76]. This may also lead to cost reductions via automation of processes [35], [68]. The desire for ownership, control, and long-term orientation [77] as well as the unique learning and knowledge management systems in family firms [78], [79] facilitate the process of acquiring the needed skills and capabilities for digital business model innovation strategies [35], [80], [81].

Yet, for family firms to fully reap the value of digital technologies, there is a need for a proper alignment between business strategy and digital technology. As business model innovation remains an important source of competitive advantage in family firms [82], aligning this important strategic change with the digital technology framework of an organization will unleash greater

long-term value with significant performance implications for family firms.

Family firms' concern for and care-oriented employment relationships with employees [49], [83] make them more suitable to maximize the dimensions of BITA [59]. Regarding communication as a dimension of BITA, family firm owners are good employers who treat employees well by, for instance, involving them in key decision-making processes [84], [85]. This is achieved through open communication channels that allow employees—digital technology employees—to function fully as integrated members of the business whose ideas are acknowledged. Second, the clear communication between family owners and employees, as well as the show of concern for employee satisfaction, creates an environment of trust and collaboration between family owners and digital technology employees [86], [87], [88]. Third, by their ability to offer job security or retain talent [50], [87], and provide mentoring, training, and opportunities for employees to develop business and IT skills [89], [90], family owners endear themselves to employees. This ensures that a balanced level of communication, objective value capture metrics, and partnering are achieved and, ultimately, BITA, which leads to sustained firm performance [59]. In view of this, it is plausible to predict that increasing BITA in family firms will lead to an increase in firm performance.

Hypothesis 1: An increase in BITA is positively associated with an increase in family firms' performance.

B. Family Goals, BITA, and Firm Performance

In this study, we operationalize family goals as the nonfinancial utilities that the members of a family aspire to obtain as a result of their controlling position in a firm [19], [22], [55]. These goals include preserving the family's status and image in the community, family harmony and unity, creating opportunities for the next generation, customer loyalty to the family name, perpetuation of the family dynasty through successful inter-generation transfer of ownership and control, family members' identification with the firm, etc. [26], [40], [91], [92]. These goals are fostered by the desire to preserve SEW. SEW has been shown to have a significant effect on strategic decisions [19], [54], [93]. Furthermore, the literature establishes that the focus on family goals driven by SEW fosters risk aversion, which, in turn, influences family firms' strategic behaviors toward activities, such as BITA [21], [31], [46], which, in turn, can affect firm performance [28], [94], [95], [96], [97].

The salience of family goals in family firms has been widely acknowledged [40], [98]. Consideration for family goals varies across family firms [55], [99]. This is because business families have unique norms and values that influence their intentions toward their firms [100]. Furthermore, family goals are often a manifestation of the values and interests of the dominant decision-making group [34], [101], or those with significant controlling positions [102]. Family goals can, thus, be looked at from two main dimensions, namely business-oriented goals, such as firm survival and environmental sustainability, and family-oriented goals, such as community image and reputation, family legacy, family income, and financial security [51].

In the context of business model innovation, implementing BITA requires changes in the technological infrastructure or technology strategy of the firm. This may result in the withdrawal of certain technologies or necessitate changes in the traditions and culture of the firm. Furthermore, family firm owners and employees have been shown to be emotionally attached to their firms' technologies and traditions. Therefore, significant changes resulting from the implementation of BITA can destabilize the harmony and deeply held traditions as well as risk family members' identification with the firm. Furthermore, family goals are associated with less risk taking in family firms [17]. Therefore, a focus on family goals is more likely to make family firms conservative and risk averse in implementing BITA decisions due to the risk and uncertainty associated with experimenting new technologies, as well as making organizational changes that are needed for BITA to be effectively implemented [7], [21]. Failure of BITA could damage the family firm's reputation as well as bring financial losses or bankruptcy, which implies the loss of SEW associated with firm ownership. Additionally, family firms may not have the technical resources or professionals internally to support a successful implementation of BITA to enhance value capture. Relying on external technical professionals implies that family firms will have to disclose strategic information to these external professionals and allow them to make important strategic decisions, often interpreted as a loss of control over decision making by family firms. The aforementioned arguments suggest that the consideration for family goals in family firms can limit the effective implementation of BITA, and consequently moderate the effect of BITA on performance.

Furthermore, BITA can result in path dependence and rigidity traps that may negatively affect the ability of firms to adapt business models in the future, which can lead to negative consequences on firm performance [13], [15]. BITA is also costly and often involves formalizing processes and customizing IT systems to meet firm-specific needs [7], [10], [103]. This process is time-consuming and can lead to rigid digital infrastructure, which is costly to maintain and update [7], [103]. Updating narrowly customized digital infrastructure is cost-intensive [7]. Meanwhile, family firms may not have the resources to finance these activities [25], [104]. Yet, family firms are widely acknowledged for their hesitance to rely on external finance due to the desire to preserve SEW via ownership and control [105]. This implies that increasing focus on family goals will hinder the proper implementation of BITA, and ultimately stifle the full realization of the anticipated value creation and performance benefits of BITA. Not being able to respond quickly to rapidly changing business conditions as a result of rigidities exacerbated by focus on family goals can affect the capabilities and competitiveness of family firms [35], [106] and, subsequently, affect their performance negatively [40], [107]. Therefore, it is plausible to suggest that the increasing focus of family firms on family goals will negatively moderate the association between BITA and firm performance. Thus, we formulate:

Hypothesis 2: The positive relationship between BITA and performance is weaker in family firms when the focus on family goals increases.

III. METHODS

A. Data Collection

The article uses data from a global survey conducted by the SPGC.¹ SPGC is an independent consortium of Klynveld Peat Marwick Goerdeler (KPMG) and 48 affiliated universities around the world aiming at exploring successful transgenerational entrepreneurship practices of family businesses and leads context-sensitive applied research initiatives every year, with the aim to explore family businesses across generations. We selected this dataset because it allows us to examine firms from a similar cultural milieu because there are cultural similarities among countries in continental Europe than there are to countries from other continents. This is against the background that organizational culture plays an important role in BITA [108]. At the same time, the culture of environment within which a firm is located can shape the organizational culture [12]. We also focus on European family firms because family firms constitute a significant share of the European economy [47]. By focusing on these firms, we are able to show the performance effects of BITA among an important segment of the European economy. While it can be argued that this only offers a European perspective, it nonetheless serves as a basis for capturing the state of BITA among European family firms.

The global survey was launched on September 13, 2021 and completed on November 15, 2021. The questionnaire was first developed in English and then translated into 18 languages. The questionnaire was pretested to minimize consistencies, modify ambiguous and vague questions, and ensure that erroneous indicators were excluded [109]. Respondents included senior family business leaders, such as CEOs, managers, and business owners, who understand the strategic overview and have effective ownership or control over their company. Using a snowball sampling approach, KPMG and SPGC sent the link to the online questionnaire via emails to companies in their databases. SPGC received 2439 responses from family businesses from 70 countries. Furthermore, based on the approach by Armstrong and Overton [110], the SPGC divided the total sample into two equal groups, based on early and late responses and performed an analysis of variance. The results showed that there is no significant difference between early and late respondents. To select the current sample, we only focused on firms from countries in continental Europe that participated in the survey. Therefore, the sample for this current study is 954 representing 39.11% of the total sample from 22 countries in continental Europe (including Eastern Europe and Russia). The 502 (52.6%) of the respondents came from Germany and Spain. The 99 (10.4%) of the firms are in the primary sector, 106 (11.1%) in the wholesale and retail sectors, 316 (33.1%) in the manufacturing sector, and 339 (35.5%) in the service sector. The remaining 94 (9.9%) are in the construction industry, which is used as a baseline of comparison in the analysis.

B. Variables

Dependent variable: Prior studies have relied on self-reported measures of financial performance due to the difficulty of gaining access to financial information of small- and medium-size

private firms who are under no obligation to make such financial information public [111], [112]. It has been shown that subjective measures of performance are highly correlated with objective performance data [113], [114], [115], [116]. Therefore, this study relies on measures from [113], who used seven items to measure financial performance and examine the relationship between innovative capacities and firm performance. This scale captures business owners or managers subjective assessment of the financial performance of the respective firm. Respondents were to indicate whether their current and past performance “were much worse,” “about the same,” or “higher than their competitors” in the following indicators: growth in sales, growth in market share, growth in the employees, growth in profitability, return on total assets, return on equity, and profit margin on sales. A single financial performance score is created using the individual scores with a Cronbach $\alpha = 0.92$ that indicates good overall reliability. The Bartlett test of sphericity showed a p -value equal to 0.00, indicating a good correlation among the items. Furthermore, to ascertain the validity of our measure, we tested for convergent validity, which showed a value of 0.68 (above 0.50) indicating that the items explain sufficient variance in the relevant construct. The test for discriminant validity showed a value of 0.83 (above 0.70) which shows that the items do not overlap with each other and are loaded on a specific construct. Finally, the test for composite reliability showed a value of 0.94 (above 0.70), which is an indication of strong consistency among the items [117].

Independent variable: To measure BITA, this study adopted a prior measure by Li and colleagues in 2021, which consists of four items. Based on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), respondents were asked to rate the degree of strategic alignment between business managers and firms’ digital technology experts’ view on whether business strategy and IT are aligned to create value. Using the individual scores, we created a single score with a Cronbach’s $\alpha = 0.87$ that indicates good overall reliability. The Bartlett test of sphericity showed a p -value equal to 0.00, indicating a good correlation among the items.

Moderating variable: The study uses a measure of *family goals* as the moderating variable. The variable, adapted from [51] and [118], measures how much family goals are delivered by business to the owning families on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) [55]. Using the individual scores, we created a single score with a Cronbach’s $\alpha = 0.86$ that indicates good overall reliability. The Bartlett test of sphericity showed a p -value equal to 0.00, indicating a good correlation among the items.

Control variables: A set of control variables that might affect financial performance in family firms is included. First, family ownership is associated with digitalization and performance [24]. Therefore, *family ownership share* is controlled by using a continuous measure that captures the family’s ownership stake in the business [24]. Following prior studies, respondents were asked to indicate the percentage share of family ownership in their businesses ranging from 0 to 100 (e.g., [119], [120], and [121]). SEW has been shown to influence the financial performance of firms [25]. In view of this, we controlled for SEW using a set of 18 items adopted from [122]. On a five-point Likert

¹<https://spgcfb.org/>

scale ranging from 1 (strongly disagree) to 5 (strongly agree), respondents were asked to indicate the degree to which they agree or disagree a list of statements, as provided in Table I. A single score of SEW is developed from these individual items with Cronbach's $\alpha = 0.88$, where the highest score indicates a high SEW consideration in the business. The Bartlett test of sphericity showed a p -value equal to 0.00, indicating a good correlation among the items. The study also controlled for sales performance where firms were asked to indicate the range of their recent annual sales. We controlled this because sales performance is invariably related to the financial performance of a firm [112]. Furthermore, size and age affect various firm-level outcomes [36]; therefore, the study controls for *firm age* and *firm size*. Firm age is measured as a natural logarithm of the number of years since the firm started operating. Firm size is measured as the natural logarithm of the number of employees. As location and industry of operation affect performance and related outcomes, we follow Issah et al. [48] to introduce two dummy variables (*Germany* and *Spain*) to control for the country-specific effects of the firms in the sample. These two countries are controlled for because they constitute 52.6% (502) of the firms in the sample. Regarding industry controls, the study introduced four dummy variables (*primary, wholesale, and retail, manufacturing, and service* sectors). The variables take the value of 1 for the respective industries and 0 if otherwise. Given that gender, CEOs education affect performance [111], the variable *gender* takes the value of 1 if the CEO identifies as a male and 0 if he/she identifies as a female. The variable *education* represents the highest level of the CEOs educational qualification expressed as a natural logarithm.

Calabrò et al. [92] show the importance of boards, governing bodies, the position of family CEO, and the generation in charge of family firm success. In view of this, the study controls for governance-related variables using dummy variables, which indicate the presence of a *board* of directors and *family council*. The variables take a value of 1 if the business has a board of directors or family council and 0 if not [92] *Family CEO* is a dummy variable, which takes 1 for CEOs who are members of the owning family and 0 if otherwise. The variable *generation* is a dummy variable and takes the value of 1 if the generation in control of the business is the founding generation and 0 if otherwise. CEO experience tends to be associated with performance [111]. Therefore, we control for *CEO experience* using the natural logarithm of the number of years the CEO has worked as a CEO of the family business. Furthermore, the study controls for whether the business is under the influence of *transformational leadership* or *autocratic leadership*. This is because the nature of leadership influences digitalization [123]. To measure transformational leadership, respondents are asked to indicate the leadership style in place, considering six items adopted from [124] based on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). To measure autocratic leadership, respondents are asked to indicate the leadership style in place, considering six items adopted from [125] based on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Using the individual scores, we created a single score each for transformational leadership and autocratic leadership with a Cronbach's $\alpha = 0.85$ each that indicates good overall

reliability. The Bartlett test of sphericity showed a p -value equal to 0.00, indicating a good correlation among the items for each of the variables.

IV. RESULTS

A. Descriptive Statistics

Table II shows the correlations of the variables. To ensure that there is no multicollinearity, the variance inflation factor is computed. The variance inflation factor for the sample is 1.57 which is far below the acceptable threshold of 10 [129]. Table III shows the summary statistics of the variables. The mean of 4.12 shows the level of BITA among the firms in the sample. The statistics also show that firms are able to deliver family goals at an average of 4.06 to firm owners. The mean of the performance shows the average performance of the sample to be 3.54.

B. Common Method Bias (CMB)

Concerns about CMB remain one of the major problems of cross-sectional data that can affect the validity and reliability estimations, and lead to wrong predictions [127]. CMB often occurs in self-reported questionnaire surveys [128]. In view of this, researchers use various methods (e.g., common latent factor, marker variables, and Harman's one factor test) to test for CMB, of which the most common method is "Harman's One Factor Test" [109]. Conducting Harman's one factor allows us to use a powerful statistical technique known as exploratory factor analysis (EFA) to ascertain if CMB is present in the data [129]. In the first step, an EFA is carried out with all indicators [109]. In the second step, the one or first factor rule—whether 50% variance is explained by the first factor—is applied to determine if there is CMB [109]. The basic assumption is that cross-sectional data will be free of CMB threat if the first factor explains less than 50% of the variance. To rule out CMB concerns, the study carries out Harman's single factor test on all the survey items using an unrotated principal component factor analysis computed with the STATA software package. The test shows seven factors with an eigenvalue of more than 1, which account for 66.31% of the total variance. The 22.35% of the variance is explained by the first factor that is less than 50%. Hence, the results imply that the dataset does not suffer from any major CMB concerns.

C. Regression Results

To test the hypotheses, the study employs multiple linear regression models with moderator effects using the bootstrapping approach (i.e., resampling data 1000 times). Bootstrapping has been applied to produce reliable results for the test of moderation [130]. Poi [131] has also shown that the replications of 1000 produce the accurate estimates. Looking at the results of Model 1 ($\beta = 0.18$ and $p < 0.01$) of Table IV, the coefficient is positive and statistically significant at 1%. This means that a unit increase in a firm's BITA will lead to a 0.18 unit increase in a firm's performance. This provides empirical support for hypothesis 1, which predicts that BITA is positively associated with performance. In hypothesis 2, the study predicted a negative moderation effect of family goals on the positive association between BITA and performance. The coefficient of Model 2

TABLE I
DESCRIPTION OF THE MAIN VARIABLES

Variables: Response scales range from 1 (strongly disagree) to 5 (strongly agree)	Properties
BITA	
In the family business, we do the following.	
1) Integrate digital technology and business strategy to attain strategic alignment.	CA = 0.87; VE = 73%
2) Create a shared vision of the role of digital technology in the business strategy.	
3) Jointly plan how digital technology will enable the business strategy.	
4) Confer with each other before making strategic decisions.	
Performance: Scales range from 1 (much worse) to 3 (higher)	
How would you rate your business performance in the last three years compared to that of your competitors in terms of the following?	
1) Growth in sales.	CA = 0.92; VE = 68%
2) Growth in market share.	
3) Growth in number of employees.	
4) Growth in profitability.	
5) Return on equity.	
6) Return on total assets.	
7) Profit margin on sales.	
Family goals	
To what degree does your family business deliver the following for your own family ?	
1) Family loyalty and support to our family business.	CA = 0.86; VE = 74%
2) Family unity.	
3) Development of the next generation's skills.	
4) Develop opportunities for the next generation.	
5) Respected family name in the society.	
6) Customer loyalty to family name.	
7) Good family name reputation in the business community.	
SEW	
Indicate the degree to which you personally agree or disagree with the following statements.	
1) The majority of the shares in my family business are owned by family members.	CA = 0.88; VE = 59%
2) In my family business, family members exert control over the company's strategic decisions.	
3) In my family business, most executive positions are occupied by family members.	
4) In my family business, non-family managers and directors are selected by family members.	
5) The board of directors is composed primarily of family members.	
6) Preservation of family control and independence are important goals for my family business.	
7) Family members have a strong sense of belonging to my family business.	
8) Family members feel that the family business's success is their own success.	
9) My family business has a great deal of personal meaning for family members.	
10) Being a member of the family business helps define who we are.	
11) Family members are proud to tell others that they are a part of the family business.	
12) Customers often associate the family name with the business's products and services.	
13) Emotions and sentiments often affect decision-making processes in my family business.	
14) Protecting the welfare of family members is critical to us.	
15) In my family business, the emotional bonds between family members are very strong.	
16) In my family business, affective considerations are often as important as economic ones.	
17) Strong emotional ties among family members help us maintain a positive self-concept.	
18) In my family business, family members care for each other.	
Transformational leadership	
In your family business you:	
1) Provide an interesting outlook for the future of the family business.	CA = 0.85; VE = 57%
2) Provide a good model for other to follow.	
3) Foster collaboration among work groups.	
4) Show others that you expect a lot from them.	
5) Show respect for the personal feelings of others within the business.	
6) Provide others with new ways of looking at problems.	
Autocratic leadership	
1) Give instructions on how things should get done.	CA = 0.85; VE = 57%
2) Expect your instructions to be followed completely.	
3) Exercise strict discipline over subordinates.	
4) Determine all decisions in the organization irrespective of their importance.	
5) Always have the last say in meetings.	
6) Believe in exhibiting hierarchical behavior among employees.	

Note: CA = Cronbach's alpha; VE = Variance explained.

TABLE II
CORRELATIONS

Variables	1	2	3	4	5	6	7	8	9	10	11	12
1 Financial performance	1.00											
2 Sales performance	0.08	1.00										
3 Family council (<i>d</i>)	0.09	0.10	1.00									
4 Board (<i>d</i>)	0.09	0.10	0.22	1.00								
5 Family ownership	-0.06	0.00	0.03	0.05	1.00							
6 Firm age	0.05	-0.04	0.08	0.10	0.12	1.00						
7 Firm size	0.12	0.17	0.16	0.28	0.09	0.41	1.00					
8 Education	0.02	0.04	0.08	0.12	0.03	0.12	0.13	1.00				
9 Generation (<i>d</i>)	-0.02	0.00	-0.05	-0.10	0.03	-0.51	-0.21	-0.09	1.00			
10 Gender (<i>d</i>)	0.06	0.05	0.02	0.05	0.05	0.08	0.13	-0.07	-0.02	1.00		
11 CEO experience	0.07	0.01	-0.06	-0.08	0.15	0.17	0.04	-0.13	0.04	-0.17	1.00	
12 Germany (<i>d</i>)	-0.08	-0.17	-0.17	-0.51	0.11	0.14	0.03	0.02	0.00	0.00	0.14	1.00
13 Spain (<i>d</i>)	0.05	0.08	0.13	0.14	-0.13	-0.09	-0.10	-0.01	-0.07	0.06	-0.02	-0.36
14 Primary sector (<i>d</i>)	0.00	-0.03	0.04	-0.01	-0.11	-0.01	-0.08	-0.09	0.01	0.04	0.02	-0.13
15 Wholesale and retail (<i>d</i>)	0.07	0.02	0.05	-0.01	0.01	0.05	0.02	-0.08	-0.07	-0.03	0.04	-0.02
16 Manufacturing (<i>d</i>)	-0.02	0.03	-0.05	0.07	0.07	0.18	0.20	0.08	-0.14	-0.08	0.01	0.11
17 Services (<i>d</i>)	-0.03	-0.02	-0.03	-0.02	-0.01	-0.20	-0.16	0.03	0.18	0.07	-0.04	-0.02
18 Family goals	0.18	0.02	0.15	0.04	0.10	0.00	-0.07	-0.05	-0.03	0.04	0.04	-0.04
19 Family CEO (<i>d</i>)	-0.02	-0.10	-0.10	-0.11	0.10	-0.13	-0.19	-0.09	0.19	0.04	0.29	0.04
20 SEW	0.02	-0.05	0.06	-0.06	0.12	-0.09	-0.24	-0.09	0.06	0.07	0.02	-0.01
21 BITA	0.25	-0.03	0.09	0.06	0.06	0.05	0.08	0.04	0.05	0.02	0.05	0.06
22 Transformational leadership	0.18	-0.05	0.07	0.00	0.14	0.02	0.03	0.15	0.02	0.02	0.01	0.15
23 Autocratic leadership	0.09	0.03	-0.05	-0.08	-0.08	-0.13	-0.18	-0.15	0.10	0.01	0.00	-0.05
24 Inverse mills ratio	-0.18	-0.06	-0.20	-0.32	0.18	0.01	-0.22	0.06	0.07	-0.11	0.12	0.37
Variables	13	14	15	16	17	18	19	20	21	22	23	24
13 Spain	1.00											
14 Primary sector	0.06	1.00										
15 Wholesale and retail	-0.01	-0.12	1.00									
16 Manufacturing	-0.06	-0.24	-0.25	1.00								
17 Services	0.02	-0.25	-0.26	-0.52	1.00							
18 Family goals	0.06	0.05	0.00	-0.06	-0.01	1.00						
19 Family CEO	0.05	0.04	0.02	-0.07	0.03	0.05	1.00					
20 SEW	0.12	0.04	0.02	-0.05	-0.01	0.49	0.13	1.00				
21 BITA	-0.03	-0.09	0.02	-0.02	0.07	0.36	-0.06	0.06	1.00			
22 Transformational leadership	0.01	-0.09	-0.04	0.04	0.05	0.32	0.05	0.14	0.41	1.00		
23 Autocratic leadership	0.15	0.07	0.03	-0.04	-0.04	0.12	0.01	0.33	-0.11	-0.02	1.00	
24 Inverse mills ratio	-0.24	-0.35	0.25	-0.07	0.09	-0.71	0.21	-0.11	-0.26	-0.16	-0.04	1.00

Note: BITA = Business IT Alignment.
d = dummy variable.

($\beta = -0.07$ and $p < 0.05$) of Table IV is negative and statistically significant at 5%. This implies that a unit increase in family goals weakens the positive association between BITA and performance by 0.07 units. This also provides empirical support for hypothesis 2.

With regard to our control variables, CEO experience shows a positive and statistically significant relationship with performance in all our models in Table IV. Both transformational leadership and autocratic leadership show a positive association with performance in all models. Overall, this is an indication of the positive role of leadership in firm performance. Firm size shows a positive relationship with performance. However, this is only statistically significant in three models (Models 1, 2, and 5). The other control variables, such as board, firm age, education, generation, and family council, show a positive relationship. However, none of this is statistically significant.

D. Robustness Tests

It is widely accepted that the failure to control for selection may result in specification error, which is considered a form of omitted variable bias [132], [133]. This selection-based endogeneity can take two forms namely, sample-selection and self-selection biases [134]. Sample-selection biases occur when a sample is not representative of the true population and, thus, lead to internal and external validity problems [132]. The present sample consists of European family firms. This may not be representative of all family firms in continental Europe. Self-selection bias may arise as firms self-select into implementing BITA. Therefore, concerns about selection-based endogeneity bias [134] can arise when outcome measures, such as performance, are regressed on firm decisions, such as BITA [132]. These issues further raise internal validity concerns given that

TABLE III
SUMMARY STATISTICS

Variables	Mean	Std. Dev.	Min	Max
Financial performance	3.54	0.72	1.00	5.00
Sales performance	1.19	0.71	0.00	2.08
Family council (<i>d</i>)	0.28	0.45	0.00	1.00
Board (<i>d</i>)	0.56	0.50	0.00	1.00
Family ownership	-0.15	0.52	-4.61	0.00
Firm age	3.74	0.84	0.00	5.40
Firm size	4.30	1.85	0.00	11.29
Education	1.79	0.40	0.00	2.20
Generation (<i>d</i>)	0.35	0.48	0.00	1.00
Gender (<i>d</i>)	0.82	0.39	0.00	1.00
CEO experience	2.43	0.96	0.00	3.99
Germany (<i>d</i>)	0.26	0.44	0.00	1.00
Spain (<i>d</i>)	0.27	0.44	0.00	1.00
Primary sector (<i>d</i>)	0.10	0.31	0.00	1.00
Wholesale and retail (<i>d</i>)	0.11	0.31	0.00	1.00
Manufacturing (<i>d</i>)	0.33	0.47	0.00	1.00
Services (<i>d</i>)	0.36	0.48	0.00	1.00
Family goals	4.06	0.72	1.00	5.00
Family CEO (<i>d</i>)	0.94	0.24	0.00	1.00
SEW	3.87	0.61	1.00	5.00
BITA	4.12	0.76	1.00	5.00
Transformational leadership	4.35	0.62	1.00	5.00
Autocratic leadership	3.13	0.89	1.00	5.00
Inverse mills ratio	0.86	0.14	0.53	1.37

BITA= Business IT Alignment.

d = dummy variable.

the parameters can be significantly biased [135]. To reduce this bias, a variable known as the inverse mills ratio is created. In the first step, an initial probit model is run to capture performance [134], [136]. The generated *inverse mills ratio* is then included in the model to correct for the impact of self-selection bias [135]. The results, as presented in Models 3 and 4 of Table IV, are consistent with the results of Models 1 and 2.

E. Further Robustness Tests

According to the authors in [55] and [137], a family can leverage its ownership or unilateral control to influence family goals. This implies that the increased ownership or control of the business makes it possible for the owning family to pursue specific family goals through the firm [138]. In light of this, the study uses the share of family ownership as an alternative proxy for family goals. First, regarding the bootstrapping approach, the result of the moderation effect presented by Model 5 is consistent with the main result of Model 2. Second, regarding the model using the inverse mills ratio, the result of the moderation effect,

as presented by Model 6, is also consistent with the result of Model 4.

V. DISCUSSION AND CONCLUSION

A. Discussion

This article investigates the association between BITA and performance and how family goals influence this relationship in family firms. First, the study finds empirical support for the prediction that BITA within family firms is positively associated with performance. While this finding is specific to family firms, it is nonetheless in line with prior findings that have shown a positive effect of BITA on performance [7], [10], [139]. First, it is plausible to attribute the performance effects of BITA to the pro-organizational behavior and support for organizational changes or firm renewal initiatives that tend to be exhibited by employees due to the employee-friendly policies of family firms [49]. BITA involves organizational changes in routines and value-creation processes within the firm [4]. These changes are less likely to be resisted by employees due to the sense

TABLE IV
 MULTIPLE REGRESSION RESULTS SHOWING THE ASSOCIATION BETWEEN DIGITAL TECHNOLOGY–BUSINESS STRATEGIC ALIGNMENT AND PERFORMANCE IN
 FAMILY FIRMS

Variables	Main results		Endogeneity tests)		Further robustness tests	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Inverse mill ratio			-1.00 (4.47)	0.84 (4.53)		-1.74 (4.47)
Sales performance	0.05 (0.03)	0.05 (0.03)	0.06 (0.07)	0.04 (0.07)	0.04 (0.03)	0.07 (0.07)
Family council (<i>d</i>)	0.05 (0.05)	0.05 (0.05)	0.05 (0.05)	0.04 (0.05)	0.05 (0.05)	0.06 (0.05)
Board (<i>d</i>)	0.02 (0.06)	0.04 (0.06)	0.01 (0.10)	0.05 (0.10)	0.03 (0.06)	0.00 (0.10)
Firm age	0.00 (0.03)	0.00 (0.03)	0.02 (0.07)	-0.01 (0.07)	-0.00 (0.03)	0.02 (0.07)
Firm size	0.04** (0.01)	0.04** (0.02)	0.02 (0.09)	0.05 (0.09)	0.04*** (0.02)	0.00 (0.09)
Education	0.03 (0.06)	0.02 (0.06)	0.05 (0.12)	0.00 (0.12)	0.01 (0.06)	0.05 (0.12)
Generation (<i>d</i>)	-0.01 (0.06)	-0.01 (0.06)	-0.02 (0.07)	0.00 (0.07)	-0.01 (0.06)	-0.02 (0.07)
Gender (<i>d</i>)	0.08 (0.06)	0.08 (0.06)	0.11 (0.17)	0.05 (0.17)	0.07 (0.06)	0.14 (0.17)
CEO experience	0.06** (0.03)	0.06** (0.03)	0.06** (0.03)	0.05* (0.03)	0.06** (0.03)	0.06** (0.03)
Germany (<i>d</i>)	-0.12* (0.07)	-0.12* (0.07)	-0.05 (0.32)	-0.18 (0.32)	-0.12* (0.07)	0.00 (0.32)
Spain (<i>d</i>)	0.00 (0.05)	0.00 (0.06)	-0.03 (0.18)	0.03 (0.18)	-0.00 (0.06)	-0.07 (0.18)
Primary sector (<i>d</i>)	-0.04 (0.09)	-0.03 (0.09)	-0.20 (0.71)	0.10 (0.72)	-0.02 (0.09)	-0.29 (0.71)
Wholesale and retail (<i>d</i>)	0.09 (0.09)	0.09 (0.09)	0.14 (0.25)	0.04 (0.25)	0.09 (0.09)	0.18 (0.25)
Manufacturing (<i>d</i>)	-0.06 (0.08)	-0.06 (0.08)	-0.13 (0.31)	-0.00 (0.31)	-0.06 (0.08)	-0.17 (0.31)
Services (<i>d</i>)	-0.06 (0.07)	-0.06 (0.07)	-0.09 (0.15)	-0.03 (0.16)	-0.06 (0.07)	-0.11 (0.15)
Transformational leadership	0.12** (0.05)	0.11** (0.05)	0.12*** (0.04)	0.11*** (0.04)	0.12** (0.05)	0.12*** (0.04)
Autocratic leadership	0.10*** (0.03)	0.10*** (0.03)	0.10*** (0.03)	0.10*** (0.03)	0.09*** (0.03)	0.09*** (0.03)
Family member CEO (<i>d</i>)	0.01 (0.11)	0.01 (0.11)	0.11 (0.46)	-0.07 (0.47)	0.02 (0.11)	0.20 (0.46)
SEW	-0.07 (0.05)	-0.07 (0.05)	-0.02 (0.23)	-0.11 (0.23)	-0.07 (0.05)	0.02 (0.23)
Family ownership	-0.13*** (0.04)	-0.14*** (0.03)	-0.08 (0.20)	-0.17 (0.20)	0.38 (0.25)	0.46 (0.31)
Family goals	0.09** (0.04)	0.38*** (0.14)	-0.07 (0.71)	0.52 (0.76)	0.09** (0.04)	-0.19 (0.71)
BITA	0.18*** (0.04)	0.45*** (0.14)	0.18*** (0.03)	0.46*** (0.13)	0.16*** (0.04)	0.16*** (0.04)
BITA*family goals		-0.07** (0.04)		-0.07** (0.03)		
BITA*family ownership					-0.13** (0.06)	-0.13** (0.06)
_cons	1.40*** (0.32)	0.33 (0.62)	2.60 (5.39)	-0.70 (5.56)	1.59*** (3.33)	3.68 (5.39)
N	954	954	954	954	954	954
R2	0.14	0.14	0.14	0.14	0.14	0.14

BITA = Business IT Alignment.

d = dummy variable; standard errors in parentheses.

p* < 0.10. *p* < 0.05. ****p* < 0.01.

of obligation to support organizational policies (BITA) as a way of reciprocating the support provided by family firms. The pro-organizational behavior can, thus, foster the proper functioning of BITA and lead to an increase in performance. Second, the positive effect of BITA can also be attributed to the owner–manager monitoring effect in family firms [29]. As owners and managers, family firm owners have been shown to effectively monitor the implementation of initiatives and are, thus, able to convert less R&D investment into more innovation output [80]. Therefore, it is plausible to suggest that family firms are better at implementing and monitoring BITA, which consequently translates into to increase in firm performance. Third, the long-term horizon of family firms may also account for the performance effects of BITA. The long-term view allows family firms to employ patient capital in their investment and implementation of BITA with the expectation to reap the fruits in the long term, like many firm renewal initiatives.

Furthermore, the moderation effect indicates the conditions under which the relationship between BITA and performance becomes negative. In this instance, the study finds that prioritizing family goals weakens the positive association between BITA and performance. This is also in consonance with the strand of research that has shown that, under certain IT governance mechanisms, there is a negative effect of BITA on performance [6], [13], [15], [64]. We explain the negative effect in two ways. First, a focus on family goals signifies the importance of SEW, which, in turn, heightens the risk aversion of family firms aimed at preserving the SEW [19]. To achieve this, family firms become more cautious and avoid potentially profitable but highly uncertain changes in their implementation of BITA, thus leading to a negative performance outcome. Second, the focus on family goals also brings to the fore the role of tradition in the BITA strategy of family firms [140]. The notion of family firms’ attachment to traditions, firm technologies, products, and routines is in sharp contrast to the proper implementation of BITA. The focus on family goals may heighten the challenges associated with realizing an effective implementation of BITA, which, in turn, can undermine how BITA contributes to performance.

Similar to Gerow et al.’s article [7], the main result of the study indicates that there is really no alignment paradox. Perhaps, this can be attributed to the type of firms the make up the sample in the study, e.g., family firms. Perhaps, examining the effect of BITA on performance in the context of family firms is still nascent and far from consensus. However, the result of the negative moderating effect of family goals might be an indication of an alignment paradox. The peculiarities of family firms, such as the consideration of family goals [55], may be the reason for the existence of the alignment paradox [10]. This is because the consideration of family goals tends to shift the focus of family firms toward nonfinancial goals, such as family unity, family reputation in society, and dynastic succession goals [40], [91]. It is, thus, plausible to suggest that the notion of alignment paradox in family firms is conditional on the role of family goals in the BITA implementation horizon, which is an aspect of SEW.

Our analysis also brings to the fore the role and nature of leadership in digital transformation initiatives and their impact on performance particularly among small- and medium-scale

enterprises (SMEs) [123], [141]. This also raises important questions about the role and nature of leadership in SMEs and large firms regarding the effect of BITA and capabilities on performance outcomes [36], especially when ownership is in the hands of a family [24], [35]. Furthermore, large firms may produce different performance outcomes, owing to their predisposition to rigidity and inertia in achieving BITA [15].

B. Contributions to Research

This study makes three important contributions to the literature on BITA and family business strategy. First, this is the first study that addresses the important issue of BITA on firm performance in family firms. By leveraging the context of family firms, the study reveals the positive performance effects associated with BITA in family firms. In this light, the study contributes to the ongoing discussion about whether or not there is an alignment paradox by revealing that family firms, by their nature, are more suited to take the advantage of BITA. In doing this, the study shows that by providing job security as well as the environment for consultation and exchange of ideas between owner–managers and IT employees or experts through the pursuit of care-oriented policies, family firms position themselves much better to maximize the performance benefits of BITA.

Second, the study also contributes to the family business literature by showing that an increasing focus on family goals compromises financial performance associated with BITA in family firms. By leveraging the heterogeneity of family firms in terms of consideration for family goals, the study reveals that nonfinancial goals are the key drivers of family firms’ digital strategy. It also shows the extent to which family firms are prepared to meet these nonfinancial family goals even in the context of important policy decisions, such as BITA. This suggests that family firms place a higher weight on meeting family goals in their strategic decision-making processes [54], even though digitalization has been widely accepted as an important driver of success in family firms [35].

Third, this study contributes to the business model innovation literature by showing that BITA is an important antecedent of the process of ensuring nontrivial changes to business processes, value creation, and capture in family firms [56].

Fourth, this study advances the primary literature on how European family businesses digitalization facilitates firm’s performance among European family firms [47]. In doing so, this study used a large sample of 954 European family firms to solve the paradox tension in family business concerning digital strategy, family goals, and performance.

C. Managerial Implications

The present study has useful implications for managerial practice. The study shows that even though digitalization is important for family firms’ growth, achieving a balance between nonfinancial and financial goals in family firms appears to be tilted against financial performance goals. This is perhaps an indication that nonfamily digital technology experts of family firms should take note that family firms are often not interested in growth in financial performance when they pursue BITA.

Knowing this might moderate the expectations of external digital technology experts or employees in their quest to advise family firm owners and managers. In other words, when the goal of the business is to sustain profitability via digitalization, family businesses should reduce the focus on achieving nonfinancial family goals and prioritize financial goals. This is because a high desire for family goals can cause poor financial performance, even if they have digital technology–business strategic alignment.

D. Limitations and Future Research

This study is not free of limitations. For instance, this study focuses on only family firms. It does not compare the performance effects of BITA between family and nonfamily firms. Thus, the study misses out on elucidating how the focus on family goals differentiates the behavior and financial performance between family and nonfamily firms. Future studies should extend this by using a broader sample of family and nonfamily firms to make a comparative analysis.

Also, this research sampled only European family firms and recommends that future researchers should focus on other regions, such as Asia, and undertake cross-regional comparisons to provide a better understanding of how cultural diversity and institutional differences may influence the effect of family goals on the relationship between BITA and performance.

Furthermore, although we controlled for levels of family ownership, generation in control, age of firms, firm size, and industries of operation in order to capture family firm heterogeneity, we did not distinguish between micro-, small-, and medium-size firms. Future studies may, thus, examine this, as firm size and behavior may elicit different performance outcomes in the context of BITA.

To mitigate the chances of spurious results and CMB, future research may employ qualitative techniques that allow for an in-depth analysis of family firms' BITA implementation processes and how that impact firm performance.

E. Conclusion

The aim of this article was to investigate the performance effects of BITA in family firms, considering the moderating role of family goals. In this article, we used a survey-based dataset of 954 European family firms and revealed that BITA positively contributes to firm performance, while this relationship is negatively moderated when they pursue family goals. By invoking the context of family firms, this study is the first to examine this rather technical question of BITA.

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