THE DIGITALIZATION OF FAMILY FIRMS: A RESEARCH AGENDA[1]

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Abstract

Currently, digitalization is a hot topic in popular media. While family firms represent most firms worldwide, their specific opportunities and challenges in digitalization have not yet received much research attention. As will be argued in this chapter, such research would however be necessary to advance our understanding of contemporary family firms and enable us to better advise family firms in mastering digitalization processes. We also offer some initial survey evidence from Iceland and Ireland on the digitalization of family firms. As this evidence suggests, family firms are somewhat reluctant to embrace digitalization. At this point, we can only theorize why this is the case, which reinforces our call for more research on the specifics of digitalization in family firms.

Keywords: Family business, family firm, digitalization, organizational change

1. INTRODUCTION

Worldwide, digitalization is currently dominating the business media. While most experts agree that digitalization will affect many businesses and employees, the precise outcomes remain unclear (Degryse, 2016). For business owners, this creates considerable uncertainty on how to address the challenges of digitalization.

Given their sheer economic importance (Masulis, Pham, & Zein, 2011; Schulze & Gedajlovic, 2010), many family firms worldwide will be, and indeed already are affected, by digitalization. Given their overall peculiarities (Sirmon & Hitt, 2003), it may be expected that family firms

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also show some distinct characteristics and paths when it comes to digitalization. For instance, cloud-based digital technologies make professional software solutions much more affordable to small businesses (Strauss, Kristandl, & Quinn, 2014), many of which are family firms (Memili, Fang, Chrisman, & De Massis, 2015). Consequently, digitalization could foster family business professionalization. Given that such professionalization has been argued to be important to family firm survival (Chittoor & Das, 2007), digitalization may in turn affect family firms' long-term survivability. At the same time, family firms may be confronted with specific challenges. Among these, inter-generational conflicts may peak as older generations are reluctant to quickly adopt digital technologies, while younger generations push for instant adoption (cf. De Clercq & Belausteguigoitia, 2015; Hiebl, 2015b).

Despite such presumed specifics of family firm digitalization and its potential significance, the extant family business literature has so far neglected the issue. To spark more research on this important topic for the future of family businesses, in this chapter, we aim to sketch out a research agenda on the digitalization of family firms. In particular, we will first detail some challenges and opportunities for family firms arising from digitalization (Section 3) and then present recent survey insights into the digitalization of Icelandic and Irish family firms, as conveyed through their use of accounting information systems (Section 4). Based on these insights, we suggest various important avenues for future research on the digitalization of family firms (Section 5). Before we dig into these issues, we will first present some working definitions of what we view as family firms and digitalization in this chapter (Section 2).

2. FAMILY FIRMS AND DIGITALIZATION

Although both "family firms" and "digitalization" are widely-used terms in the popular press and in research publications, there is not yet a generally agreed upon definition of either of these terms (Chua, Chrisman, & Sharma, 1999; Legner et al., 2017; Steiger, Duller, & Hiebl, 2015). In this section, we do not aim for a comprehensive discussion of these terms rather present some working definitions of what is to be understood by them in this chapter.

While there are dozens of (slightly) different definitions available of what constitutes family firms (e.g., Steiger et al., 2015), these definitions share the commonality that family firms feature significant family involvement (Chua et al., 1999; Sharma, 2004). Consequently, we adopt a broad view of what makes up family firms and define them as firms with high levels of family involvement. This definition is broad enough to capture family firms of various sizes, cultural backgrounds, legal settings and from a wide range of industries. Note that while in the following, we will selectively refer to literature on small firms, not all small firms are family firms and not all family firms are small (IFERA, 2003). However, the challenges, opportunities and change processes in regards to the digitalization of family firms are likely to be relevant to most small firms and vice versa.

The term digitalization needs to be distinguished from digitization. While the latter is "the technical process of converting analog signals into a digital form", digitalization can be understood as the "manifold sociotechnical phenomena and processes of adopting and using" digital technologies "in broader individual, organizational, and societal contexts" (Legner et al., 2017, p. 301). Today, digital technologies are more and more affecting people's private and professional lives — just think of the various apps you may use daily in a personal context. In a business context, digitalization includes digital technologies complementing and enriching existing services and products and allowing for novel business models (Legner et al., 2017); for example, the emergence and growth of businesses like Uber. The consulting firm Gartner[3] defines digitalization in a similar way as "the use of digital technologies to change a business model and provide new revenue and value-producing opportunities; it is the process of moving to a digital business". While both definitions are similar, for the purposes of this chapter, the second is more readily applicable to highlight the further research needs on the challenges, opportunities and changes faced by family firms detailed later. A change in business models, as suggested by the definition, is a source of disruption for family firms. Such new business models are created when technology enables previously unmet needs to be satisfied, eliminates intermediaries, removes "transaction-friction", or reduces regulation of a specific industry. Amazon, Airbnb and Uber are examples of services that have changed existing business models. Earlier examples of digital technology include areas such as Enterprise Resource Planning (ERP) systems, cloud computing and mobile computing; current examples of digital technology impacting business include the Internet of Things, Blockchain, Artificial Intelligence (AI) and Big Data. It has also been argued that in modern organizations change is continuous, and the operating environment has become more turbulent (Melnyk, Bititci, Platts, Tobias, & Andersen, 2014). Organizations are never in a state of "no-change" and "the idea that periods of change are punctuated by periods of equilibrium is outdated" (Otley, 2016, p.

[3] See https://www.gartner.com/it-glossary/digitalization

54). In terms of digitalization, a difference between older and newer technologies is that a new accounting system, for instance, will likely not disrupt your business, but a self-flying intelligent drone invented by your competitor may. Of course, a problem with a broad definition of digitalization is it gives no indication of how long the process might take, or a path to digitalization. Indeed, some family firms may not wish to embark on a full digitalization process at all. Having said that, it is quite likely that most family firms will be digitalized to some degree — even if only selling products online to generate extra revenue. Consequently, the issues for future research discussed below are likely to affect most family firms to some degree.

3. OPPORTUNITIES AND CHALLENGES FOR FAMILY FIRMS ARISING FROM DIGITALIZATION

As discussed in Section 2, due to digitalization, significant changes may be needed to ensure that products and services match customer requirements and the company can respond to competitors and technological developments. It would seem family businesses are aware of the need for such change. Practitioner surveys of family firms in Singapore and in the U.S. show family businesses are well aware of both the opportunities and the potential challenges of digitalization (KPMG, 2017; PricewaterhouseCoopers, 2018). The family firms in these surveys cite the need for changes in digitizing business transactions, implementing e-commerce, providing online services, harnessing customer engagement in online platforms and applying data analytics to enhance decision making as being the most important tasks facing them in the digitalization process.

However, as most companies worldwide are or will be affected by digitalization, the question is if the specific traits of family firms impact on either their ability to take advantage of the opportunities of digitalization, or if there are challenges that could be specific for family firms. Continuous change requires increased organizational flexibility in initiating and adapting to change. Family firms might have an advantage here as they are characterized by greater flexibility through lower formalization, higher employee autonomy and higher decision-making power than other types of firms (Craig & Moores, 2015). For instance, family firms are often led by owner-managers who – unlike top managers in non-family firms – do not have to engage in lengthy approval processes for investments in new technologies or apply such processes more flexibly (Hiebl, 2015a). This may imply that some family firms could have an advantage in initiating and adapting to change and reap more value from digitalization. Related to this, research shows that during the implementation of information technology in family firms, the high level of employee commitment and participation that characterizes family firms can lead to stronger technology adoption (Bruque & Moyano, 2007). If family firms can harness this characteristic, then they could be better prepared than others when implementing technology-induced change. There is also some research evidence to support the view that although family firms have lower research and development budgets in general than non-family firms, they generate more patents and new products than other types of firms (Duran, Kammerlander, van Essen, & Zellweger , 2016). This could indicate that family firms are more efficient innovators. If this is the case, then this could present an opportunity to reap greater benefits from digitalization for less money than other types of business. Finally, the process of professionalization could be an opportunity to introduce technology-induced change in family firms. There is some evidence demonstrating that family firms who have experienced professionalization, embrace technological change to a greater extent than others. If this is true, then focusing on professionalization could be an opportunity to better introduce and deal with technological change (cf. Bruque & Moyano, 2007; Hiebl & Mayrleitner, 2019).

Focusing on the challenges related to digitalization, less than half of 160 family firms surveyed in a recent U.S. study have a strategic focus on digitalization or have updated their strategy to reflect digitalization (PricewaterhouseCoopers, 2018). This may imply that some family firms are at risk of being disrupted by competitors or rapid technological developments. The reason for this lack of strategic focus may be linked to the governance system of family firms, where, as an example, older generations resist technological change proposed by younger generations leading to less focus on strategic digitalization challenges (cf. Calabrò, Vecchiarini, Gast, Campopiano, De Massis, & Kraus, 2019; Lambrechts, Voordeckers, Roijakkers, & Vanhaverbeke, 2017). Also, non-family managers and experts can suggest important competencies relating to digitalization and change (cf. Hiebl & Li, 2018; Tabor, Chrisman, Madison, & Vardaman, 2018). If there are few such externals entering the firm, the risk of change resistance may be greater. Another characteristic is the long tenure of family firm CEOs (Miller, Le Breton-Miller, & Scholnick, 2008) and a preference for long-term investment horizons (Sirmon & Hitt, 2003). This may imply family firms are averse to change and miss either technology-related opportunities or are slow in responding to technology-induced disruption. For example, a survey of family firms in Singapore showed that only 40% of the respondents had been able to introduce new or improved offerings for their markets including technology-based innovations (KPMG, 2017). This could indicate a risk of these companies not being focused on what is driving market and customer changes.

Digitalization can also lead to discontinuous change in markets, products and services and access to customers. How managers perceive and act on such changes can mean the difference between prosperity or bankruptcy. Research shows that the family firms CEO's non-economic goals may determine whether the CEO assesses an emerging technology as being relevant enough to warrant a reaction from the firm, as well as shape and constrain the considered response (Kammerlander & Ganter, 2015). Non-economic goals include transgenerational value, the maintenance of family reputation, the continuance of personal ties, or personal affects associated with the family business. This may present challenges when dealing with disruptive change associated with digitalization, delaying the reaction speed or limiting attention due to ambiguous non-economic factors. Finally, although research indicates that family firms are more efficient at innovating than non-family firms, the question is, what type of innovation? Family firms seem to be more likely to incrementally innovate rather than pursue radical innovations (Calabrò et al., 2019). Although many family firms have a good track record in innovation and can harvest opportunities regarding incremental technological innovation, their ability to deal with radical technology shifts such as digitalization may be different.

4. EMPIRICAL INSIGHTS INTO THE DIGITALIZATION OF ICELANDIC AND IRISH FAMILY FIRMS

In 2014, we surveyed the Chief Financial Officers (CFOs) of the 300 largest companies in Iceland measured in terms of turnover (see Batt, Rikhardsson, & Karlsson, 2017). There were 192 respondents, with 118 or 40% being SMEs based on the European Commission definition, translating into a response rate well above other accounting-focused surveys (cf. Hiebl & Richter, 2018). Most of the surveyed SMEs are family firms. This survey mapped the use of management accounting and control in Icelandic companies and covered different aspects of management accounting such as costing, budgeting, performance measurement, internal control and the level of technology adoption. Focusing on technology adoption, we asked about the implementation of Enterprise Resource Planning (ERP) systems. In all, 78% responded as not using ERP, while 11% indicated ERP implementation within the last 6 years. On the use of Business Intelligence (BI) systems, 65% responded that they had not implemented a BI system, while 25% had implemented such a system in the last six years. Those who had implemented a BI system used it mainly to analyze financial information, and very few used it for budgeting, reporting, risk analyses or dashboards. When later asked what software had been implemented in their firm, 104 respondents answered that software such as SAS, SAP, Navision, Axapta, Concorde, Cognos, or Value plan were in use. This would indicate that 88% of the firms surveyed have a system which would be described as an ERP or BI system, although not being familiar with these terms. We correlated these results with the tenure of the CFO and the result show that if the CFO had been in the position for more than ten years, it was less likely that the firm had implemented these types of systems.

In 2017, we conducted a survey of Irish small and medium-sized firms on various aspects of their business, including technology adoption using a similar survey instrument to the Icelandic survey already described. Of the 108 respondents, which represented a 30% response rate based on selection criteria of turnover greater than €5 million, about two-thirds declared themselves as family firms. The survey asked a series of questions on the level of technology adoption, some of which provide insights into the level of digitalization within family firms. On average, 40% of family firms utilized an ERP or BI system, considerably less than the figure noted for Iceland. Some further interesting points can be noted on customer portal access, cloud access, CRM systems, online business and use of social media at work. Of the responding family firms, 23% offer portal access to customers with 48% reporting use of a CRM system. 51% utilized cloud technology to access their information systems, with 36% of respondents adopting an online business presence. On social media for work purposes, 38% confirmed its use. In contrast, non-family business reported considerably higher usage in all except online business presence. In addition to this lower application of digital technologies in family firms, a further question in the Irish survey found that 47% of family firms are unlikely to change their information systems within the next three years, compared to 37% of non-family firms. It is worth noting that the average size (in turnover and staff numbers) of both family and non-family firms was broadly similar, and both groups contained a broad spread of industry types. Thus, as suggested in much family business literature, the differences in technologies may indicate a level of digitalization which may be due to the family nature of the business.

5. DIRECTIONS FOR FUTURE RESEARCH ON THE DIGITALIZATION OF FAMILY FIRMS

The wording used in Section 3 above indicates that all potential challenges and opportunities in and around digitalization in family firms are not yet detailed by empirical research, but were mostly deducted from prior related research. Future research is needed to corroborate the named challenges and opportunities and to better enable us in providing advice to family firms in practice in their digitalization endeavors (see Research direction 1 in Table 1).

Also from our empirical findings presented in Section 4, several areas of future research can be suggested and are summarized in Table 1. First, in a general sense, there is a lack of literature on the differences in information systems and technology between family and non-family firms. For example, more research on the use of ERP and BI systems in family firms would be useful, and offer some explanations as to the level of digitalization. Both our aforementioned surveys suggest family firms do use both types of system, but the question is how these two systems interact in practice and if they affect firm performance, through profitability for example. There is the issue of the depth of use, as family firms seem to use BI mainly for financial analysis. BI solutions today offer a breadth of functionality for analysis, forecasting and KPI calculation/monitoring. Better use of the systems in practice could assist in the journey toward digitalization. Second, it is surprising that family firms seem to not utilize cloud technologies, social media or have an online business presence as much as non-family firms. Given the low financial resource implications of such technologies, we could speculate that family business reasons may be hindering their use, such as the lower levels of professionalization in family firms as reported by, for example, by Giovannoni, Maraghini, & Riccaboni (2011). However, this is speculation and more detailed research is needed to explore the how and why of apparently lower use of technology, and in turn digitalization, of family firms. For example, future studies could explore reasons for the low level of cloud technology, what elements of the business utilize cloud technology (e.g., finance, sales), or is there a higher perceived security risk in family firms? Third, as detailed below, family firms may be more institutionalized than non-family firms. This prompts questions as to why family firms seem more reluctant to change their information systems; for example, is it a question of skills shortage such as professional managers, a question of family attitudes and values or some other reason. Finally, it is interesting from the Icelandic data that the longer the CFO had worked in the firm, the less use there was of information technology. As the introduction of ERP and BI systems leads to changes in routines and procedures, this may be a symptom of the nature of family firms, with longer tenure of management and a possible risk averseness. Similarly, related research has found that firms more often adopt ERP systems when they have an externally recruited CFOs (Hiebl, Gärtner, & Duller, 2017). Further research could focus on why family firms are more reluctant to change their systems, potentially drawing on institutional theory insights as suggested below.

TABLE 1

Future research directions on the digitalization of family firms

Research direction	Main theme	Research questions
1	Opportunities and challenges for family firms arising from digitalization	• In how far can the alleged flexibility of family firms yield advantages in initiating and adapting to change and reap more value from digitalization? What are the associated risks and boundaries of such flexibility? • Are family firms also more efficient innovators when it comes to digitalization (cf. Duran et al., 2016)? If so, why? • How can digitalization processes be interwoven with the more general professionalization of family firms? • What factors drive family firms' aversion to digitalization? In how far does the generation in charge, long-tenured family managers and/or the presence of non-family managers play a role here? • In how far are family firms' non-economic goals related to their digitalization? • In how far does family firms' traditional strength in incremental innovations (Calabrò et al., 2019) go together with radical technology shifts such as digitalization?
2	Digitalization in family and non-family firms	• In how far do family and non-family firms differ in their level and depth application of specific digital infrastructures such as BI, cloud technologies or ERP systems? • Why are family firms as of yet more reluctant to adopt digital technologies? • How is the application of digital technologies related to family business performance? Is this relationship different for family and non-family firms? If so, why?
3	Institutional change and family business digitalization	• How can deeply institutionalized family business practices be changed in light of internal and external pressures for digitalization? • Which family business institutionalized practices are impeding digitalization and which are fostering it? • In how far can change such as digitalization come from within the family itself, and if so, how and why? What are the implications of such family-driven digitalization in contrast to change driven by other actors?
4	Isomorphism and family business digitalization	• Do legal or regulatory obligations to digitalize (e.g., tax affairs) lead to more widespread family business digitalization? If so, how? • How does the digitalization of organizations in family businesses' socially tied network affect their own digitalization? • How do professional actors inside and outside the family firm affect its digitalization?

One further, particularly interesting avenue of exploration would be an institutional exploration of family business. While institutional theories are varied — and a full explanation is beyond the scope of this chapter — they have been used to explore and explain change and stability in, for example, accounting practices in an organization (see for example, Quinn, 2014, Quinn & Hiebl, 2018). An institution can be defined as an "integrated system[s] of rules that structure social interactions" (Hodgson, 2015, p. 501), where rules "include norms of behavior and social conventions, as well as legal rules". An earlier definition by Hamilton (1932, p. 34) portrays an institution as "a way of thought or action of some prevalence and permanence, which is embedded in the habits of a group or the customs of a people". Institutions can constrain behavior, but they also can support and empower change. In general, organizations can be classed as institutions, or at least having some institutionalized practices. Given some of the distinguishing factors of family business — for example, family bonds, identification of family with the firm, binding social ties, inter-generational issues (Berrone Cruz, & Gómez-Mejía, 2012) — it seems reasonable to think of a family business as potentially a strongly institutionalized organization type. Having said that, little family business research has drawn on institutional approaches to explain, for example, change and/or stability within family firms (but see some exceptions such as Leaptrott, 2005; Soleimanof, Rutherford, & Webb, 2018).

Institutional approaches recognize both the macro and micro aspect of firms. For example, new institutional sociology (see for example, Scott, 2014) focuses on the macro aspects — such as the economy, society or an organizational field. In contrast, old institutional economics focuses on micro aspects within organizations — such as organizational routines, which are in simple terms how things are done within an organization. As hinted above, family businesses may be more prone to institutionalized practices due to the family itself — although research is needed to support this supposition. Here, if we accept that family businesses are likely to be more institutionalized than non-family business, what does this mean for digitalization? Simply put, digitalization requires change, and due to potentially deeply institutionalized practices, change may be more difficult in family firms. Some research has already shown that, for example, the presence of professional non-family actors can bring about more sophisticated accounting and control systems in family firms (e.g., Hiebl, Duller, Feldbauer-Durstmüller, & Ulrich, 2015; Songini & Gnan, 2015; Quinn & Hiebl, 2018). Thus, would professional actors such as technology experts and digital marketing experts from outside the family be drivers of change towards digitalization? To answer such a question, case-based research is well suited to explore how and why family businesses have become digitalized (to a greater or lesser extent). Or are the existing practices within family business too institutionalized and resistant to forces driving digitalization? To explore this question, a deep knowledge of how family business practices become and stay institutionalized would be required. Or could change such as digitalization come from within the family itself, and if so, how and why? In this respect the notion of institutional work (see Lawrence & Suddaby, 2006) and/or institutional entrepreneurship (see Battilana, Leca, & Boxenbaum, 2009; Maguire, Hardy, & Lawrence, 2004) may be quite useful.

Binding social ties — to customers, suppliers and communities for example — is also a noted feature of family business (see for example, Berrone et al., 2012; Cleary, Quinn, & Moreno, 2019; Gómez-Mejía Haynes, Núñez-Nickel, Jacobson, & Moyano-Fuentes, 2007). These ties could also be explored using an institutional lens around the theme of digitalization. For example, the notion of isomorphism (see DiMaggio & Powell, 1983; Scott, 2014) may be useful to explore how digitalization is taken on board by family businesses, or not. Isomorphism is typically described as being of three types — coercive, mimetic and normative. The former entails pressures from other organizations (typically governments and regulators). For example, small companies (family and non-family) are obliged by law to digitize their tax affairs in Ireland, which may lead to digitalization by default through systems utilized. Mimetic isomorphism occurs when an organization imitates another's structure or ways of operating as it perceived as beneficial. Thus, for example, family firms may encounter digitalization as other firms in their socially tied network become digitalized. Normative isomorphism is typically driven by professionals which has been already noted above in the example of professional non-family actors. These three forms of isomorphism may in summary be useful to explore/explain the processes around change to a digitalized business in family firms.

6. CONCLUSIONS

In this chapter, we have highlighted some aspects as to why family firms may differ from their non-family counterparts and what specific advantages and challenges family firms may feature when it comes to digitalization. Some snapshots from recent survey evidence from Iceland and Ireland indicate that family firms may be more reluctant in embracing digitalization. While we have speculated above on the reasons why this may be, answers will stem from future research. For such research, we have identified several areas that would be of specific interest and some theoretical perspectives that may be well suited to illuminate digitalization in family firms. Not least because digitalization affects many, and ever more aspects of business and private lives, future research is much needed to examine how family firms can exploit and master the benefits of digitalization.

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