Digital Adoption in The Family Business: A State-of-the-art Review

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Abstract: The high-volume rise of digital technology is restructuring every side of the business and profoundly impacting how the business works. The concept of management and leadership are vividly changing. However, no business can avert the implications, challenges, and opportunities that originated from the digital revolution. It pushes companies to transform their setup. Against this background, many businesses are not ready to transform. The family business is not an exception. It is expected to adopt digitalization as a keenly prevalent business practice worldwide. Furthermore, its involvement in the digital economy is still essential. However, studies on digital adoption in the family business remain limited. At the same time, family businesses have unique characteristics that make them different from other forms of business in general. It is perceived that the two issues are opposing. The family business is commonly viewed with slow evolutions. On the other hand, digitalization is characterized as a rapid action. This research is a theoretical review that aims to fill the gap by exploring the state-of-the-art digital adoption literature. In addition, it develops areas for future research primarily related to family business topics. This article carried out a systematic literature review. It employed a Prisma approach on a Scopus database with all the articles written in English. The results showed that most digital adoption literature mainly focuses on two contexts: (1) general business and (2) academic institutions. Moreover, it provides geographical trends in this domain, the most cited authors, and the top journal on this topic. This study further found that very few discuss digital adoption even in the literature on the family business. Thus, many family business areas can be explored. To this end, this study provides propositions associating digital adoption with the family business areas. At the same time, it further provides several future research agendas.

Keywords: family business, digital adoption, literature review, prisma approach, state-of-the-art

1. Introduction

The family business is a keenly prevalent business practice worldwide. It dominates up to 98% of global companies (Kets de Vries, 1993; Chua, Chrisman and Chang, 2004; Eddleston, Kellermanns and Sarathy, 2008). Hence, it plays an essential role in a country's economic growth (Fan *et al.*, 2011; Koentjoro and Gunawan, 2020). In many countries, the family business contributes more than 70% of the national income. It also absorbs labor from more than 50% of the total working-age population in the world (Poza and Daugherty, 2018). Thus, it is a trustworthy economic power source, from micro to global enterprises (Waldron, 2021). Therefore, the need to do digital adoption has caught the consideration of these key business players. Continuity is critical for them (Tirdasari and Dhewanto, 2012, 2014, 2020a, 2020b; Sigliano, 2017; Tirdasari, Indrawan and Fahmi, 2019). In addition, business operation is generally inseparable from digitalization (Cahyadi and Magda, 2021). It vividly changes the concept of management and leadership. It made this ask how the family business will do the digital adoption. Cahyadi and Magda (2021) mentioned that agility in countering digitalization is a measure of the success of a business. Digital infrastructure, such as the internet, is utilized for business development.

However, a limited business can avert the digital revolution's implications, challenges, and opportunities. Many businesses are not ready to transform. The family business is not an exception, where it is also forced to adopt digitalization. Moreover, studies on digital adoption in the family business remain limited. Most of the research on digitalization was investigated at the general company, health industry, and academic institutions. Thus, research on digital adoption in the family business is vital to understanding the domain more broadly. Understanding this area is vital because it must be ready to engage with this wave. Scholars emphasized that business transformation was of specific importance for the family business (Calabro and McGinness, 2021). Scholars revealed that the time to digitize the business is now. It is necessary to cut the lengthy bureaucratic process and maintain the entrepreneurial mindset within the family business (Burt et al., 2021). This research explores the trend or the state-of-the-art digital adoption literature.

This study found only one study carried out a systematic review of the required conditions for digital entrepreneurship adoption for the family business. Thus, this research aims to understand better the factors influencing the adoption of digital technologies in the business sectors by systematically reviewing previous works of literature. The purpose is to understand better the factors influencing the adoption of digital technologies, particularly by a family business with unique characteristics. In addition, compose an initial model, proposition, and future research agenda in the family business context. Furthermore, this study aims to update previous literature reviews. This systematic literature review followed the updated preferred reporting items for systematic review and meta-analyses (PRISMA) reporting guidance Page *et al.* (2021). It is because PRISMA reporting is complete, and the procedure is transparent. In addition, this article is part of the doctoral research on developing digital adoption models, whose factors will be identified by this study and adapted to the family business's characteristics. This study undertakes a systematic literature review of digital adoption in the family business and poses the following research question explicitly:

RQ: What digital adoption factors regarding family business characteristics need to be identified?

The present study sheds light on the specific topics of digital adoption in family businesses. Theoretically, it participates in studies related to the family business. Also, it participates in understanding the phenomena of digitalization in family businesses. The target reader for this review is threefold. First, we object to scholars who would like to get a literature review of the digital adoption factors and models of family business research. Second, we aim at family business performers who would like to determine related factors that can influence the process of digital adoption that relate to its characteristics. Last, we aim at digital vendors or developers who would like to value the family business characteristics that need to be well planned before the implementation. Furthermore, the paper takes action to the recent suggestion by Basly and Hammouda (2020) to consider family business territorial in the digital transformation study. Family business runs and grows in contexts that profoundly affect entrepreneurial and strategic attitudes.

This article is organized into seven sections. Section 1 describes the research background, and Section 2 explains the methodology, while the results are described in Section 3. Then, the discussion is subsequently discussed in Section 4. The last three sections elaborate on the conclusions of this study and suggestions for future study, acknowledgments, and a list of references.

2. Methods

This study undertook a systematic literature review to collate and synthesize works of literature on digital adoption in the family business. Three major academic databases that are the most broadly used repositories to retrieve social sciences literature, namely Scopus, ProQuest, and Emerald, were used in the data-gathering process. This current systematic literature review was conducted from November 2021 to March 2022. It was executed according to PRISMA guidelines. It has three main phases, which are 1) identification, 2) screening, and 3) inclusion (page 2020). First, the identification phase is to search for articles from various database sources. Moreover, duplicate records are removed in this phase before getting into the next phase, screening. Second, the screening phase is to filter the records based on eligibility criteria. The criteria are article type, year, subject area, and so on. In addition, this phase filters documents that can be accessed in full text. In this phase, scholars need to read the full text to sort out how many reports are sought for retrieval and reports not retrieved. The last phase is the final number of studies included in the review. Records selection was conducted without time limitation but restricted to only published English papers. Two comprehensive search queries were developed and combined using the parentheses' AND' in the search process. One identifies all the appropriate keywords for digital adoption, and another identifies the appropriate keywords for a family business. The following figure describes the work steps in conducting a systematic literature review.

2.1 Eligibility criteria

This study included four inclusion criteria to guide the authors in gathering the relevant pieces of literature for this review. First, all journal articles (IC1) with a research design ranging from quantitative or qualitative and mixed-methodology have been included in the search process. Second, only manuscripts were written in English (IC2) were included because it is a common language employed by scholars in the academic community. Third, this article has only included studies in the business and management area (IC3). Forth, IC4 was included to answer the research questions.

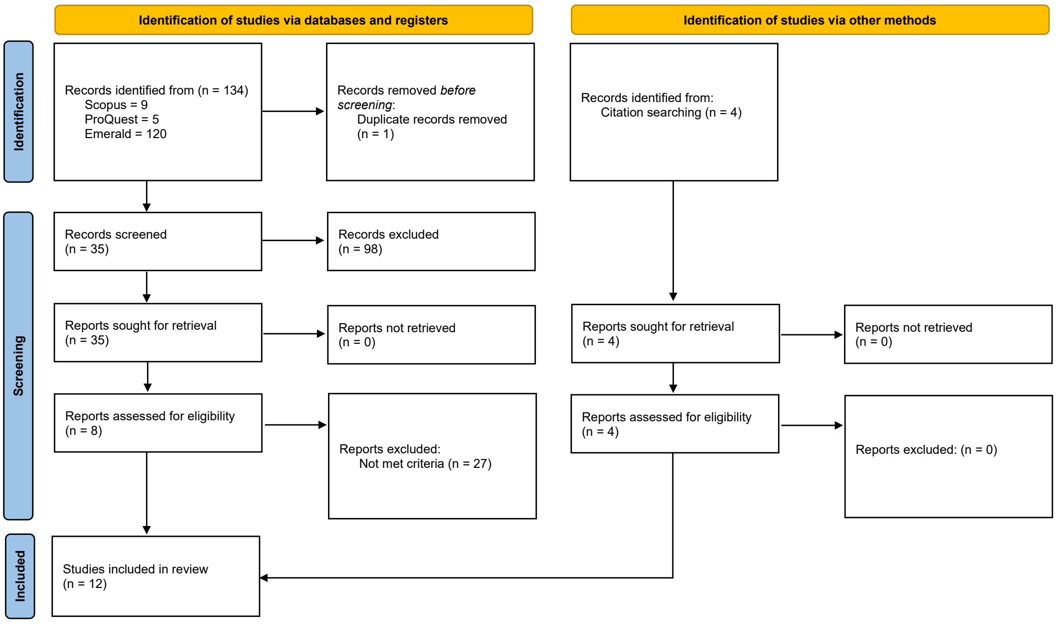

Figure 1: PRISMA flow diagram (Page *et al.*, 2021)

This article also included two exclusion criteria to improve the data search process when selecting the relevance of each paper screened. First, this research has excluded all studies that solely discuss digital adoption in non-business sectors (EC1). Second, this study has excluded all subject areas in the Scopus database, except Business, Management, and Accounting (EC2). The following table lists the inclusion and exclusion criteria for the review guidelines.

Table 1: Inclusion and exclusion criteria

Inclusion criteria	Exclusion criteria
IC1: Journal articles	EC1: Non-business sectors
IC2: Written in English	EC2: All subject areas, except Business, Management, and Accounting
IC3: Research area in business and management	
IC4: Research aimed at investigating factors that influence the digital adoption, specifically in the family business	

The selected articles were thoroughly screened initially by considering the inclusion criteria. Finally, these articles were classified according to several factors.

2.2 Information sources

The primary search was performed using online databases with generous repositories of scientific studies, including Scopus, ProQuest, and Emerald. It was performed based on the predefined search strategy. This research removed papers that the authors could not fully access. In addition, it glanced over the reference lists contained in the papers to discover related works of literature.

2.3 Study selection

The study selection was performed in the following four steps:

- 1. The search string was selected based on the research interest in reviewing related digital adoption factors in the family business. Two comprehensive search queries were developed and combined using the parentheses' AND' in the search process. The keywords included in the search queries are listed in the following table.

Table 2: Keywords included in the search queries

Topic	Keywords
Digital adoption	digital adoption, digital use, digital usage, digital acceptance, digital entrepreneurship, and digital transformation
Family business	family business, family firm, family enterprise, family entrepreneur, and family company

Those keywords were searched in each online database used in this study. The search strings in each online database are listed in the following table.

- 2. Exploration and selection of title, abstract, and keywords of identified papers were performed according to eligibility criteria. This step is done twice. First, the title and abstract are read on the website database. Second, the keywords, title, and abstract are reread after updating the details on Mendeley.
- 3. Based on the eligibility criteria, a complete reading of the not removed papers was performed to decide whether it should be counted in the systematic literature review.
- 4. The reference list of the papers was checked to discover related research and restart from Step 2.

Table 3: Search strings of this systematic literature review

Databases	Search string	Initial results
Scopus	(TITLE-ABS-KEY ("family business" OR "family firm" OR "family enterprise" OR "family entrepreneur" OR "family company") AND TITLE-ABS-KEY ("digital adoption" OR "digital use" OR "digital usage" OR "digital acceptance" OR "digital entrepreneurship" OR "digital transformation"))	9
ProQuest	ab("family business" OR "family firm" OR "family enterprise" OR "family entrepreneur" OR "family company") AND ab("digital adoption" OR "digital use" OR "digital usage" OR "digital acceptance" OR "digital entrepreneurship" OR "digital transformation")	5
Emerald	(title:"family business" OR "family firm" OR "family enterprise" OR "family entrepreneur" OR "family company") AND (abstract:"digital adoption" OR "digital use" OR "digital usage" OR "digital acceptance" OR "digital entrepreneurship" OR "digital transformation")	120

2.4 Data collection process

All results found through the initial search process utilizing the search strings were collected in a spreadsheet. Details from the primary search were also saved to a reference software (Mendeley) for relevance assessment, removing duplicates. Subsequently, based on the inclusion and exclusion criteria, the remaining records were screened for relevance according to the titles, keywords, and content drawn from the abstracts. After the initial screening process, the full text of all pieces of literature fulfilling all the eligibility criteria was downloaded. The information of these articles was further examined to discover the extent to which they suit the scopes of this systematic literature review.

The spreadsheet specified details consisting of the following information: article type, title, number of citations, and so on. Figures and tables are also extracted in the data collection process. This study assessed each potentially relevant paper by reading the full text and extracting data.

2.5 Data items collection

- 1. Demography of selected papers with the following content:
- *Distribution of digital adoption study*
- *Countries involved in a digital adoption study*
- *Sources of digital adoption study*
- *Distribution of methodologies of study*
- 2. Digital adoption factors related to the family business

The intention of elaborating data item number 1 was to offer the information to scholars, family business actors, and developers. Data item number 2 was then utilized to describe related digital adoption factors to understand the cause of the driver and barrier of digital adoption in the family business. All data extracted were explored by adopting a thematic synthesis approach. This approach helped uncover patterns and relationships within the data.

3. Results

This study reviewed twelve articles regarding digital adoption and family business. The following table summarizes the topic covered by each article.

Table 4: Articles included in the review

No	Study	Focus
1	(Ano and Bent, 2021)	Human determinants influencing factors
2	(Basly and Hammouda, 2020)	Creating a conceptual model
3	(Brenk *et al.*, 2019)	Business model innovation
4	(Chatterjee, Chaudhuri and Vrontis, 2021)	Adoption of a technology platform as a moderator
5	(Chung, Chang and Kitamura, 2021)	Digital advertising
6	(Dressler and Paunovic, 2021)	Digital work transformation
7	(Kraus *et al.*, 2020)	Family firm crisis management
8	(Pollák and Markovič, 2021)	Size of business as an influencing factor
9	(Pöschl and Freiling, 2020)	Succession on digitalization
10	(Rashid and Ratten, 2020)	The role of dynamic capabilities
11	(Reissig, Stoinescu and Mack, 2022)	Use of e-government services
12	(Soluk and Kammerlander, 2021)	Digital transformation stages

Based on the articles found, considering the importance of digital adoption to a family business, only a few numbers of scholars have explored this topic. Of twelve articles, eleven are research papers, and one represents review papers (Basly and Hammouda, 2020). There are studies regarding this topic across many countries, including French (Ano and Bent, 2021), Germany (Brenk *et al.*, 2019; Pöschl and Freiling, 2020; Dressler and Paunovic, 2021; Pollák and Markovič, 2021; Rondi, De Massis and Kraus, 2021; Soluk and Kammerlander, 2021), India (Chatterjee, Chaudhuri and Vrontis, 2021), Japan (Chung, Chang and Kitamura, 2021), Pakistan (Rashid and Ratten, 2020), and other European countries. Most research is conducted in Europe and investigates the wineries from many perspectives. However, no research has been done in Indonesia yet. The objective itself varies among the twelve works of literature. Ano and Bent (2021) explored the human factors in digital strategy implementation. Rashid and Ratten (2020) and Soluk and Kammerlander (2021) employed dynamic capabilities to investigate the family business and so on. The most commonly utilized method is qualitative (8 articles), and three articles used the quantitative approach.

Initially, in 2019 only one article was published. However, between 2020 and 2021, the was an increase in the number of articles regarding digital adoption and family business. The following figure contains the distribution of articles from 2019 to 2022.

It is essential to note that the increased number might be due to the pandemic. Pandemic has accelerated the need for transformation (Bartsch *et al.*, 2021; Msila, 2021). The high-volume rise of digital technology is restructuring the business and profoundly impacting how the business works in one way or another (Kane *et al.*, 2019; Pradhan, 2019; Sasmoko *et al.*, 2019; Maheshwari and Yadav, 2020; Soluk and Kammerlander, 2021). However, the lined decline in yearly publications in 2022 might be because of the time this study started. As of not all publication in 2022 is presented as projection. Nevertheless, to the best of the author's knowledge, the trend will be growing.

Research regarding digital adoption and the family business is spread in various journals. The following table contains a list of the journal sources and the Scopus ranking included in the review.

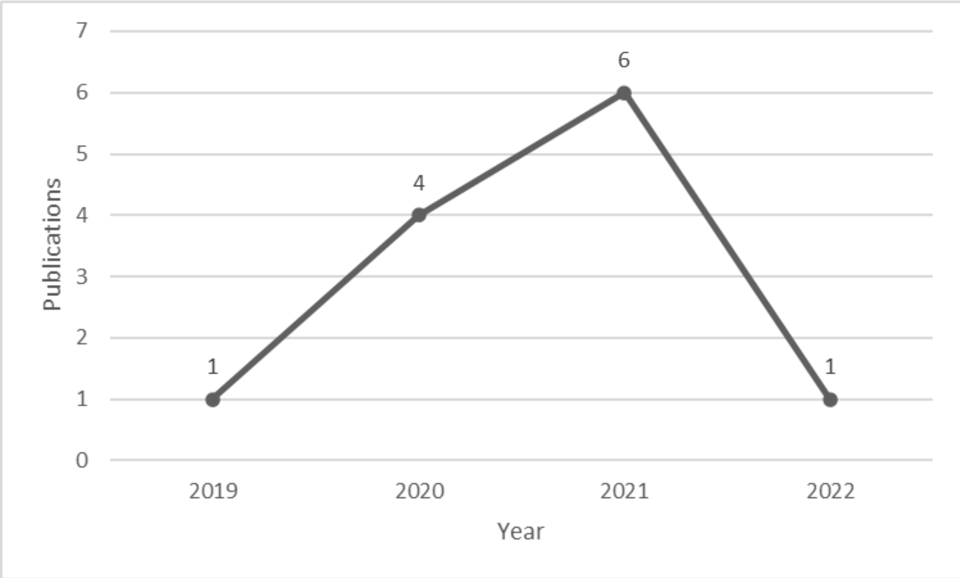

Figure 2: The annual number of publications from 20*1*9 to 2020

Table 5: Journal sources and rank

Journal	Rank
European Journal of Information Systems	Q1
International Journal of Entrepreneurial Behavior and Research	Q1
Journal of Business Economics	Q1
Journal of Family Business Management	Q1
Journal of Family Business Management	Q1
Journal of Rural Studies	Q1
The Journal of Entrepreneurship	Q1
Agricultural Economics	Q2
International Journal of Information Systems and Project Management	Q2
Journal of Enterprising Communities	Q2
Journal of Open Innovation: Technology, Market, and Complexity	Q2
Administrative Sciences	n/a

Most of the articles published in the Q1 journal are the leading ranking of Scopus. The journals are the European Journal of Information Systems, International Journal of Entrepreneurial Behavior and Research, Journal of Business Economics, Journal of Family Business Management, Journal of Family Business Management, Journal of Rural Studies, and The Journal of Entrepreneurship. Four articles were published in the Q2 journal. The journals are Agricultural Economics, International Journal of Information Systems and Project Management, Journal of Enterprising Communities, and Journal of Open Innovation: Technology, Market, and Complexity. One journal has no information regarding the Scopus ranking, Administrative Sciences.

According to geography, this study found that nine countries contributed to the study related to digital adoption and family business. Europe accounted for the highest continent contributors with 83%, and the rest in Asia. To be more specific, three countries in Asia contributed to this topic. The figure below presents the publication based on geography.

Around three articles from Asia constituted this study. Those countries are Pakistan, India, and Japan, with one article. Indonesia is not contributed yet, so there are still many areas that can be explored within this domain. Indonesia's context becomes one of the novelties of this research.

Figure 3: Publications based on continents and Asia-specific

4. Discussion

Surprisingly, the family business study has not tackled the topic of digital adoption, knowing that it is a critical medium for a company's growth recently. Like all other companies, the family business is involved in entrepreneurship and innovation to grow and sustain their business. In the beginning, it seems mismatched to connect family business and digital adoption. Scholars revealed a debate between those terms. Some found a negative relationship between the family business and digital adoption. It is because family business is risk-averse. Thus, they are less likely to invest in R&D and innovation. In addition, it tends to have a conventional deed. The result is that high-risk strategies, such as technology investment, could be detained (Fernández and Nieto, 2006). On the other hand, a stream of scholar argues a positive relationship between family business and digital adoption. For example, between family business and power to establish new products and services has a positive correlation (Gudmundson, Tower and Hartman, 2003). In addition, family businesses inherently drive a more significant innovation (Llach and Nordqvist, 2010). Compared to non-family businesses, the superior ability of family businesses tends to innovate a varied range of products and services (Westhead, 1997). In the following sections of the paper, this study depicts a preliminary model of digital adoption in the family business. In this model, three independent and one moderating variables are proposed. The model relies on the main facets of digital entrepreneurship and family involvement in the company (Basly & Hammouda, 2020).

This study adopts and adapts the main idea of Basly and Hammouda (2020) and Soluk and Kammerlander (2021). Not only because the information is contemporary and from a reliable source, but the author found their study valuable and suitable to build the proposed model. Basly and Hammouda's (2020) article suggested that a conceptual model supporting family business takes up the benefit and beats the difficulty of digital entrepreneurship. It employed the socio-emotional wealth logic, a perspective recently used by a family business study to understand the paradox regarding innovation. This perspective includes non-economy aspects such as identity, ability to exercise family influence, and continuation of the family empire. So, the desire to preserve socio-emotional wealth is related to the implementation of digitalization. Basly and Hammouda (2020) revealed three moderator variables based on the socio-emotional wealth logic: family ownership, CEO tenure, and generational involvement. Unfortunately, this article lacks evidence. Therefore, the limitation will be addressed in the up coming article of this study.

In line with Basly and Hammouda's (2020), Soluk and Kammerlander's (2021) article bridged family business with resource limitations and digital transformation. This article employed dynamic capabilities perspective and revealed barrier factors to the digital transformation. The barriers are family business paternalism, incompatible understanding of digital transformation, and member of staff resistance. They classified digital transformation into three stages. First is the process digitalization stage. It focuses on sensing the opportunities of digital. Dressler and Paunovic (2021) investigated family wineries to improve their understanding of utilizing a new technology. The article mentioned two factors that impact the deployment: pull factors or servitization factors and push factors or digital transformation factors. The second is the product/service digitalization stage. It highlights the capture of digital opportunities by mobilizing the company's resources. Business model digitalization is the third stage. It seeks to transform the company continuously. Brenk et al. (2019) mentioned that companies need to transform the current business models to adapt to the dynamic changes. They suggested a way to adapt the existing business model. It is by separating the proposed business model from the older one. The separation can decrease cognitive uncertainty associated with business model innovation processes, such as creating a new decision-making logic parallel to the existing one.

The proposed model is displayed in the following figure. It shows this study's main ideas: family business and digital adoption.

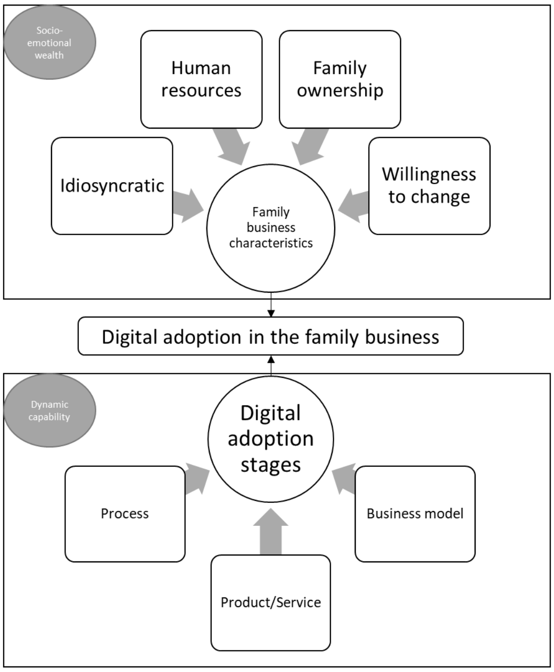

Figure 4: Proposed model

This study adopts and adapts the main idea of Basly and Hammouda (2020) and Soluk and Kammerlander (2021). Not only because the information is contemporary and from a reliable source, but the author found their study valuable and suitable to build the proposed model. Basly and Hammouda's (2020) article employed the socio-emotional wealth logic, a perspective recently used by a family business study to understand the paradox regarding innovation. Unfortunately, this article lacks evidence. Therefore, my dissertation will improve the weakness of the research by examining the proposed model quantitatively. The family business characteristics include idiosyncratic, human resources, family ownership, and willingness to change. In line with Basly and Hammouda's (2020), Soluk and Kammerlander's (2021) article bridged family business with digital transformation. This article employed dynamic capabilities perspective and revealed the stages of digital transformation: process digitalization, product/service digitalization, and business model digitalization.

5. In conclusion

Basly and Hammouda (2020) suggested that scientific studies consider family business territorial in the digital transformation study. The present study believes that the result is relevant for understanding digital adoption in the family business. The result identified four characteristics of family business: idiosyncratic, human resources, family ownership, and willingness to change, and three stages of digital adoption: process, product/service, and business model. This study only focused on family business type of enterprise, which is led and managed by family members. Moreover, it does not nail various or specific industries which may lead to different results. Even though this study acknowledges limited relevance in this regard, it generates future areas for research. For example, explore the relationship between each aspect of digital adoption and family business characteristics. Second, the family business is 80% of global companies worldwide. Consequently, it is essential to discover these ideas in various cultural contexts with varying values and characteristics embraced by the family business. Such studies would deliver a broad systematic contribution to both theory and practical implication in what is an essential yet under-studied area. Another future research is to explore the digital adoption process of family businesses specifically from the perspective of management domain, such as human resources, financial, marketing, operational, and information system.

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