
articles

SME Family Firms and Strategic Digital Transformation: Inverting Dualisms Related to Overconfidence and Centralization

Ricarda Bouncken¹ ^a, Florian Schmitt¹ ^b

¹ Strategic Management and Organization, University of Bayreuth

Keywords: SME, family firm, digitalization strategy, digital transformation, familiness, centralization

<https://doi.org/10.53703/001c.35278>

Journal of Small Business Strategy

Vol. 32, Issue 3, 2022

The high uncertainties, investments, and demands related to digital transformation are especially crucial for resource constraint small and medium sized family firms. Our qualitative case study resonates with previous research, finding that such firms show low levels of strategizing and a pragmatic-incremental approach to digital transformation, often hindered by their traditionalism. In addition, we reveal that small and medium sized family firms tend to follow a reactive digital transformation. A reactivity trap appears when they operate in strongly regulated industries that demand extensive attention on such institutionalized pressures. Additionally, we draw attention to two inverting dualisms. First, strong top management centralization which is most detrimental to digital transformation as it is accompanied by low digital competence of managers. Second, manager's overconfidence about their competitive positioning and concurrently discounting and frightening digitalization. In theorizing our findings, we provide propositions and a process model. In the realm of practical implementations, our study suggests digital maturity models for identifying the (relational) status quo of the SME's digitalization.

Introduction

A firm's digital transformation with its high uncertainties, investments, and significance calls for strategic considerations, for example, about the substitution or extension of traditional business models with digital ones (Frankenberger et al., 2020), prioritizing digital processes and technologies, and the digital transformation implementation (Wirtz, 2019). Although the literature is strongly expanding on digital transformation and its challenges (Fauzi & Sheng, 2020; Ribeiro-Navarrete et al., 2021), there is scant research on its strategic considerations, especially for resource constraint small and medium firms (Bettinelli et al., 2021) and family firms in which family values might be put at risk through a digital transformation (Kraus et al., 2022).

Common knowledge to family firm research is that family firms are strongly affected by their familiness and values (Chrisman et al., 2021; Lohwasser et al., 2022), so they are often hesitant of formal strategic planning while operating based on agility and pragmatism (Soluk et al., 2021). These specifics become even more critical when family firms are

operating as small and medium-sized enterprises (SMEs), which are typically more resource constrained, affected by uncertainty (Matthews & Scott, 1995), but operate more agile, with greater pragmatism than large firms (Ahmadi et al., 2021; Scuotto et al., 2021). The few studies on SME family firms showed deficits residing in a programmatic support (Miller & Le Breton-Miller, 2021). Considering the high importance and risks related to digital transformation (Fauzi & Sheng, 2020; Garzella et al., 2020), it is essential to understand if and how family firm SMEs strategically address digital transformation.

Hence, the purpose of our research is to explore digital transformation strategizing of family firm SMEs. For answering our explorative research question, we apply a multiple case study method. Our sample contains eight cases with nineteen interviews. Data collection had taken place between 2019 and 2021. Interview data were supplemented with secondary data (i.e., annual reports, narratives from websites, and internal documents such as presentations, strategy papers, and others). Our exploratory study finds little attention to a digitization strategy formulation and implementation. Managers rationalize that their scarce re-

^a Prieserstraße 2, 95444 Bayreuth, Germany
Phone: +49(0)921 5548-41, Email: bouncken@uni-bayreuth.de

^b Prieserstraße 2, 95444 Bayreuth, Germany
Phone: +41 79 30 60 003, Email: florian.schmitt@uni-bayreuth.de

sources render strategy formulation and implementation is not viable. Scarce resources pertain to human resources, in particular employee digital qualifications and to financial and technological limitations. Interestingly, the recently increasing regulatory requirements, such as data protection and certifications demand overly attention and resources, often at the expense of a digital transformation strategy. When present, strategy formulation and implementation is centralized on top managers. Consequently, the SME family firms largely disdain bottom-up impulses and integration support from lower-level employees. We theorize about two inverting dualisms: First, managers convey little digital technology expertise, but still operate on strong top-management centralization, thus further ignoring potentially available expertise. Second, managers feel overconfident about managing their market niche without needing to attribute time and resources to a digital transformation strategy while they also are terrified because of the increasing regulatory and digitalization demands from external audiences. Further we develop propositions and a process model of digital strategizing. In the realm of practical implementations, our study suggests digital maturity models for identifying the (relational) status quo of the SME's digitalization.

Our study contributes to the still scant research about strategic aspects of the digital transformation in SME family firms (Ceipek et al., 2021; Pesch et al., 2021a; Soluk et al., 2021). To the scant family firm and SME digitalization literature (Bonk, 1996; Filser et al., 2018), we contribute specific insights while suggesting two important dualisms. Furthermore, we introduce digital maturity models (Westerman & McAfee, 2012) to digitalization research and practice in SME and family firms. In this, we contribute mechanisms and formal approaches to the SME and family firm digitalization research (Pesch et al., 2021a; Soluk et al., 2021).

THEORETICAL BACKGROUND

Digital Transformation as a Strategic Endeavor

Digital transformation is defined as the continuously increasing implementation of digital technologies (social media, mobile, analytics, or embedded devices) for new business models and efficiency improvement (Kane et al., 2018), while permitting flexible and faster production (Fitzgerald et al., 2014; Matt et al., 2015; Nambisan et al., 2017). Digital transformation includes a variety of digital technologies that are embedded in different combinations of information, computing, communication, and connectivity technologies or enabled by those (Bouncken et al., 2021).

Argarwal, Johnson, and Lucas (2011) attribute the following characteristics to digital transformation: (i) it fundamentally alters traditional ways of business by redefining business capabilities and/or (internal or external) business processes and relationships; (ii) it potentially involves strategic acquisitions to acquire new capabilities or to enter a new market space; (iii) it exemplifies the use of IT to dramatically change how tasks are carried out, it enables the firm to operate in different markets, serve different cus-

tomers and might allow a competitive advantage by doing things differently. The often comprehensive, complex, holistic, and long-term character of the digital transformation distinguishes it from typical improvement (Bouncken & Barwinski, 2021). Digital transformation might relate to incremental changes but to radical and wide ranging changes that demand interdisciplinary interactions and behavioral changes (Wessel et al., 2021). The digital transformation affects large parts of the firm and may cross horizontal and vertical organizational boundaries (Bouncken & Kraus, 2021). It has strong strategic effects related to products, business processes, sales channels, and supply chains (Wessel et al., 2021).

The importance of strategically managing the digital transformation is supported by the finding that digitally mature companies that have strategically led their digitalization outperform their industry peers up to 26% (Westerman & McAfee, 2012). The former explanations emphasize that the digital transformation is a strategic endeavor and that the digital transformation strategy has a greater impact than an IT strategy (Matt et al., 2015). Yet, strategic considerations are scarce. An exception is Pesch et al. (2021a) who reveal that digital product innovation demands a combination of formal and informal planning models.

SME Family Firms and Strategic Endeavors

Researchers increasingly became interested in family firms (Arregle et al., 2019), which can be characterized by the dominance of ownership in the hands of the family (Chua et al., 1999). Family firms are "influenced by the family vision that is oriented to trans-generational pursuance and controlled by a familial dominant coalition" (Cassia et al., 2012) so that firms' goals highly depend on the family's interests and needs (Bouncken et al., 2020). The family firm is seen as an extension of the family's identity, so that strategic decisions and actions, which can threaten the family's identity may be avoided (Gomez-Mejia et al., 2007). Family leaders may even prioritize non-economic goals (e.g., the family's control over the business, the protection of family members' employment, and the family dynasty; Chrisman et al., 2010) over economic goals (e.g., wealth generation for shareholders, superior performance of the business; Lim et al., 2010; Lin & Hu, 2007). Family firms can be owner-run or manager-run but control over the business lies in the family/families, who typically aim to pass the firm to the next generation. As family firms often consider both family firm and business issues synchronously, strategic decisions of family firms can be particularly complex compared to non-family firms, which place more emphasis on economic goals (Stanley & McDowell, 2014). The family exerts substantial influence on the firm and significantly affects the firm's strategic orientation (Le Breton-Miller & Miller, 2006) or its strategic renewal. The family's control can be a source of competitive advantage in the form of stability because family relations bind generations in favor of long term positive returns for the business and the family (Sirmon & Hitt, 2003).

Habitual family procedures and the family firm legacy can enact strong impediments in family firms when they

are aiming to introduce new ideas and strategies (Bertrand & Schoar, 2006; Leonard-Barton, 1992). As the family firm is seen as an extension of the family's identity, strategic decisions and actions that might threaten the family's identity (Gomez-Mejia et al., 2007) will be avoided. Further, family members' wealth concentrated in a firm increases their sensitivity to uncertainty and investments (e.g., Bianco et al., 2013; Gómez-Mejía et al., 2007). The lack of separation between ownership and control coincides with high risk aversion (e.g., Fernandez & Nieto, 2006; McConaughy et al., 2001; Mishra & McConaughy, 1999; Thomsen & Pedersen, 2000). Family firms are mostly portrayed as risk averse (Naldi et al., 2007), Nordquist, Sjöberg, & Wiklund, 2007) so may lead to inferior investments in strategic renewal (Le Breton-Miller & Miller, 2009) and resistance to change (Gómez-Mejía et al., 2010).

Some studies state that family firms are reluctant to strategic change (Lubatkin et al., 2007; Schulze et al., 2003) and are less innovative compared to non-family firms (De Massis et al., 2013). In particular, family firms' specifics, i.e., long-term orientation, their internal and external social capital, their conservativeness, and human resource base account for family firms' lower openness towards innovation activities and output (De Massis et al., 2013). Family firms can place less emphasis on radical (De Massis et al., 2015; Nieto et al., 2015) and technological innovations (Morck et al., 2000) and innovate incrementally and more managerially. Yet, Craig & Dibrell (2006), Craig & Moores (2006), and Naldi et al. (2007), and Llach & Nordquist (2010) show that family firms are more innovative than nonfamily enterprises. Bergfeld and Weber (2011) demonstrate that family firm owning families are the driving force to initiate radical innovations and corporate renewal. Yet, some studies reveal that family firms and non-family firms, compared by R&D spending as a proxy for innovation, did not show any significant differences (Miller et al., 2008). The positive view on radical innovation in family firms is supported by a meta-analysis by Duran, Kammerlander, Essen, and Zellweger (2016) which shows that family firms invest less in innovation but have an increased conversion rate of innovation input into output and, thus a higher innovation output than non-family firms.

Zooming in on Strategic Digital Transformation

Considering the former arguments, we deduce that the digital transformation demands a strategic approach, which might be particularly important for family firm SMEs (Clauss et al., 2020), because the digital transformation puts the family firm's wealth at risk and because their resources are strongly limited. Especially, the embeddedness of the family in the family firm management or control units might complicate the development of a digital transformation strategy. Furthermore, family firms with their stronger pragmatism and agility might be hesitant in developing and sticking to a formal digital transformation strategy and rather decide incrementally, spontaneously, and pragmatically. Family firms, knowing that they will not stick to the strategy anyway might be also more skeptical in

developing a digital transformation strategy, because they believe that such efforts are only sunk costs. Digital transformation and innovation have greater overlaps (Appio et al., 2021). Hence, digital transformation is confronted by the opposing results on family firm innovativeness in previous research (Nieto et al., 2015; Soluk et al., 2021).

Accordingly, family firms can find it difficult to escape their path dependencies and rigidities. In addition, digital transformation is often about incremental innovation (De Massis et al., 2015). As such, family firms might be in a good position for the incremental changes of digital transformation that might be less subject to a formal strategy process. Just recently, an explicit digital strategy has been shown influential for digital transformation (Frankenberger & Stam, 2020). Yet, the formal strategy process might limit the agility of a family firm. For ensuring flexible reaction, family firms can establish an agile environment that allows to secure and develop the necessary willingness to take risks (Ahmadi et al., 2021; Khanin et al., 2020). Previous studies reveal a staged character of the digital transformation of the German family owned Mittelstand firms and see that the limitations of radical innovation family firms do not occur to digital business model innovation (Soluk et al., 2021). These contradicting arguments nuance the question how family firms pursue digital transformation strategies and how they tackle the embedded digital innovation? The current research tackles this question by an explorative methodology.

METHOD

For understanding the strategic considerations of digital transformation and the embedded digital innovation in SME family firms, we apply an inductive research methodology (Corbin & Strauss, 1990). Our rationale is that, first, digital transformation in family firm is still an emerging phenomenon for which in-depth interviews are a promising source of data for explorative studies (Strauss & Corbin, 1998). Second, we aimed to understand the interpretational processes and contextualization's family firms. Interviews provide the opportunity for respondents to speak at length, lead to spontaneous discussions and instant feedback on the emerging issues (Eisenhardt, 1989; Neergaard & Ulhøi, 2007).

We conducted semi-structured interviews with nineteen managers from eight family firm SMEs. Following purposeful sampling approach, we selected typical cases of SME family firms so applying a multiple case study method (Eisenhardt & Graebner, 2007; Yin, 2009). Consistent with the theoretical Mittelstand firm definition of companies (Block & Spiegel, 2011; Filser et al., 2018; Massis et al., 2021), we relied on the following sampling criteria: (1) a privately owned, medium-sized firm, (2) a substantial family influence (operationalized as 100% ownership in the hands of the family), and (3) a self-conception as a Mittelstand firm. All firms are located in Germany, the Principality of Liechtenstein, or Switzerland, which are central European countries that are similar in terms of economics, culture, language, and business practices. [Table 1](#) provides anonymized information on the interviews.

Table 1. Interviewees, their roles and professional background.

Interview	Role	Professional background	Duration
1	CEO	M. Eng. IT	64
2	Chairman Board of Directors	PhD. Biochemistry	39
3	Senior Manager Project Management	Apprenticeship machine tool operator, specialization turning	41
4	CTO/CSO	not available	48
5	Head of Controlling & Finance	MBA Finance	40
6	Teamleader Quality Assurance	Apprenticeship quality management	33
7	Chairman Board of Directors	Medical Doctor	47
8	HR Head	M. Physics	46
9	IT Head	M. Software Engineering	75
10	Field Sales Engineer	Apprenticeship lab technician	38
11	Executive Assistant	Apprenticeship professional assistant	48
12	Chief Medical Officer	Medical Doctor	30
14	Director Operations	M. Eng. , MBA	30
15	Founder & CEO	Medical Doctor	34
16	General Manager	Architect	33
17	Founder	not available	36
18	Board Member	M. Eng. Electrical	59
19	Senior HR Manager	M. Physics	58

The eight SME family firms are located within the DACH region. Seven of our cases were SME family businesses. We conducted the interviews in person and via online video interviews. The interviews took a minimum of 30 minutes and a maximum of 75 minutes and were audio-recorded with the informant's consent and transcribed verbatim for qualitative analysis. Our analysis was iterative, and data collection and analysis were simultaneous processes as common in inductive research (Myers, 2009). We followed Eisenhardt's (1989) recommendation and continued the data collection process until we reached the saturation point and further interviews were not giving any additional insights. We applied the grounded theory approach to analyze the interviews (Corbin & Strauss, 1990; Glaser & Strauss, 1967).

Case company, A, a provider of specialized software for ear, nose, and throat physicians is a born-digital company. The founder and CEO has a technological academic background and a very sound understanding of digitalization technology. Besides the technology expertise of the CEO, the company is focused on agility and responsivity to market requirements. Firm A is a global leader in its market niche. The majority of the thirty employees have a professional background in software engineering. Only lately, the digital strategy was initiated for the development of the application for public funding and medical technology certificates.

Case B, a Swiss manufacturer of precision components specializes in the medical device industry. It operates globally. Digitalization topics yield on efficiency increases and new high-tech machining. Over the course of changes owner structure from family business to a public listed

company digitalization efforts were embraced by the CEO (non-family member).

Case C, a medical laboratory in the Principality of Liechtenstein exists since 1970. It is led by the 2nd founder generation. Recently, over the Covid-19 pandemic, C faced demands from the market and customer side for providing test results within a short time, which demanded new channels using new technologies. Furthermore, the company was struggling with integration efforts due to intensive acquisition activities over the past years. The highly automated lab technology shows a high maturity in digitalization whereas corporate functions while strategic planning and digital identity are strongly lagging.

Case D is a manufacturer of medical devices in Switzerland. D has been ignoring digitalization largely. This was because resources were focused on fulfilling market needs and regulatory requirements. Furthermore, they followed a risk-averse investment strategy.

Case E as another manufacturer of medical devices is run by its founder. For gaining market share and initiating strong sales growth, E recently started a multi-partner alliance with external partners and investors in the form of a business ecosystem. Although the business ecosystem has been progressing successfully, the founder's skepticism of losing control is increasingly severe.

Case F, a furniture architect company had to quickly react to changing market developments and rearrange their business model. F redefined their unique selling proposition and customer benefit by integrating digital sales channels and technologies into their new business model. F is led by its founders and is located in Germany. Case G, a founder run an HR consulting industry in Germany deliber-

ately defined its hybrid business model as with digital aspects and classic analog components.

Case H employs over 30'000 employees. Its headquarter is in Liechtenstein. It is family owned since the 1940s and is the global leader in building and construction technology. It was integrated into the sample to sharpen the view on potential differences between SME family firms and non-SME family firms. The company, although operating in the traditional and slow-moving industry they have actively included digital aspects for ten years in all areas of the company.

QUALITATIVE RESULTS

We categorize findings of our case study into three groups. (A) The *perceived sense of urgency* for the digital transformation in SME family firms. (B) The *digital transformation strategy and -process*. (C) *Constraints for strategic SME family firm digital transformation endeavors*.

(A) The *perceived sense of urgency* for the digital transformation in SME family businesses.

All interviews revealed that SME family firms' managers perceive an increasing sense of urgency for the digital transformation. Nonetheless, there are differences in the intensity of perceived urgency. The reactions to this are also strongly heterogeneous. Some managers perceive a tacit sense of urgency in digital transformation strategy. The main drivers of the urgency reside in increasing pressures from their embedding in a business ecosystem. The Head of Operations of a Medtech company, case D, describes the pressure on digital transformation:

"You can decide not to do it. It doesn't mean that a meteorite is going to fall down on you now and you're going to drop dead immediately, but you're going to lose business advantage. The others will overtake you. They're going to be closer to the customer, they're going to be more agile, and they're going to be faster and cheaper because they're using this technology. That means it's going to evolve there, and those who don't play there - whether slower or faster, will probably have to die out at some point. I don't know. Sometimes there are retro movements, where it's stylish to do something old, but on the whole I think that has to come"

This perspective is widely shared throughout the analyzed cases, The CEO of a medical lab case C, confirms, very pronounced:

"If you don't do anything, you just fall out. Certain [digitalized] things are just standard."

The family firm SME focuses on operational efficiency and quick adaptations in an agile way rather than on long term or wide ranging strategic potentials. Operational efficiency is pursued in logistics, products, processes, and IT adaptations. Case B exclusively focuses on digital initiatives pursuing efficiency improvements in the production environment. Case A, a born digital company, also focuses on improving the efficiency of processes through digitization. These short-term gains are directed ad-hoc and not orchestrated by or embedded in a strategy. Case E

describes the importance of logistics speed for their digitalization activities. Further, they initiated a new partnership with an external online distribution platform. Managers are very skeptical about control loss when they include external partners for digitalization. These might set external control by investors and dependency creating external partners. Case F is feeling high pressure from the market side for an adjustment of value propositions by digitalization. Market and customers are forcing a realignment of the product portfolio.

"Our competence used to be to first whet his appetite [interest] and open up the market to him [customer] and show him what's available. But on the one hand, we have lost our competence... um...lost a bit, because nowadays everyone can inform themselves on the Internet via all kinds of portals and advise themselves - in quotation marks - via architecture, for example, where you can see almost all the furniture we have... to see in the net. So, he no longer has to go downtown, he no longer has to... to look around in a furniture store and somehow... to form a taste but he can already surf the Internet and look"

A deliberate and conscious decision to focus on non-digital areas as part of the business model was also mentioned.

"Digital is extremely important for us, but not part of our business model, of course, part of our approach, our administration, all that, but in terms of customer process, we deliberately focus on the opposite pole"

A member of the executive board of an FF is convinced that digital transformation affects the entire company, where initiatives and programs are driven top down.

"...in our understanding, this [digital transformation] is an issue that affects the entire company and we do [...] believe that everyone in the company, all areas, all individuals, should actually drive this forward as far as it is naturally relevant, and that is why we want it to be anchored very broadly in the company"

Compared to SME family firms, case H is a large family firm where digital transformation has become normal.

"This is not something new in the sense that has now become irrelevant only recently, but we have been dealing with the issue for quite some time."

Commonly, top management in SME FF realizes a severe urgency for digital transformation, but they do not tackle these in a strategic approach. Strategic instruments and formal strategizing are underdeveloped. If existent at all, strategy formulation and implementation for digitization is centered on the top management and is following a top-down implementation approach. We could hardly detect transparency of the strategy process and outcomes or employee involvement.

This might be a result of the overconfidence of family firms' top management and the perception of a superior niche market position. One founder and executive manager of a case rated the digital readiness/maturity of their customers at a maximum of three on a five-point scale. Therefore he sees no hustle to upgrade and overstrain customers.

Table 2. Overview of cases.

Case	A	B	C	D	E	F	G	H
Industry	Medical software	Precision components for Medtech	Medical Laboratory	Medical Devices	Medical Devices	Architects	HR Consulting	Construction Industry
Digitalization sponsor	Founder	CEO	CEO	CEO	Founder	Founder	Founder	Board
Family Member	YES	NO	YES	NO	YES	YES	YES	NO
Digital Strategy	Emerging	none	In creation	none	Emerging	Deliberate	Deliberate	Integrative in corporate strategy
Transparency of strategy	sub conscious	not shared	sub conscious	not shared	transparent	transparent	sub conscious	transparent
Employees	30	240	600	85	4	11	10	30000
Founded	2004	1964	1970	1997	2201	2006	2015	1941
Country	Liechtenstein	Switzerland	Liechtenstein	Switzerland	Germany	Germany	Germany	Liechtenstein

“But I also have to say that we are active in an area (let’s say medicine and hospitals) that is also a bit more conservative. So we can’t come up with the latest technology now, because the customers wouldn’t be ready for that. So if I have the innovation now on a 5 series, then I would now work with AI and such tools. The customers wouldn’t be ready for that. Our market would not be ready for a 5.”

Furthermore, other interviewed top managers from SME family firms showed confidence regarding their progress in digitalization. Asked about individual digital capabilities and affinity all interview partners stated a high personal degree of self-identification and a solid digital skillset.

“I am a user. But I see what it takes and have the perspective of the simple user. And but am nimble when it comes to seeing solutions.”

“I think I bring quite a lot of skills with me.”

(B) The digital transformation strategy and -process.

Although the sense of urgency is evolving, the strategic processes lag behind. Only one of the analyzed cases had an explicit strategy for the digital transformation, including one described strategy process. Nevertheless, SME family firms do have digitalization topics on their strategic agendas. Compared to large companies having a strong focus on deliberate strategy processes (Bouncken et al., 2015), SME family firms’ digital strategies have an emerging character, evolving stepwise. Furthermore, digitalization might be integrated into the planning of products, processes, or IT. Our cases also reveal that digitalization is not separated as a distinct subject of strategizing. As the digital strategy is not espoused and appears somewhat subconsciously, family firm SMEs might oversee important risk factors, chances, or strategic actions. Interestingly, the CEO of Case A is aware of differences of the family firm compared to large companies:

“It’s not like someone sits there like in a large company and only builds strategies. I think the strategy is already there, but we don’t have the title for it.”

The owner and a manager of another SME family firm (Case C) explained:

“We are celebrating our 50th anniversary this year and at the beginning of this year, through or with Covid, we actually adopted a corporate strategy for the first time.”

We detected attention to digitization primarily in the mindsets of the top management.

The interviewee (Case C) explicitly emphasized the solid financial situation of the company. He explicitly questioned whether a clearer strategy would lead to a financially successful company. The benefit is the basis for all decisions in the company across all cases. As described by a manager of a medical technology SME. Digital transformation is not an end in itself.

“I don’t need to be elected by anyone, so I don’t need such buzzwords as: “Nano” or “Digital Agenda”. For us, digitalization is a means to an end, to optimize our determination to help the patient. I don’t need to advertise with fancy words. That’s why there is no agenda, in that sense,

but a rolling out of new global tools, or creating opportunities for global communication. That is like a building block. It’s not an end in itself, because I want to show some people something nice, but it’s a means to an end”.

Several interviewees noted using external support for strategizing due to a lack of internal knowledge, low priorities, and not available human resources. Responsibility for strategy is seen exclusively attributed to top management. However, the awareness of explicit digital transformation strategy and the transparency of strategic targets and plans is heterogeneous among companies.

Only the large family business in the cases (case H) shows a fixed and transparent strategy. This includes clearly formulated goals and measures. The strategy is communicated clearly and widely in the firm. Strategic actions are pursued and implemented by delegation to middle managers via management by objectives. Regarding the planning and tracking processes for digital transformation activities, interviewees only had rudimentary experience or knowledge about organizational digitalization measures such as maturity measuring models. For some of the respondents, digitization goals are not directly recognized as they intermingled with other business goals.

“There is no measure like: How digital are we? but: How efficient are we, how well do we function? and for that the other things have to contribute.”

In none of the SME FF cases we find a specific digital strategy formation process. Goals are neither systematically developed nor pursued. Tracking of digitalization efforts tends to be unsystematic and random. If at all, methods and approaches to strategy formation are provided by external consultants or ecosystem partners. Measurement of digitalization or digitalization benchmarks to other firms as well as digital maturity models are only rudimentarily known. None of the companies employed those.

“Maturity model - As a term, yes, but I couldn’t say anything about it now”

Only our large FF has a potent process of strategy formation, developed top-down and bottom-up. For this purpose, special teams have been formed. Delegation occurs through the management by objectives approach setting and controlling targets (Rodgers & Hunter, 1992).

(C) Constraints for SME digital transformation endeavors.

When it comes to constraints to digital transformation, SME family firms mainly struggle with resources such as digitalization-specific knowledge, financial power for investments, and project management.

“That’s certainly the plethora of tasks, and the division among the different people who then do the tasks and having the good people who then implement those solutions”.

We identified inadequate and insufficient investments in IT infrastructure in case firms as key inhibitors of digital transformation. Most severely, bottom-up idea generation of the digital transformation and the diffusion and implementation of digital transformation initiatives are limited

due to the top management focus of strategizing or IT considerations so that only a few employees are involved in digital strategy work. The lack of transparency and bottom-up integration creates little trust in those being affected by the transformation and those in charge of pushing the transformation. Hence, the top management focus slows down strategic activities. In addition, we found unrealistic targets “building castles in the air” and neglecting day-to-day business also negatively impacts the implementation of strategic goals. As recent contingencies, external shocks and fierce industry regulations burdens activities of SMEs. The strong effort for coping with these challenges absorbs time and resources for the digital transformation and slows it down concurrently. For example, certification (e.g., Medtech, Medical lab) and data protection regulations increase the administrative burden and increase the need for external support. This is closely tied to the more investment risk averse character of family firms (Arregle et al., 2017).

“You can simply introduce something more innovative that does not meet the needs. This may only be of little use, but it is new. You always have this risk, of the reference to reality and therefore also the need. Only the fact that you try to implement the innovation does not guarantee success. That alone is not enough, no. It also has to have fertile ground, and then you have to pick good terrain. I think before you do something, you need a good analysis, for what and whom. After that, you can still be lucky that it fits this area, or not.”

We deduct that SME family firms are struggling with opposing challenges of pursuing their business model and of pursuing the digital transformation which requires effort, resources, and demands the development of adapted, substituted, or additional business models. Firms are already fully occupied with the transformation of the existing business model. Interestingly, family firm managers see themselves as a player in a market niche, and out of this positioning, they underestimate the need to quickly push the digital transformation. As well a clear and conscious decision to allocate the available capacities to the operational day-to-day business seems reasonable.

DISCUSSION

The purpose of our research centers on understanding the challenges of family firm SMEs for addressing the digital transformation strategically. As previous research has nuanced that family firms differ from non-family firms (Miller et al., 2008) and that SMEs differ from large firms this research followed the assumption that family firm SMEs will be distinctive in their digitalization. For this purpose, we followed an explorative case study method.

In general, our findings reveal **little emphasis on digital strategizing, little top management digital technology expertise combined with strong top management centralization**. Furthermore, top managers seem to show **overconfidence** in their market while also panicking about the digitalization needs. In addition, we find a strong tendency towards **reactive digitalization**, which is particu-

larly severe, when the industry is strongly regulated, thus demanding great effort on these pressures while having little slack for contemplating about the digital strategy.

Our findings add and specify previous studies, for example those revealing strategizing in family firms based on complex processes and often immature in SMEs (O'Regan & Ghobadian, 2007). Our insights support propositions of previous research on micro, small, and medium-sized enterprises (MSMEs) in that they face impediments related to limited financial access (Fauzi & Sheng, 2020; Teima et al., 2010), unskillful management (Arasti, 2011), limited access for the latest technology, and unprofitable relationship with big companies (Han et al., 2017). The digital strategy formulation and implementation show high tendencies towards incrementalism and pragmatism (Voss & Voss, 2012), which is found often with the continuous adaptations of digital technology (Aversa et al., 2020). This finding also supports the perspective of digital transformation as a process (Soluk et al., 2021; Soluk & Kammerlander, 2021). Our findings reveal that strategy formulation and implementation tends to be unseparated as firms are immediately reacting to challenges. In the following, we discuss our findings in greater detail, develop propositions, and suggest a process model.

On specific drivers, we gather that SME family firms not only encounter the ongoing digitalization draft but face specific tensions when they are operating in strictly **regulated industries that set institutionalized external forces**. Under such conditions, SME family firms **prioritize following regulations**. Over this course they are attributing significant resources instead about contemplating digitalization. When regulations demand digitalization, then the family firms follow such directives while paying little attention to contextual effects. Hence, SME families address the digital transformation only reactively. An indicator or even cause for the reactive strategy is the centralization on top managers for digital strategizing. This is particularly harmful while managers seem to be overly busy dealing with market partners and internal coordination so that little resources remain for digital strategizing. In this vein, we found little evidence of digitalization impulses from the organization – bottom up – and implementation help from subordinates. Hence, such firms lose important sensible insights for digitalization and support from those affected by it. In this, our finding nuances previous research about negative effects when firms separate blue and white-collar employees and follow a (reactive) strategy (Hacker, 1998).

We find several hints that the digital transformation is rather pragmatic and incrementally evolving in trial and error. The pragmatism alone would not be detrimental to performance as shown in planning research. For example, Matthews & Scott (1995) found less planning in an uncertain environment. A comprehensive planning strategy carries costs as it takes time and effort to plan for all sorts of eventualities (Bhide & Stevenson, 1992). Perhaps incremental and formal planning are best supporting digitalization (Pesch et al., 2021b).

Proposition 1. The relationship between digitalization and strategizing is best under medium levels of deliberate strategizing and incremental reactive strategy planning.

By revealing the need to innovate within a digital transformation but also to cohere with family values we support the **paradox of tradition vs. innovation** in family firms (Erdogan et al., 2019). Family firms might be required to break with continuity and tradition for developing new digital competencies (Adner & Snow, 2010; Linnekin, 1983). For family firms, solely sticking to tradition would result in losing competitiveness, and exclusively pursuing innovation would erode their core and distinctive legacy (Erdogan et al., 2019). Tradition and innovation and their coexistence seem paradoxical (Shoham, 2011). We observe this dilemma in the context of SME founders and top managers' openness to and fascination with digitization. Interestingly, top management of SMEs can strongly identify with the digital transformation but has little knowledge of how to actively initiate or implement it. The perceived urgency of the digital imperative and self-identification works diametrically to the rather slowly evolving strategy. We found evidence for SME family firms struggling in making their decisions between technology and market focus but tend towards a consumer (market) centric approach.

Interestingly, we find that managers of family firm SMEs being overconfident about their strategic position and distinctiveness (Täuscher et al., 2021) because they feel dominant to others in terms of their offerings and power in their market niche. At the same time, they often lack profound knowledge of digitalization and panic about the digitalization needs, often then completely ignoring the threat. Our insights support previous insights on overconfidence in founder controlled family firms (Dick et al., 2020). Given the strong centralization of digitalization and overconfidence of family firm managers, we speculate that this might lead to an **overconfidence trap**.

Proposition 2: Low digitalization strategizing and low digitalization performance comes from high levels of overconfidence combined with centralization of digitalization on top management; both conditions combined exert an additional negative joint effect.

Family firms so far lack understanding of how to approach a digitalization strategy while seeing the challenges of pursuing a formal digital transformation strategy. As aforementioned we find that family firms are very hesitant in strategically embracing digital transformation. They are not well informed about their relative digitalization position. (Digital) Maturity models are rarely known and applied so far by SME family firms. Top managers' lack of knowledge and confidence with digital technology, in combination with pragmatism, leads to that progress is not actively tracked. Methods and approaches to pursue this effectively and efficiently are only used in the case of a large family business. Hence, we see an urgent need for family firm SMEs to anchor digital transformation strategy prominently as a top management responsibility. We emphasize a deficit of structure and measurability of the goals of digitization. Especially the fuzzy front end of the staged strategic digitization process is critical to the success of the digital

transformation. We emphasize the importance of the initial phase, the **"fuzzy front-end"**, of the digital transformation as an innovation process. This process shows up in SME family firms as undefined and chaotic, although it can have a sustainable impact on the outcome. However, managers struggle to initiate this process and prioritize between different activities. Brock et al. (2020) investigate the front end of innovation and we support findings that an agile approach might increase speed and flexibility. It can be combined with the structure and control of a Stage-Gate model. We argue that SME family firms might benefit from models providing a basis for tracking, comparisons, and progress in transformations. Later in the implications, we present digital maturity models (DMM) as a managerial implication for strategic digital planning.

Proposition 3. A) transparent and top management initiated strategic process for digital transformation significantly increases the success rate of digital transformation efforts in SME family firms. B) Furthermore, regular bottom-up feedback supports an increase of digitalization acceptance of employees.

[Figure 1](#) shows our model of the influencing factors, strategic activities, and the subconscious strategy process that we encountered in our cases. Characteristics of family businesses (long-term objectives, stability, tradition, and control) are incorporated into the emergent strategy. Perceived external pressures (globalization, technological digitalization, and market turbulence) are also incorporated. Characterized by ambidexterity and limited resources, this results in a reactive strategy for digital transformation. This is constantly lagging behind the needs. The agile digitization strategy model, [Figure 2](#), on the other hand, describes a cycle. This is also characterized by innovation triggers, characteristics of family businesses, and perceived urgency. Through the recurring, conscious, and transparent application of a suitable DMM, digital maturity develops dynamically. A proactive and self-reflective digitization strategy is the result. This is goal-oriented and takes limitations into account.

Practical Implications

From the insight about the need to have a strategy, but also to be able to depart from it, and the lack of knowledge about the digitalization stages of the family firm, we deduct merits from the implementation of digital maturity models in family firms. Digital maturity models assist the strategic digitization. Compounded from the words maturity and model, "maturity" is the status of perfection, perfect or ready, and "model" as a simplified representation of reality form the notion of maturity models (Bley et al., 2020). Maturity models are often presented as stage models that depict an anticipated and logical path from an initial state to a maturity state (Roeglinger et al., 2012). A digital maturity model would serve as an initial first status quo evaluation. It shapes the basis for evaluations of the situation in comparison to the industry and the competitive environment and for understanding the firm's specific digitalization context. It will thus serve as a basis for strategy development in family firms. A digital maturity model (DMM) is a method or tool to determine, manage and shape the sta-

Table 3. Digitalization triggers, action fields, organizational set-up and impulse driver.

Case	Digitalization Triggers	Focus areas & functions	Organizational digitalization set-up	Driver/Initiator/Impulse
A	<ul style="list-style-type: none"> Market requirements Efficiency increase 	<ul style="list-style-type: none"> Product management / R&D 	<ul style="list-style-type: none"> Integrated in business model 	<ul style="list-style-type: none"> Structured top-down Informal lateral
B	<ul style="list-style-type: none"> Efficiency increase 	<ul style="list-style-type: none"> Shopfloor 	<ul style="list-style-type: none"> No specific digital org. set-up 	<ul style="list-style-type: none"> Unstructured
C	<ul style="list-style-type: none"> Market requirements 	<ul style="list-style-type: none"> Sales channels Product management 	<ul style="list-style-type: none"> Project-based digitalization Coordination in CEO office 	<ul style="list-style-type: none"> Top management Top-down and bottom-up approach
D	<ul style="list-style-type: none"> Efficiency increase 	<ul style="list-style-type: none"> Shopfloor 	<ul style="list-style-type: none"> No specific digital org. set-up 	<ul style="list-style-type: none"> Unstructured
E	<ul style="list-style-type: none"> Market requirements 	<ul style="list-style-type: none"> Logistics 	<ul style="list-style-type: none"> Founder as coordinator of external service providers 	<ul style="list-style-type: none"> Investors as major driver.
F	<ul style="list-style-type: none"> Market requirements 	<ul style="list-style-type: none"> Sales Channels 	<ul style="list-style-type: none"> Founder as coordinator. Project-based. 	<ul style="list-style-type: none"> Top Management is driver Top-down
G	<ul style="list-style-type: none"> Market requirements 	<ul style="list-style-type: none"> Sales Channels 	<ul style="list-style-type: none"> Founder as main coordinator Project-based. 	<ul style="list-style-type: none"> Top Management is driver Top-down
H	<ul style="list-style-type: none"> Market requirements Efficiency increase Product innovation (Technology) Business model extension Covid-19 pandemic 	<ul style="list-style-type: none"> Sales Channel Shopfloor, HR Product Management /R&D New digital business model Leadership and culture 	<ul style="list-style-type: none"> Integrative model in corporate business strategy. Specific digital service centers and specialists established to support. Digitalization is set as global and corporate focus topic 	<ul style="list-style-type: none"> Top management with clear objectives for digitalization. Sub-organization with bottom-up proposals. Full transparency

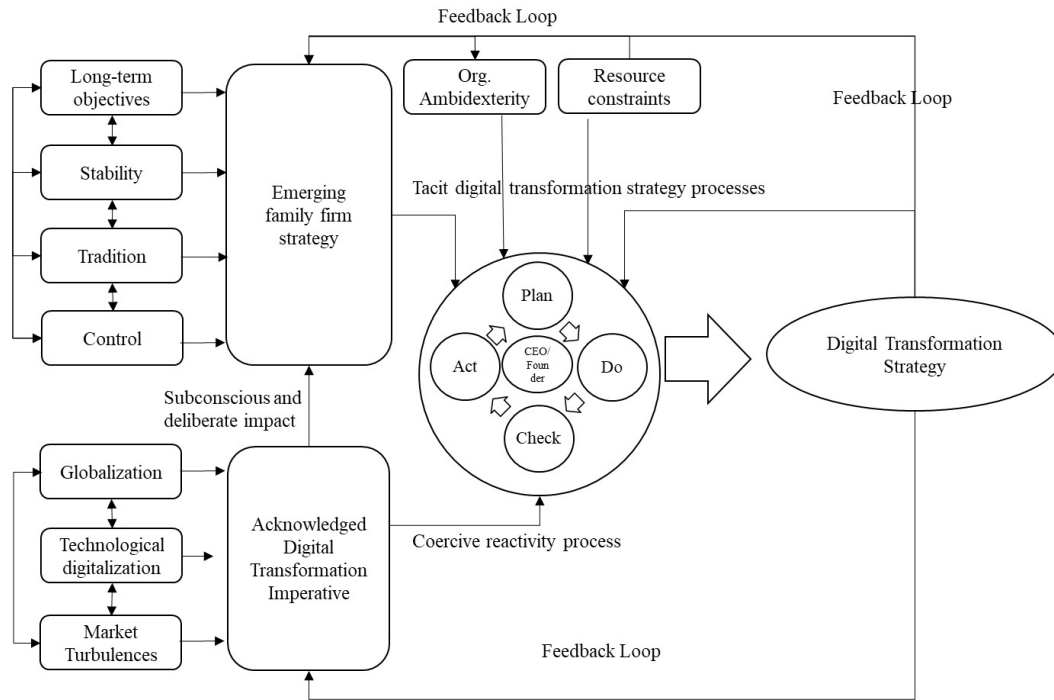


Figure 1. Reactive strategic digital transformation framework

tus quo and progress of digital transformation (Rossmann, 2019). Thordsen et al. focus on a situational approach and define the digital maturity level as the achieved status of the digital transformation of a company (Thordsen et al., 2020). It thus represents a specific form of a maturity model tailored for digital transformation. The creation of a digital maturity model increases knowledge of the family firms about where they have strengths and deficits and allows profound discussions of the family firm managers and family firm members about potential threads, directions, and investment needs.

However, DMM might offer a more structured and transparent approach than, for example, quality management related plan-do-check-act cycles (Nicolay et al., 2012). Nonetheless, DMM do not directly result in actions and are not tailor-made (Berghaus, 2018).

Conclusion, Limitations, and Future Research

At large, our study finds that SME family firms show lower levels of strategizing and a pragmatic-incremental approach to their digital transformation. Our findings inform about two dualisms: First, managers have a low digital competence but still organize for top management centralization. Second, managers show a strong (over-)confidence about their competitive positioning while they are panicking about the digitalization requirements, instead of approaching their business strategically by additionally offering digital business models. Related to this, SME family firms tend to follow a reactive digital transformation which again is become more limiting related to the strong top management centralization. The reactivity trap is most severe when the firms operate in strongly regulated industries that demand full attention on the institutionalized pres-

ures. At last, we find that traditionalism is at odds with digitalization. Our theorizing submits propositions and a process model of digital strategizing. On the practical side, our study suggests digital maturity models as a starting stage for family firm SME's digitalization.

Our study's limitations center on our sample from the DACH region in Europe (Germany, Liechtenstein, and Switzerland). Furthermore, the cases only offer a focused view on the life science industry. While we have no reason to believe that this has a significant impact on the quality of our research findings, we encourage scholars to replicate our findings in different cultural contexts or from a more diverse sample. Nonetheless, we are so far lacking a deeper understanding of the mechanisms regarding digital transformation strategy in SME family firms. Furthermore, we only have limited insights into the strategic process and its stages. Hence, it might be a fruitful approach for future scholarly research to dig deeper into the separate process steps. On better understanding the conditions and instruments of family firm SME for the digitalization, we motivate future research on specific characteristics of family firm managers. The strong centralization of the leaders might deliver interesting insights into how personal characteristics underlie the digitalization of a firm. Methodically, we suggest a pattern matching technique that allows the combination of deductive and inductive reasoning (Bouncken & Tiberius, 2021; Gatignon & Capron, 2020; Sinkovics, 2018). Furthermore, an ethnographic case study would enable us to observe phenomena in a more focused organizational context (Baiyere et al., 2020).

Submitted: March 03, 2022 CDT, Accepted: April 12, 2022 CDT

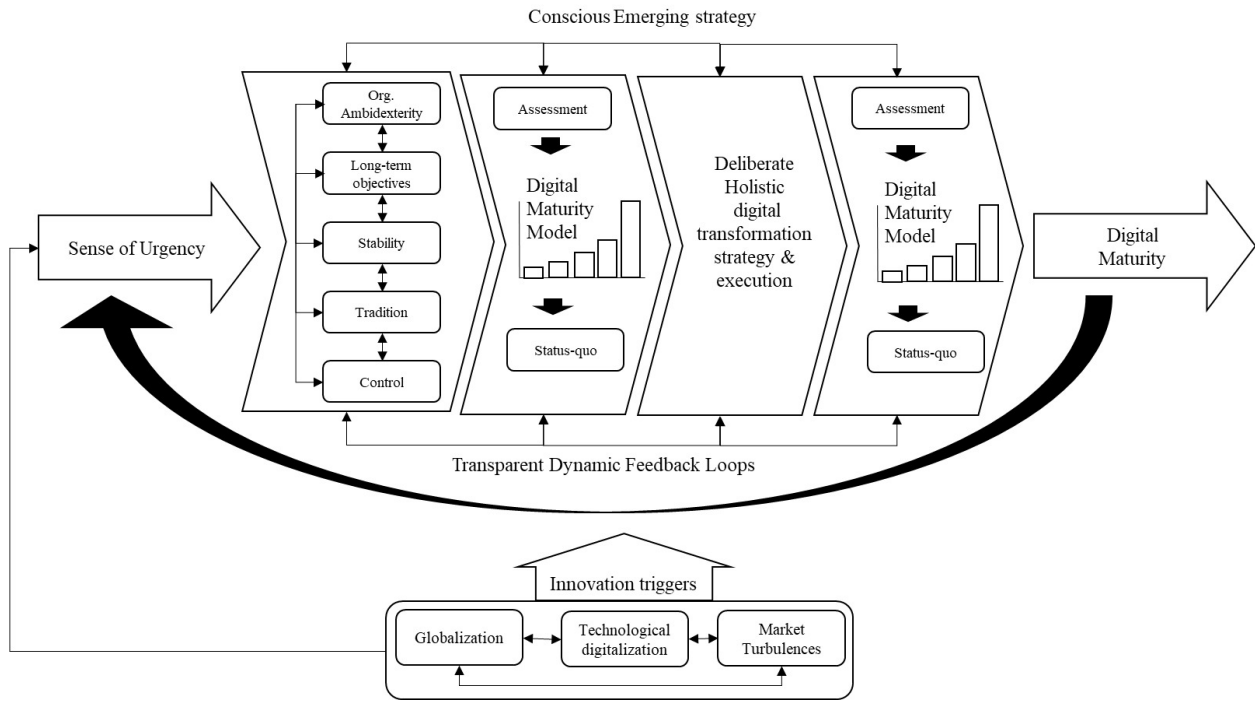


Figure 2. Integrated digital transformation strategic process\



This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CCBY-4.0). View this license's legal deed at <http://creativecommons.org/licenses/by/4.0> and legal code at <http://creativecommons.org/licenses/by/4.0/legalcode> for more information.

References

- Adner, R., & Snow, D. (2010). Old technology responses to new technology threats: Demand heterogeneity and technology retreats. *Industrial and Corporate Change*, 19(5), 1655–1675. <https://doi.org/10.1093/icc/dtq046>
- Agarwal, R., Johnson, S. L., & Lucas, H. C. (2011). Leadership in the Face of Technological Discontinuities: The Transformation of EarthColor. *Communications of the Association for Information Systems*, 29(1), 627–644.
- Ahmadi, E., Macassa, G., & Larsson, J. (2021). Managers' work and behaviour patterns in profitable growth SMEs. *Small Business Economics*, 57(2), 849–863. <https://doi.org/10.1007/s11187-020-00386-0>
- Appio, F. P., Frattini, F., Petruzzelli, A. M., & Neirotti, P. (2021). Digital transformation and innovation management: A synthesis of existing research and an agenda for future studies. *Journal of Product Innovation Management*, 38(1), 4–20. <https://doi.org/10.1111/jpim.12562>
- Arasti, Z. (2011). An empirical study on the causes of business failure in Iranian context. *African Journal of Business Management*, 5. <https://doi.org/10.5897/AJBM11.402>
- Arregle, J.-L., Duran, P., Hitt, M. A., & van Essen, M. (2017). Why is family firms' internationalization unique? A Meta-Analysis. *Entrepreneurship Theory and Practice*, 41(5), 801–831. <https://doi.org/10.1111/etap.12246>
- Arregle, J.-L., Hitt, M. A., & Mari, I. (2019). A missing link in family firms' internationalization research: Family structures. *Journal of International Business Studies*, 50(5), 809–825. <https://doi.org/10.1057/s41267-019-00213-z>
- Aversa, P., Formentini, M., Iubatti, D., & Lorenzoni, G. (2020). Digital machines, space, and time: Towards a behavioral perspective of flexible manufacturing. *Journal of Product Innovation Management*, 38(1), 114–141. <https://doi.org/10.1111/jpim.12542>
- Baiyere, A., Salmela, H., & Tapanainen, T. (2020). Digital transformation and the new logics of business process management. *European Journal of Information Systems*, 29(3), 238–259. <https://doi.org/10.1080/0960085X.2020.1718007>
- Bergfeld, M.-M., & Weber, F.-M. (2011). Dynasties of Innovation: Highly performing German family firms and the owners' role for innovation. *International Journal of Entrepreneurship and Innovation Management*, 13(1), 80–94.
- Berghaus, S. (2018). *The Fuzzy Front End of Digital Transformation* [Dissertation]. Universität St. Gallen.
- Bertrand, M., & Schoar, A. (2006). The role of family in family firms. *Journal of Economic Perspectives*, 20(2), 73–96.
- Bettinelli, C., Mismetti, M., De Massis, A., & Del Bosco, B. (2021). A review of conflict and cohesion in social relationships in family firms. *Entrepreneurship Theory and Practice*, April 2021. <https://doi.org/10.1177/10422587211000339>
- Bhide, A., & Stevenson, H. (1992). Trust, uncertainty, and profit. *Journal of Socio-Economics*, 21, 191–208.
- Bianco, M., Bontempi, M. E., Golinelli, R., & Parigi, G. (2013). Family firms' investments, uncertainty and opacity. *Small Business Economics*, 40(4), 1035–1058.
- Bley, K., Schön, H., & Strahinger, S. (2020). Overcoming the Ivory Tower: A Meta Model for Staged Maturity Models. In *Responsible Design, Implementation and Use of Information and Communication Technology* (pp. 337–349). Springer International Publishing.
- Block, J. H., & Spiegel, F. (2011). Family Firms and Regional Innovation Activity: Evidence from the German Mittelstand. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.1745362>
- Bonk, E. T. (1996). The information revolution and its impact on SME strategy: The Asia Pacific economic cooperative forum as a model. *Journal of Small Business Management*, 34(1), 71–77.
- Bouncken, R. B., & Barwinski, R. (2021). Shared digital identity and rich knowledge ties in global 3D printing - A drizzle in the clouds? *Global Strategy Journal*, 11(1), 81–108. <https://doi.org/10.1002/gsj.1370>
- Bouncken, R. B., Barwinski, R., & Brownell, K. (2021). Organizational digital identity: Concept and underlying centrifugalistic and polycentralistic forces. *Academy of Management Proceedings*, 2021(1), 12444. <https://doi.org/10.5465/AMBPP.2021.12444abstract>
- Bouncken, R. B., Hughes, M., Ratzmann, M., Cesinger, B., & Pesch, R. (2020). Family firms, alliance governance and mutual knowledge creation. *British Journal of Management*, 31(4), 769–791. <https://doi.org/10.1111/1467-8551.12408>
- Bouncken, R. B., & Kraus, S. (2021). Entrepreneurial Ecosystems in an interconnected world: Emergence, governance, and digitalization. *Review of Managerial Science*. <https://doi.org/10.1007/s11846-021-00444-1>
- Bouncken, R. B., Pesch, R., & Kraus, S. (2015). SME innovativeness in buyer–seller alliances: Effects of entry timing strategies and inter-organizational learning. *Review of Managerial Science*, 9(2), 361–384. <https://doi.org/10.1007/s11846-014-0160-6>
- Bouncken, R. B., & Tiberius, V. (2021). Legitimacy Processes and Trajectories of Co-Prosumption Services: Insights from Coworking Spaces. *Journal of Service Research*, 0(0), 1–19. <https://doi.org/10.1177/10946705211050208>
- Brock, K., den Ouden, E., Langerak, F., & Podoyntsyna, K. (2020). Front End Transfers of Digital Innovations in a Hybrid Agile-Stage-Gate Setting. *Journal of Product Innovation Management*, 37(6), 506–527. <https://doi.org/10.1111/jpim.12556>

- Cassia, L., De Massis, A., & Pizzurno, E. (2012). Strategic innovation and new product development in family firms: An empirically grounded theoretical framework. *International Journal of Entrepreneurial Behavior & Research*, 18(2), 198–232.
- Ceipek, R., Hautz, J., De Massis, A., Matzler, K., & Ardito, L. (2021). Digital transformation through exploratory and exploitative internet of things innovations: The impact of family management and technological diversification. *Journal of Product Innovation Management*, 38(1), 142–165. <https://doi.org/10.1111/jpim.12551>
- Chrisman, J. J., Kellermanns, F. W., Chan, K. C., & Liano, K. (2010). Intellectual Foundations of Current Research in Family Business: An Identification and Review of 25 Influential Articles. *Family Business Review*, 23(1), 9–26.
- Chrisman, J. J., Madison, K., & Kim, T. (2021). A dynamic framework of noneconomic goals and inter-family agency complexities in multi-family firms. *Entrepreneurship Theory and Practice*, 45(4), 906–930. <https://doi.org/10.1177/10422587211005775>
- Chua, J. H., Chrisman, J. J., & Sharma, P. (1999). Defining the family business by behaviour. *Entrepreneurship Theory and Practice*, 23(4), 19–39.
- Clauss, T., Bouncken, R. B., Laudien, S., & Kraus, S. (2020). Business model reconfiguration and innovation in SMEs: A mixed-method analysis from the electronics industry. *International Journal of Innovation Management*, 24(02), 2050015. <https://doi.org/10.1142/S1363919620500152>
- Corbin, J. M., & Strauss, A. (1990). Grounded theory research: Procedures, canons, and evaluative criteria. *Qualitative Sociology*, 13(1), 3–21.
- Craig, J., & Dibrell, C. (2006). The Natural Environment, Innovation, and Firm Performance: A Comparative Study. *Family Business Review*, 19(4), 275–288.
- Craig, J., & Moores, K. (2006). A 10-Year Longitudinal Investigation of Strategy, Systems, and Environment on Innovation in Family Firms. *Family Business Review*, 19(1), 1–10.
- De Massis, A., Frattini, F., & Lichtenthaler, U. (2013). Research on Technological Innovation in Family Firms: Present Debates and Future Directions. *Family Business Review*, 26(1), 10–31. <https://doi.org/10.1177/0894486512466258>
- De Massis, A., Frattini, F., Pizzurno, E., & Cassia, L. (2015). Product innovation in family versus nonfamily firms: An exploratory analysis. *Journal of Small Business Management*, 53(1), 1–36.
- Dick, M., Wagner, E., & Pernsteiner, H. (2020). Founder-controlled family firms, overconfidence, and corporate social responsibility engagement: Evidence from survey data. *Family Business Review*, 34(1), 71–92. <https://doi.org/10.1177/0894486520918724>
- Duran, P., Kammerlander, N., van Essen, M., & Zellweger, T. (2016). Doing More with Less: Innovation Input and Output in Family Firms. *Academy of Management Journal*, 59(4), 1224–1264. <https://doi.org/10.5465/amj.2014.0424>
- Eisenhardt, K. M. (1989). Building theories from case study research. *Academy of Management Review*, 14(4), 532–550. <https://doi.org/10.5465/amr.1989.4308385>
- Eisenhardt, K. M., & Graebner, M. E. (2007). Theory building from cases: Opportunities and challenges. *Academy of Management Journal*, 50(1), 25–32. <https://doi.org/10.5465/amj.2007.24160888>
- Erdogan, I., Rondi, E., & De Massis, A. (2019). Managing the tradition and innovation paradox in family firms: A family imprinting perspective. *Entrepreneurship Theory and Practice*, 44(1), 20–54. <https://doi.org/10.1177/1042258719839712>
- Fauzi, A. A., & Sheng, M. L. (2020). The digitalization of micro, small, and medium-sized enterprises (MSMEs): An institutional theory perspective. *Journal of Small Business Management*, 1–26. <https://doi.org/10.1080/00472778.2020.1745536>
- Fernandez, Z., & Nieto, M. J. (2006). Impact of ownership on the international involvement of SMEs. *Journal of International Business Studies*, 37(3), 340–351.
- Filser, M., De Massis, A., Gast, J., Kraus, S., & Niemand, T. (2018). Tracing the roots of innovativeness in family SMEs: The effect of family functionality and socioemotional wealth. *Journal of Product Innovation Management*, 35(4), 609–628. <https://doi.org/10.1111/jpim.12433>
- Fitzgerald, M., Kruschwitz, N., Bonnet, D., & Welch, M. (2014). Embracing digital technology. *MIT Sloan Management Review*, 55(2), 1–12.
- Frankenberger, K., Mayer, H., Reiter, A., & Schmidt, M. (2020). *The Digital Transformers Dilemma: How to energize your core business while building disruptive products and services*. JOHN WILEY & Sons.
- Frankenberger, K., & Stam, W. (2020). Entrepreneurial copycats: A resource orchestration perspective on the link between extra-industry business model imitation and new venture growth. *Long Range Planning*, 53(4), 101872. <https://doi.org/10.1016/j.lrp.2019.02.005>
- Garzella, S., Fiorentino, R., Caputo, A., & Lardo, A. (2020). Business model innovation in SMEs: The role of boundaries in the digital era. *Technology Analysis & Strategic Management*, 1–13. <https://doi.org/10.1080/09537325.2020.1787374>
- Gatignon, A., & Capron, L. (2020). The firm as an architect of polycentric governance: Building open institutional infrastructure in emerging markets. *Strategic Management Journal*. In printing. <https://doi.org/10.1002/smj.3124>
- Glaser, B., & Strauss, A. (1967). *The Discovery of Grounded Theory. Strategies for Qualitative Research*. Aldine Publishing Company.
- Gomez-Mejia, L. R., Haynes, K. T., Nunez-Nickel, M., Jacobson, K. J. L., & Moyano-Fuentes, J. (2007). Socioemotional Wealth and Business Risks in Family-Controlled Firms: Evidence from Spanish Olive Oil Mills. *Administrative Science Quarterly*, 52(1), 106–137.

- Gómez-Mejía, L. R., Haynes, K. T., Núñez-Nickel, M., Jacobson, K. J. L., & Moyano-Fuentes, J. (2007). Socioemotional Wealth and Business Risks in Family-controlled Firms: Evidence from Spanish Olive Oil Mills. *Administrative Science Quarterly*, 52(1), 106–137. <https://doi.org/10.2189/asqu.52.1.106>
- Gómez-Mejía, L. R., Makri, M., & Larraza Kintana, M. (2010). Diversification decisions in family-controlled firms. *Journal of Management Studies*, 47(2), 223–252.
- Hacker, K. (1998). Special report: Alliances and school-based health care - Preface. *Journal of School Health*, 68(10), 399–399.
- Han, M., Seok, B., & Kim, J. (2017). Effects of Six Personality Factors of CEOs at Small and Medium-Sized Enterprises on Performance in Business Management: Focusing on Learning and Growth. *Asian Academy of Management Journal*, 22, 97–128. <https://doi.org/10.21315/aamj2017.22.2.4>
- Kane, G. C., Palmer, D., Phillips, A. N., & Kiron, D. (2018). Is Your Business Ready for a Digital Future? *MIT Sloan Management Review*, 56(4), 36–44.
- Khanin, D., Turel, O., Bart, C., McDowell, W. C., & Hock-Döpgen, M. (2020). The possible pitfalls of boards' engagement in the strategic management process. *Review of Managerial Science*. <https://doi.org/10.1007/s11846-020-00386-0>
- Kraus, S., Durst, S., Ferreira, J. J., Veiga, P., Kailer, N., & Weinmann, A. (2022). Digital transformation in business and management research: An overview of the current status quo. *International Journal of Information Management*, 63, 102466.
- Le Breton-Miller, I., & Miller, D. (2006). Why do some family businesses out-compete? Governance, long-term orientations, and sustainable capability. *Entrepreneurship Theory and Practice*, 30(6), 731–746.
- Le Breton-Miller, I., & Miller, D. (2009). Agency vs. stewardship in public family firms: A social embeddedness reconciliation. *Entrepreneurship Theory and Practice*, 33(6), 1169–1191. <https://doi.org/10.1111/j.1540-6520.2009.00339.x>
- Leonard-Barton, D. (1992). Core capabilities and core rigidities: A paradox in managing new product development. *Strategic Management Journal*, 13(1), 111–125.
- Lim, E. N. K., Lubatkin, M. H., & Wiseman, R. M. (2010). A family firm variant of the behavioral agency theory. *Strategic Entrepreneurship Journal*, 4(3), 197–211. <https://doi.org/10.1002/sej.91>
- Linnekin, J. S. (1983). Defining tradition: Variations on the Hawaiian identity. *American Ethnologist*, 10(2), 241–252. <https://doi.org/10.1525/ae.1983.10.2.02a00020>
- Llach, J., & Nordquist, M. (2010). Innovation in family and non-family businesses: a resource perspective. *International Journal of Entrepreneurial Venturing*, 2(3/4), 381–399.
- Lohwasser, T. S., Hoch, F., & Kellermanns, F. W. (2022). Strength in stability: A meta-analysis of family firm performance moderated by institutional stability and regime type. *Entrepreneurship Theory and Practice*, 46(1), 117–158. <https://doi.org/10.1177/10422587211026863>
- Lubatkin, M. H., Ling, Y., & Schulze, W. S. (2007). An Organizational Justice-Based View of Self-Control and Agency Costs in Family Firms. *Journal of Management Studies*, 44(6), 955–971. <https://doi.org/10.1111/j.1467-6486.2006.00673.x>
- Massis, A. de, Kotlar, J., & Manelli, L. (2021). Family Firms, Family Boundary Organizations, and the Family-Related Organizational Ecosystem. *Family Business Review*, 34(4), 350–364. <https://doi.org/10.1177/08944865211052195>
- Matt, C., Hess, T., & Benlian, A. (2015). Digital transformation strategies. *Business & Information Systems Engineering*, 57(5), 339–343. <https://doi.org/10.1007/s12599-015-0401-5>
- Matthews, C. H., & Scott, S. G. (1995). Uncertainty and planning in small and entrepreneurial firms: an empirical assessment. *Journal of Small Business Management*, 33(4), 34.
- McConaughy, D. L., Matthews, C. H., & Fialko, A. S. (2001). Founding Family Controlled Firms: Performance, Risk, and Value. *Journal of Small Business Management*, 39(1), 31–49. <https://doi.org/10.1111/0447-2778.00004>
- Miller, D., & Le Breton-Miller, I. (2021). Family Firms: A Breed of Extremes? *Entrepreneurship Theory & Practice*, 45(4), 663–681. <https://doi.org/10.1177/1042258720964186>
- Miller, D., Le Breton-Miller, I., & Scholnick, B. (2008). Stewardship vs. stagnation: An empirical comparison of small family and non-family businesses. *Journal of Management Studies*, 45(1), 51–78. <https://doi.org/10.1111/j.1467-6486.2007.00718.x>
- Mishra, C. S., & McConaughy, D. L. (1999). Founding Family Control and Capital Structure: The Risk of Loss of Control and the Aversion to Debt. *Entrepreneurship Theory and Practice*, 23(4), 53–64. <https://doi.org/10.1177/104225879902300404>
- Morck, R., Strangeland, D. A., & Yeung, B. (2000). Inherited wealth, corporate control, and economic growth: The Canadian disease. In R. Morck (Ed.), *Concentrated corporate ownership* (pp. 319–369).
- Myers, M. D. (2009). *Qualitative Research in Business and Management*. Sage.
- Naldi, L., Nordquist, M., Sjoeborg, K., & Wiklund, J. (2007). Entrepreneurial Orientation, Risk Taking and Performance in Family Firms. *Family Business Review*, 20(1), 33–47.
- Nambisan, S., Lyytinen, K., Majchrzak, A., & Song, M. (2017). Digital innovation management: Reinventing innovation management research in a digital world. *MIS Quarterly*, 41(1), 223–238.
- Neergaard, H., & Ulhøi, J. (2007). *Handbook of qualitative research methods in entrepreneurship*. Edward Elgar Publishing.
- Nicolay, C. R., Purkayastha, S., Greenhalgh, A., Benn, J., Chaturvedi, S., Phillips, N., & Darzi, A. (2012). Systematic review of the application of quality improvement methodologies from the manufacturing industry to surgical healthcare. *Br J Surg*, 99(3), 324–335. <https://doi.org/10.1002/bjs.7803>

- Nieto, M. J., Santamaria, L., & Fernandez, Z. (2015). Understanding the innovation behavior of family firms. *Journal of Small Business Management*, 53(2), 382–399.
- O'Regan, N., & Ghobadian, A. (2007). Formal strategic planning: annual raindance or wheel of success? *Strategic Change*, 16(1–2), 11–22. <https://doi.org/10.1002/jsc.777>
- Pesch, R., Endres, H., & Bouncken, R. B. (2021a). Digital Product Innovation Management: Balancing Stability and Fluidity through Formalization. *Journal of Product Innovation Management*, 38, 726–744. <https://doi.org/10.1111/jpim.12609>
- Pesch, R., Endres, H., & Bouncken, R. B. (2021b). Digital product innovation management: Balancing stability and fluidity through formalization. *Journal of Product Innovation Management*, 38(6), 726–744. <https://doi.org/10.1111/jpim.12609>
- Ribeiro-Navarrete, S., Botella-Carrubi, D., Palacios-Marqués, D., & Orero-Blat, M. (2021). The effect of digitalization on business performance: An applied study of KIBS. *Journal of Business Research*, 126, 319–326. <https://doi.org/10.1016/j.jbusres.2020.12.065>
- Rodgers, R. C., & Hunter, J. E. (1992). A Foundation of Good Management Practice in Government: Management by Objectives. *Public Administration Review*, 52, 27.
- Roeglinger, M., Poepplbuss, J., & Becker, J. (2012). Maturity Models in Business Process Management. *Business Process Management Journal*, 18, 328–346. <https://doi.org/10.1108/14637151211225225>
- Rossmann, A. (2019). *Digital Maturity: Conceptualization and Measurement Model*.
- Schulze, W., Lubatkin, M., & Dino, R. (2003). Exploring the agency consequences of ownership dispersion among the directors of private family firms. *Academy of Management Journal*, 46(2), 174–194.
- Scotto, V., Nicotra, M., Del Giudice, M., Krueger, N., & Gregori, G. L. (2021). A microfoundational perspective on SMEs' growth in the digital transformation era. *Journal of Business Research*, 129, 382–392. <https://doi.org/10.1016/j.jbusres.2021.01.045>
- Shoham, H. (2011). Rethinking Tradition: From Ontological Reality to Assigned Temporal Meaning. *European Journal of Sociology*, 52. <https://doi.org/10.1017/S0003975611000129>
- Sinkovics, N. (2018). Pattern matching in qualitative analysis. In C. Cassel, A. Cunliffe, & G. Grandy (Eds.), *The Sage Handbook of Qualitative Business and Management Research Methods* (pp. 468–485). Sage Publications.
- Sirmon, D., & Hitt, M. A. (2003). Managing resources: Linking unique resources, management and wealth creation in family firms. *Entrepreneurship Theory and Practice*, 27(4), 339–359.
- Soluk, J., & Kammerlander, N. (2021). Digital transformation in family-owned Mittelstand firms: A dynamic capabilities perspective. *European Journal of Information Systems*, 1–36. <https://doi.org/10.1080/0960085X.2020.1857666>
- Soluk, J., Miroshnychenko, I., Kammerlander, N., & De Massis, A. (2021). Family influence and digital business model innovation: the enabling role of dynamic capabilities. *Entrepreneurship Theory and Practice*, 45(4), 867–905. <https://doi.org/10.1177/1042258721998946>
- Stanley, L. J., & McDowell, W. (2014). The role of interorganizational trust and organizational efficacy in family and nonfamily firms. *Journal of Family Business Strategy*, 5(3), 264–275.
- Strauss, A., & Corbin, J. (1998). *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*. Sage Publications, Inc.
- Täuscher, K., Bouncken, R. B., & Pesch, R. (2021). Gaining legitimacy by being different: Optimal distinctiveness in crowdfunding platforms. *Academy of Management Journal*, 64(1), 149–179. <https://doi.org/10.5465/amj.2018.0620>
- Teima, G., Ramsden, N., & Mirmulstein, M. (2010). *Access finance (January 2010)*. World Bank Group. <https://policycommons.net/artifacts/1520355/access-finance-january-2010/2201629/>
- Thomsen, S., & Pedersen, T. (2000). Ownership structure and economic performance in the largest European companies. *Strategic Management Journal*, 21(6), 689–705. [https://doi.org/10.1002/\(SICI\)1097-0266\(200006\)21:6<689::AID-SMJ115>3.0.CO;2-Y](https://doi.org/10.1002/(SICI)1097-0266(200006)21:6<689::AID-SMJ115>3.0.CO;2-Y)
- Thordsen, T., Murawski, M., & Bick, M. (2020). How to Measure Digitalization? A Critical Evaluation of Digital Maturity Models. *Responsible Design, Implementation and Use of Information and Communication Technology*, 12066, 358–369.
- Voss, G. B., & Voss, Z. G. (2012). Strategic Ambidexterity in Small and Medium-Sized Enterprises: Implementing Exploration and Exploitation in Product and Market Domains. *Organization Science*, 24(5), 1459–1477. <https://doi.org/10.1287/orsc.1120.0790>
- Wessel, L., Baiyere, A., Ologeanu-Taddei, R., Cha, J., & Blegind-Jensen, T. (2021). Unpacking the difference between digital transformation and IT-enabled organizational transformation. *Journal of the Association for Information Systems*, 22(1).
- Westerman, G., & McAfee, A. (2012). *The Digital Advantage: How Digital Leaders Outperform Their Peers in Every Industry*. MIT.
- Wirtz, B. W. (2019). *Digital business models: Concepts, models, and the alphabet case study*. Springer. <https://doi.org/10.1007/978-3-030-13005-3>
- Yin, R. K. (2009). *Case study research: Design and methods*.