Digital Business Models and Financial Performance: On the Importance of Business Renewal



Minna Saunila, Juhani Ukko, Tero Rantala, Mira Holopainen, and Mina Nasiri

Abstract This study focuses on the mediating role of business renewal in the relationship between digital business models and financial performance. An enhanced understanding of the direct and indirect influences of digital business models and business renewal will aid the construction of a more comprehensive picture of managing business models in digital transformation. The results are based on a survey of 275 Finnish SMEs. The results confirm the mediating effect of business renewal between digital business models and financial performance. This means that changes in the digital business model cannot, on their own, cause any changes in financial performance; however, through business renewal, changes in the digital business model can impact financial performance.

Keywords Digital business model • Business renewal • Financial performance • Digitalization • Digital transformation • Performance • SME

1 Introduction

As a result of the ongoing digital transformation, the business environments of companies are changing at a rapid pace. This in turn affects companies' business models. Companies are having to adopt partially or completely digital business models that challenge their traditional business models (Palmié et al. 2022; Sedera et al. 2022; Sjödin et al. 2020). According to Kohtamäki et al. (2019), digitalization

e-mail: minna.saunila@lut.fi

J. Ukko e-mail: juhani.ukko@lut.fi

T. Rantala e-mail: tero.rantala@lut.fi

M. Holopainen e-mail: mira.holopainen@lut.fi

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M. Saunila (⊠) · J. Ukko · T. Rantala · M. Holopainen · M. Nasiri LUT University, Mukkulankatu 19, 15210 Lahti, Finland

increases servitization in traditional manufacturing firms, providing opportunities regarding, for example, new platforms, intelligent products, and business models. Previous studies in the field of servitization also discuss how companies' business models change because of the transition towards the digital business model (Gebauer et al. 2020; Sjödin et al. 2020). While shifting towards the digital business model, instead of traditional, transaction-based products and services, companies deliver comprehensive, intelligent solutions that provide possibilities for real-time tracking and control of delivered solutions (Rabetino et al. 2021; Baines et al. 2020; Gebauer et al. 2020; Porter and Heppelmann 2015). Among servitization scholars, the increase in digitalization is considered an enabler and driver of the business model and value creation (Kohtamäki et al. 2019; Parida et al. 2019). In addition to the added value of providing an improved service to customers, the marketing, sales, and distribution of products and services are increasingly taking place on digital platforms and, in some cases, also as part of larger digital ecosystems. In addition to leveraging customercentric digital applications, the focus of other stakeholders within digital business models is changing rapidly. For example, it is now possible for companies to track their suppliers in real time and reciprocally.

While the transition to the digital business model offers significant new opportunities for companies, it also affects their traditional business and requires a wide range of new skills and competencies (Palmié et al. 2022). For example, the study of Huikkola et al. (2022) demonstrated that as manufacturing organizations alter their operations to become smart solution providers, they need to adjust their strategic capabilities by employing their dynamic capabilities. In addition to the development and acquisition of new capabilities, the transition to the digital business model may require investments in equipment, digital systems, and software. Thus, according to Kohtamäki et al. (2019), companies' implementation of digital servitization related to the business model adds complexity in organizations. Töytäri et al. (2018) adds that it is not obvious that digitalization (as part of the digital business model) automatically generates business benefits, but companies may achieve financial benefits by delivering added value to their customers via new types of solutions. Kohtamäki et al. (2020), citing Talaoui et al. (2018), further argues that even though companies are increasingly investing in digital solutions, such as remote diagnostics, analytics, and data visualization tools, there exists limited evidence of possible profit gains as a result of these investments. Prior research has also demonstrated that even though digital platforms provide companies opportunities and flexibility to make decisions about the sales of their services and products (Hoang et al. 2020), they may not always be beneficial from a business perspective (Hänninen and Smedlund 2021). For example, the competition on digital platforms can reduce the earnings and benefits of companies operating on those platforms as part of their digital business model (Hänninen and Smedlund 2021). As such, the implementation of the digital business model generates costs for companies in the form of various investments, and reciprocally, it should generate better performance to enable the company to operate profitably in the future. For this reason, it is important to understand how the digital business model affects the performance of companies (Abou-Foul et al. 2021).

2 Problem and Research Questions

Based on prior research, gaining profits from digital business models is a very complicated task (Linde et al. 2020; Sjödin et al. 2020). Profiting from digital business models requires curbing the commercialization of the digital business model to avoid falling into the trap of unreasonable customer requests and aggressive internal sales targets. This situation calls for business renewal to support the digital business model by providing agility (Foss and Saebi 2017) and innovating the business model continuously (Montealegre and Iyengar 2021). Business renewal refers to actions that highlight the importance of managing changes in organizations' internal and external operating environments (Deprez et al. 2018). It requires companies to stay up-to-date and understand the business opportunities of digital applications, the demands they place on companies, and how they interact with business performance. However, current literature offers few insights into how business renewal assists digital business models in delivering significant financial benefits, and significant gaps remain.

Despite the profusion of digital business model studies, there is a lack of research on the exact role of business renewal in benefiting from digital business models. This study seeks to close previously identified research gaps by examining the relationships between digital business models, business renewal, and financial performance in SMEs. Thus, the first objective is to provide evidence of the role of digital business models in enhancing financial performance within strategic renewal. The second objective is to extend the research in this stream by examining the role of business renewal in mediating the effects of the digital business model on financial performance. The phenomenon is explored through two research questions:

RQ1: How do digital business models affect companies' financial performance?

RQ2: What is the role of business renewal in mediating between a company's digital business model and its financial performance?

As an increasing proportion of companies utilize a digital business model and there is a growing need for a better understanding of their impact on business performance, the results of this study are relevant to a variety of societal stakeholders. Anyone who is somehow part of the digital transformation may find it interesting to understand more about the impact of digital business models on the performance of companies in different contexts. In addition, in spite of the limited attention it has received thus far, corporate business renewal is involved in the development and maintenance of digital business models, which is why the results of this study reveal the interplay between the digital business model, business renewal, and financial performance. An enhanced understanding of the direct and indirect influences of digital business models and business renewal will assist in forming a solid picture of the management of strategic renewal.

The rest of the study is structured as follows. First, the theoretical underpinnings of the study are presented, after which the hypotheses about the phenomenon are constructed. Following the theoretical background of the study, the research model and methodology of the study are presented. Then the results of the study are presented and discussed, after which the paper concludes with a presentation of the theoretical and managerial implications of the findings. The conclusion also provides avenues for future studies.

3 Theoretical Background and Research Model

3.1 Theoretical Underpinnings and Key Constructs

Business models can be explained as a pathway for deeply understanding business opportunities through description of value creation and value capture (Xu and Koivumäki 2019; Wirtz et al. 2016). When digital technologies serve as main actors in business opportunities, digital business models replace traditional business models, as competing in a digital environment is not possible with a traditional business model (Iansiti and Lakhani 2014; Pagani and Pardo 2017; Remane et al. 2017). Digital business models are needed because there are some differences in operating with digital products and services in comparison with traditional products. One of these differences is that reproduction of digital products and services has no marginal costs in practice, as the more users join, the more value is provided (Shapiro and Varian 1999). The other difference is that the value of digital products and services is measured by their usage, whereas in traditional products, the value is created and sold to the customers (Vargo and Lusch 2008). The next difference relates to the important role of digital platforms in digital business models—they create a balance within an ecosystem of many companies and parties (Iansiti and Levien 2004).

This type of investments in digital technologies are the main ingredients benefiting digital transformation (Venkitachalam and Bosua 2019). They offer companies new ways to reduce costs and increase revenue streams with new value propositions (Vaska et al. 2021). Thus, companies need a digital business model to identify the ways in which value is created, delivered, and captured by digital technologies (Li 2020; Verhoef et al. 2021; Weill and Woerner 2013), as well as to create guidelines for digital operations and digital business logic (Xu and Koivumäki 2019). However, in many cases, companies do not achieve the desired results, which would be reflected by an increase in customer value and improved financial performance (Tabrizi et al. 2019; Davenport and Westerman 2018). With regard to achieving the potential economic benefits, Tabrizi et al. (2019) and Matt et al. (2015) saw the digital transformation as a strategic business reform that incorporates the leverage of new digital technologies, creates new digital business models, and enables new ways to generate value. In addition, Fernández-Portillo et al. (2022) noticed that connecting digital technologies to companies' innovation strategies has a direct and positive effect on financial performance, thus mediating the desired results of the digital business. However, since digital business models can quickly fail, it is critical for most companies to strengthen their digital business model. Business renewal can mitigate this danger, supporting the digital business model by providing agility (Foss and Saebi 2017) and innovating the business model continuously (Teece 2010).

Business renewal is a bundle of activities characterized by flexibility, experiments, and innovation undertaken by companies to achieve success or alter their path dependence, which extends firms' survival in the long run (Montealegre and Iyengar 2021; Riviere et al. 2018). Digital technologies provide the possibility to cross geographical borders, thus increasing global competition, which should motivate companies to renew themselves to stay competitive (Amankwah-Amoah et al. 2021). Renewal is critical in digital business models and the provision of financial performance, as it enables companies to attain sustainable competitive advantages in the face of transformation (Al Humaidan and Sabatier 2017; Schmitt et al. 2016).

3.2 Hypotheses Development

In recent years, digital transformation and the resulting business model innovations have profoundly changed consumer expectations and behavior, as well as numerous markets, leading companies to rethink their business (Verhoef et al. 2021; Weill and Woerner 2013). In order to seek new ways of doing business, companies are seizing new digital business opportunities by investing in digital technologies and developing new digital products, services, processes, and business models to reinforce the value created for customers (Matarazzo et al. 2021; Vaska et al. 2021). For example, digital technologies have the potential to improve communication with customers, enable a better understanding of customer needs, provide a high level of involvement for customers, and deliver new value for customers through new offerings (Matarazzo et al. 2021; Vaska et al. 2021). Thus, the new digital environment has increased the need to reflect on business practices and create advanced digital business models to deliver added value from innovations (Teece 2010). In addition, the development of a new digital business model can provide digital business managers more control over their business and the ability to compete in the uncertain digital environment (Al-Debi et al. 2008).

As described, business models can be explained as a pathway for deeply understanding business opportunities through description of value creation and value capture (Xu and Koivumäki 2019; Wirtz et al. 2016). Digital technologies play a key role in the innovation and development of new business models, enabling new ways to create value through the expansion of offerings, new forms of commerce, and new forms of cross-border organization and relationship-marketing approaches (Li 2020). In the new digital world, business models help companies to explain and focus on how to achieve economic value through digital technology (Chesbrough and Rosenbloom 2002). They serve as a tool to outline the architecture of business revenue, cost, and profit, determining how a business generates value for customers and converts the value generated into profits (Teece 2010). In addition, it is worth noting that the business model for digital business should be reviewed at regular intervals to ensure its continued suitability in an uncertain digital environment (Weill and Woerner 2013; Al-Debi et al. 2008). Thus, to compete in the digital environment, companies must design their digital business model wisely and innovatively to ensure alignment with the business strategy and improve financial performance (Latifi et al. 2021; Al-Debi et al. 2008; Weill and Woerner 2013). As a digital business model is necessary to transform digital opportunities and new forms of commerce into revenue-generating activities, its impact on financial performance should be assessed (Li 2020). Based on the arguments presented above, the following hypothesis related to digital business models and financial performance is presented:

H1: Digital business models positively affect financial performance.

This study investigates the mediating influence of business renewal on the digital business model-financial performance relationship. As described earlier, there is an established link between the digital business model and financial performance. However, there is evidence that this connection may be indirect, as within digital business models, different technologies are used to generate new offerings that demand capabilities for data collection, exchange, and analysis (Schallmo et al. 2017). All these initiate novel processes, activities, and resources that require a reconsideration of how the firm generates value (Correani et al. 2020). Thus, the renewal of business processes and strategies is becoming an increasingly crucial factor for survival in the digital age (Coskun-Setirek and Tanrikulu 2021), which "includes not only the improvement of existing processes but a fundamental revisiting of the direction and portfolio of opportunities a firm is focused" (Muzyka et al. 1995). This is also supported by Witschel et al. (2019), who concluded that firms with strong dynamic capabilities are likely to successfully enact business model change in response to digitization. Dynamic capabilities refers to "the ability of an organization and its management to integrate, build, and reconfigure internal and external competences to address rapidly changing environments" (Teece 2007). Dynamic capabilities are akin to our definition of business renewal. We propose that business renewal performs a similar mediating role in the connection between digital business models and financial performance.

Our hypothesis reflects the position that digital business models require managing changes in the operating environment. The technologies involved in strategic change speed up the change, causing complexity and uncertainty in the operating environment (Matt et al. 2015; Warner and Wäger 2019). Although digital technologies initially elicit a change in the business model, they tend to also effect changes in organizational processes and culture (Warner and Wäger 2019), which means that business models in the context of digital transformation require balancing actions to adjust the digital business model to existing product processes (Rummel et al. 2021). Thus, the digital business model requires broader business renewal beyond mere changes to the existing business model. Furthermore, business renewal should enhance firms' financial performance, as firms need to renew their processes in light of digital transformation requirements in order to align the operation with the business strategy, as this is the pathway to competitiveness (Warner and Wäger 2019; Correani et al. 2020). By enhancing the potential to profit from the digitalization

of the business model, the firm renews its business processes in response to needs elicited from the digital business model. Therefore, we propose that as a firm becomes more practiced in coping with the requirements of its digital business model, this will have a positive influence on financial performance. Following the former discussion, we hypothesize the relationship between the digital business model and financial performance to be indirect, realized via business renewal:

H2: Business renewal positively mediates the relationship between digital business models and financial performance.

3.2.1 Research Model

The research model (Fig. 1) is designed to contribute to the scant body of knowledge regarding the ways in which digital business models contribute to the financial performance of firms. Drawing on the conducted literature review, the digital business model is understood as the way value is created, delivered, and captured by digital technologies (Li 2020; Verhoef et al. 2021; Weill and Woerner 2013) by creating guidelines for digital operations and digital business logic (Xu and Koivumäki 2019). We propose in our research model that digital business models facilitate firms' financial performance. However, we test a model which interrogates whether the enhancement of financial performance is a result of the digital business model itself or rather the mediating influence of business renewal, which is central to financial performance. An enhanced understanding of the direct and indirect influences of digital business models and business renewal will aid the construction of a more comprehensive picture of managing business models in digital transformation.



Fig. 1 Research model

4 Research Design

4.1 Sample and Data Collection

This study uses a survey approach to show the roles of digital business models and business renewal in financial performance. Data collected from randomly selected Finnish SMEs was utilized to test the proposed hypotheses built on the basis of the research model. SMEs have been selected for this study as they account for around 60% of value added and around 65% of employment in Finland.

About 5,800 out of 20,000 total Finnish SMEs were invited to participate in the study. The survey link was sent to the CEOs of these firms. After sending four reminders and deleting invalid responses, a total of 275 usable responses were received. About 70% of the responses were received from small companies (employing 10–49 persons and having a revenue of 2–10 million euros), while the rest of the responses were received from medium-sized companies (employing 50–249 persons and having a revenue of 10–50 million euros). About 43% of the responses were received from manufacturing companies, while 57% of the responses were received from service companies.

4.2 Measures

A survey was constructed to gather quantitative data on the digital business models, business renewal, and financial performance of SMEs. The survey was tested prior to sending it to the respondents. First, a literature review was conducted to familiarize the authors with the previous research and items previously used. Based on the review, the items were constructed by the authors. Then, researchers familiar with the topic were asked to review the items for progress, clarity, and completeness. The items were slightly modified during this process. Table 1 shows the final constructs, items, and their references.

Digital business models were measured by four items to which respondents could answer on a scale of 1-7 (1 = strongly agree; 7 = strongly disagree). They were asked to indicate whether they agreed that digitalization provides business opportunities, makes changes in forms of commerce, acts as an enabler for the extension of offerings, and acts as an enabler for relationship-marketing approaches. Business renewal was measured by four items that asked respondents to assess their firm in terms of business brand and image, sales, market share, and ability to innovate on a scale of 1-4 (1 =weak; 4 = excellent). Financial performance was measured by a single item that asked respondents to assess their firm's financial performance over the last three years (1 =weak; 4 = excellent). Two control variables—company size and industry—were used in the analysis. Company size (measured by number of employees) was coded into a dummy variable and split up into small and medium-sized firms. Likewise, industry

Construct	Items	Std. weight	α	CR	AVE
Digital business model (e.g., Li 2020; Verhoef et al. 2021; Weill and Woerner 2013)	Our company provides business opportunities with digitalization	0.693	0.799	0.873	0.633
	In our company, digitalization makes changes in the forms of commerce	0.615			
	In our company, we utilize digitalization as an enabler for extension of offerings (products and services)	0.886			
	In our company, we utilize digitalization as an enabler for relationship-marketing approaches	0.652			
Business renewal (e.g., Montealegre and Iyengar 2021; Riviere et al. 2018)	Business brand and image	0.464	0.713	0.827	0.548
	Company sales	0.810			
	Market share	0.786			
	Ability to innovate	0.457			

 Table 1
 Survey instrument

was coded into a dummy variable and split up into service industry or manufacturing industry.

Next the remedies to assess the reliability and construct validity are presented. The reliability of each construct was estimated with Cronbach's α values that were above the threshold of 0.70 (Nunnally and Bernstein 1978). Confirmatory factor analysis was used to check convergent validity. The standardized weights of all items were close to 0.50. Convergent validity was further examined by calculating composite reliability (CR) and average variance extracted (AVE) for the study variables. The CR values were over the 0.70 limit (Fornell and Larcker 1981), and the AVE values were over 0.50 (Fornell and Larcker 1981). Thus, convergent validity is supported. Discriminant validity was tested by comparing the square root of AVE and correlations between the two constructs. The square roots of both AVEs (0.706 for digital business strategy and 0.634 for business renewal) were larger than the correlations of the construct to all the other constructs (Table 2) (Fornell and Larcker 1981), which supports discriminant validity. Thus, the convergent and discriminant validity of the constructs were approved.

4.3 Bias

A test for non-response bias was executed to check the difference between first responses (the responses during the first week after the survey was sent) and later

	Mean	Std. deviation	Digital business model	Business renewal	Financial performance
Digital business model	5.03	1.265	1.000		
Business renewal	2.79	0.519	0.212***	1.000	
Financial performance	2.82	0.881	0.129*	0.438***	1.000

Table 2 Correlation matrix

Significance level *** P-value ≤ 0.001 , ** 0.001 < P-value ≤ 0.01 , * 0.01 < P-value ≤ 0.05

responses (the responses during the last week before the link was closed) (Armstrong and Overton 1977; Podsakoff et al. 2003). The results evidenced no statistically significant differences between the first responses and later responses, which means that non-response bias is not of much concern.

A test for common method bias was executed to check whether the singlerespondent design biased the results. Following Podsakoff et al. (2003), exploratory factor analysis was performed for all the study items. No single factor emerged, and the main factor extracted 34.4% of the total variance (less than the threshold of 50%). This means that common method bias is not a severe problem in this study.

5 Findings

Different model-fit criteria, including root-mean-square error of approximation (RMSEA), normed fit index (NFI), relative fit index (RFI), incremental fit index (IFI), Tucker–Lewis Index (TLI), and comparative fit index (CFI), were used to assess the fitness of the model. According to Schumacker and Lomax (2016), an RMSEA between 0.05 and 0.08 indicates a close fit of the model, while values of TLI and NFI close to 0.9 indicate a good fit of the model. According to Bentler and Bonett (1980), a value greater than 0.9 for CFI and IFI confirms the good fit of the model. Table 3 shows the results of the model-fit criteria and makes a comparison between the default model (including all the effects, as well as direct and indirect relations) and the competing model (including only direct relations). As shown in Table 3, the values of the model-fit criteria for the default model are better than those of the competing model.

Regression analysis using IBM SPSS AMOS was used to test the model (Table 4). First, the effect of the control variables (size and industry) on the dependent variable (financial performance) was checked. Then the direct effect of the independent variable (digital business model) on the dependent variable (financial performance) was checked. Finally, the mediating effect, which includes both the direct effect of the independent variable (digital business model) on the mediating variable (business renewal) and the direct effect of the mediating variable (business renewal) on the dependent variable (financial performance), was checked. As shown in Table 4,

Model	RMSEA	NFI	RFI	IFI	TLI	CFI
Default model	0.066	0.881	0.813	0.932	0.889	0.930
Competing model (only direct relations)	0.070	0.869	0.799	0.920	0.874	0.918

Table 3 The results of the model-fit criteria

none of the control variables, including size (C.R. = -1.885, P-value = 0.059 >0.05, non-significant) and industry (C.R. = 1.722, P-value = 0.085 > 0.05, nonsignificantly affect financial performance. This means that changes in the size and type of industry cannot change the financial performance of companies in a given setting. Regarding the second step, as the results of the analyses indicate in Table 4, there is no significant direct relationship between the digital business model and financial performance (C.R. = 0.241, P-value = 0.810 > 0.05, non-significant). Thus, the first hypothesis (digital business models positively affect financial performance) is rejected. Regarding the final step, which tested the mediating effect, the significant effect of the digital business model on business renewal (C.R. = 2.857, Pvalue = 0.004 < 0.05, significant) and of business renewal on financial performance (C.R. = 5.829, P-value = 0.000 < 0.05, significant) confirm the mediating effect of business renewal between digital business model and financial performance. This means that changes in a digital business model cannot, on their own, elicit changes in financial performance; however, through business renewal, the digital business model can effect a change in financial performance. In other words, financial performance can improve via growth in business renewal when business renewal is paired with the digital business model. Thus, the second hypothesis (business renewal positively mediates the relationship between digital business models and financial performance) is accepted.

6 Discussion

This study has examined the relationships between digital business models, business renewal, and financial performance in SMEs. The results are discussed below.

First, referring to H1, the results showed that digital business models do not have a direct effect on financial performance. This study was justified by the notion that digital transformation has changed the business environment, which has led to business model innovations in which companies must adopt partially or completely digital business models to compete globally (Palmié et al. 2022; Sedera et al. 2022; Verhoef et al. 2021; Sjödin et al. 2020; Weill and Woerner 2013). Previous research has shown that digital technologies have a key role in the development of new business models, which enable new ways to elevate financial performance through the expansion of offerings, new forms of commerce, and new forms of cross-border organization and relationship-marketing approaches (Li 2020). However, the results of this study do

	Estimate (unstandardized)	Estimate (standardized)	S.E	C.R	P-value
Size \rightarrow Financial performance	-0.178	-0.100	0.095	-1.885	0.059
Industry \rightarrow Financial performance	0.162	0.091	0.094	1.722	0.085
Digital business model \rightarrow Financial performance	0.009	0.014	0.039	0.241	0.810
Digital business model \rightarrow Business renewal	0.056	0.224	0.020	2.857	0.004
Business renewal \rightarrow Financial performance	1.382	0.526	0.237	5.829	0.000

Table 4 Unstandardized and standardized maximum likelihood estimates

not entirely support these notions. This study's results are in line with Töytäri et al. (2018), who suggested that in the case of digital business models, it is not obvious that digitalization automatically generates business benefits, but companies can strive for financial benefits by delivering added value to their customers via new types of solutions.

Second, in terms of H2, the results indicate that business renewal positively mediates the relationship between the digital business model and financial performance. This is in line with numerous studies that suggest a more fundamental renewal of business processes and strategies to achieve financial benefits from a digital business model (Coskun-Setirek and Tanrikulu 2021; Warner and Wäger 2019; Matt et al. 2015). Overcoming this challenge may require elements of business renewal, such as activities captured by flexibility, experiments, and innovation undertaken by companies to achieve success or alter their path dependence, which extends their survival and financial success in the long run (Montealegre and Iyengar 2021; Riviere et al. 2018). The results show that in addition to investing in digital technologies to change the business model (Venkitachalam and Bosua 2019), digital business models require a strategic business reform that incorporates the rethinking of organizational processes and culture, business processes, and operations, as well as adjustments of the digital business model to existing product processes (Rummel et al. 2021; Correani et al. 2020; Tabrizi et al. 2019; Warner and Wäger 2019; Matt et al. 2015). The results also suggest that companies with strong dynamic capabilities are likely to successfully possess a strategic business reform and business model change in response to digitization (cf. Witschel et al. 2019). Thus, the digital business model requires broader business renewal than mere changes to the business model in order to make it a pathway for deeply understanding business opportunities through

description of value creation, value capture, and financial performance (cf. Xu and Koivumäki 2019; Wirtz et al. 2016).

7 Contribution

7.1 Theoretical Contribution

From a theoretical perspective, this study contributes to research in the field of digital transformation and business models by increasing understanding of business renewal as it relates to digital business models. The aim of this research was to study the conditions under which digital business models affect financial performance. Firstly, the study suggests that digital business models do not directly affect financial success. Digital technologies enable the crossing of geographical borders, which increases global competition. Thus, utilizing digital technologies in business models without more in-depth business analysis is not enough from the perspective of financial performance. Secondly, the study suggest that companies should focus on various elements of business renewal to take full advantage of digital business models from a financial performance perspective. This refers, for example, to rethinking business processes, operations, and dynamic capabilities and aligning them with the company's strategy.

7.2 Practical Contribution

From the perspective of managerial contribution, this study shows that the digital business model itself does not directly affect companies' financial performance in the explored context. This finding demonstrates that while companies adopt digital business models in pursuit of increased performance, it is not obvious that they can improve their financial performance merely by adopting a digital business model. Thus, when seeking improvements in financial performance, companies must pay attention to business renewal. The results of the study show the mediating effect of business renewal between the digital business model and financial performance. This is something companies should focus on while adopting and updating their digital business model. If the goal is better financial performance, they must focus not only on the digital business model, but also on business renewal.

7.3 Limitations and Further Research Directions

A limitation of this study is that the results show empirical evidence from one country, which must be considered before generalizing the results. While the results of the

study increase understanding of the interplay between the digital business model, business renewal, and financial performance, there may be some country-specific characteristics that could influence the results. While the results of the study show that digital business models do not affect companies' financial performance directly, the study also raises the need for further studies to increase understanding of the effects of digital business models on companies' performance.

References

- Abou-Foul, M., Ruiz-Alba, J.L., Soares, A.: The impact of digitalization and servitization on the financial performance of a firm: an empirical analysis. Prod. Plan. & Control 32(12), 975–989 (2021)
- Al-Debi, M.M., El-Haddadeh, R., Avison, D.: Defining the business model in the new world of digital business. In: AMCIS 2008 Proceedings, vol. 300 (2008)
- Al Humaidan, S., Sabatier, V.: Strategic renewal in times of environmental scarcity: the mediating role of technology in business model evolution. J. Organ. Chang. Manag. 30(1), 106–120 (2017). https://doi.org/10.1108/JOCM-09-2015-0161
- Amankwah-Amoah, J., Khan, Z., Osabutey, E.L.: COVID-19 and business renewal: lessons and insights from the global airline industry. Int. Bus. Rev. 30(3), 101802 (2021)
- Armstrong, J.S., Overton, T.S.: Estimating nonresponse bias in mail surveys. J. Mark. Res. 14(3), 396–402 (1977)
- Bentler, P.M., Bonett, D.G.: Significance tests and goodness of fit in the analysis of covariance structures. Psychol. Bull. 88(3), 588 (1980)
- Baines, T., Bigdeli, A.Z., Sousa, R., Schroeder, A.: Framing the servitization transformation process: a model to understand and facilitate the servitization journey. Int. J. Prod. Econ. 221, 107463 (2020)
- Chesbrough, H., Rosenbloom, R.S.: The role of the business model in capturing value from innovation: evidence from Xerox Corporation's technology spin-off companies. Ind. Corp. Chang. 11(3), 529–555 (2002)
- Correani, A., De Massis, A., Frattini, F., Petruzzelli, A.M., Natalicchio, A.: Implementing a digital strategy: learning from the experience of three digital transformation projects. Calif. Manag. Rev. 62(4), 37–56 (2020)
- Coskun-Setirek, A., Tanrikulu, Z.: Digital innovations-driven business model regeneration: a process model. Technol. Soc. 64, 101461 (2021)
- Davenport, T.H., Westerman, G.: Why so many high-profile digital transformations fail. Harv. Bus. Rev. 9, 15 (2018)
- Deprez, J., Leroy, H., Euwema, M.: Three chronological steps toward encouraging intrapreneurship: lessons from the Wehkamp case. Bus. Horiz. **61**(1), 135–145 (2018)
- Fernández-Portillo, A., Almodóvar-González, M., Sánchez-Escobedo, M.C., Coca-Pérez, J.L.: The role of innovation in the relationship between digitalisation and economic and financial performance. A company-level research. Eur. Res. Manag. Bus. Econ. 28(3), 100190 (2022)
- Fornell, C., Larcker, D.F.: Evaluating structural equation models with unobservable variables and measurement error. J. Mark. Res. **18**(1), 39-50 (1981)
- Foss, N.J., Saebi, T.: Fifteen years of research on business model innovation: how far have we come, and where should we go? J. Manag. 43(1), 200–227 (2017)
- Gebauer, H., Arzt, A., Kohtamäki, M., Lamprecht, C., Parida, V., Witell, L., Wortmann, F.: How to convert digital offerings into revenue enhancement–conceptualizing business model dynamics through explorative case studies. Ind. Mark. Manag. 91, 429–441 (2020)

- Hänninen, M., Smedlund, A.: Same old song with a different melody: the paradox of market reach and financial performance on digital platforms. J. Manage. Stud. 58(7), 1832–1868 (2021)
- Hoang, L., Blank, G., Quan-Haase, A.: The winners and the losers of the platform economy: who participates? Inf. Commun. Soc. 23(5), 681–700 (2020)
- Huikkola, T., Kohtamäki, M., Ylimäki, J.: Becoming a smart solution provider: reconfiguring a product manufacturer's strategic capabilities and processes to facilitate business model innovation. Technovation 102498 (2022)
- Iansiti, M., Levien, R.: Strategy as ecology. Harv. Bus. Rev. 82(3), 68-78 (2004)
- Iansiti, M., Lakhani, K.R.: Digital ubiquity: how connections, sensors, and data are revolutionizing business. Harv. Bus. Rev. 92(11), 19 (2014)
- Kohtamäki, M., Parida, V., Oghazi, P., Gebauer, H., Baines, T.: Digital servitization business models in ecosystems: a theory of the firm. J. Bus. Res. 104, 380–392 (2019)
- Kohtamäki, M., Parida, V., Patel, P.C., Gebauer, H.: The relationship between digitalization and servitization: the role of servitization in capturing the financial potential of digitalization. Technol. Forecast. Soc. Chang. 151, 119804 (2020)
- Latifi, M.A., Nikou, S., Bouwman, H.: Business model innovation and firm performance: exploring causal mechanisms in SMEs. Technovation 107, 102274 (2021)
- Li, F.: The digital transformation of business models in the creative industries: a holistic framework and emerging trends. Technovation **92**, 102012 (2020)
- Matarazzo, M., Penco, L., Profumo, G., Quaglia, R.: Digital transformation and customer value creation in Made in Italy SMEs: a dynamic capabilities perspective. J. Bus. Res. 123, 642–656 (2021)
- Matt, C., Hess, T., Benlian, A.: Digital transformation strategies. Bus. Inf. Syst. Eng. 57(5), 339–343 (2015)
- Montealegre, R., Iyengar, K.: Managing digital business platforms: a continued exercise in balancing renewal and refinement. Bus. Horiz. 64(1), 51–59 (2021)
- Muzyka, D., De Koning, A., Churchill, N.: On transformation and adaptation: building the entrepreneurial corporation. Eur. Manag. J. **13**(4), 346–362 (1995)
- Nunnally, J.C., Bernstein, I.H.: Psychometric theory, McGraw Hill, New York. The role of university in the development of entrepreneurial vocations: a Spanish study, pp. 387–405 (1978)
- Pagani, M., Pardo, C.: The impact of digital technology on relationships in a business network. Ind. Mark. Manage. 67, 185–192 (2017)
- Palmié, M., Miehé, L., Oghazi, P., Parida, V., Wincent, J.: The evolution of the digital service ecosystem and digital business model innovation in retail: the emergence of meta-ecosystems and the value of physical interactions. Technol. Forecast. Soc. Chang. 177, 121496 (2022)
- Parida, V., Sjödin, D., Reim, W.: Reviewing literature on digitalization, business model innovation, and sustainable industry: past achievements and future promises. Sustainability 11(2), 391 (2019)
- Podsakoff, P.M., MacKenzie, S.B., Lee, J. Y., Podsakoff, N.P.: Common method biases in behavioral research: a critical review of the literature and recommended remedies. J. Appl. Psychol. 88(5), 879 (2003)
- Porter, M.E., Heppelmann, J.E.: How smart, connected products are transforming companies. Harv. Bus. Rev. **93**(10), 96–114 (2015)
- Rabetino, R., Kohtamäki, M., Brax, S.A., Sihvonen, J.: The tribes in the field of servitization: discovering latent streams across 30 years of research. Ind. Mark. Manag. 95, 70–84 (2021)
- Remane, G., Hanelt, A., Nickerson, R.C., Kolbe, L.M.: Discovering digital business models in traditional industries. J. Bus. Strat. 38(2), 41–51 (2017)
- Riviere, M., Suder, G., Bass, A.E.: Exploring the role of internationalization knowledge in fostering strategic renewal: a dynamic capabilities perspective. Int. Bus. Rev. 27(1), 66–77 (2018)
- Rummel, F., Hüsig, S., Steinhauser, S.: Two archetypes of business model innovation processes for manufacturing firms in the context of digital transformation. R&D Manag. (2021)
- Schallmo, D., Williams, C.A., Boardman, L.: Digital transformation of business models—best practice, enablers, and roadmap. Int. J. Innov. Manag. 21(8), 1740014 (2017)

- Schmitt, A., Barker, V.L., III., Raisch, S., Whetten, D.: Strategic renewal in times of environmental scarcity. Long Range Plan. 49(3), 361–376 (2016)
- Schumacker, E., Lomax, G.: A Beginner's Guide to Structural Equation Modeling, 4th edn. (2016)
- Sedera, D., Tan, C. W., Xu, D.: Digital business transformation in innovation and entrepreneurship. Inf. & Manag. 103620 (2022)
- Shapiro, C., Varian, H.R.: Information Rules: A Strategic Guide to the Network Economy. Harvard Business School Press, Boston (1999)
- Sjödin, D., Parida, V., Jovanovic, M., Visnjic, I.: Value creation and value capture alignment in business model innovation: a process view on outcome-based business models. J. Prod. Innov. Manag. 37(2), 158–183 (2020)
- Tabrizi, B., Lam, E., Girard, K., Irvin, V.: Digital transformation is not about technology. Harv. Bus. Rev. **13**, 1–6 (2019)
- Talaoui, Y.: BI-in-Practice: a look at how bi enacts framing contests and affects the service transition path. Eds. In: Kohtamäki, M., Baines, T., Rabetino, R., Bigdeli, A. (eds.) Practices and Tools for Servitization, pp. 233–247. Springer International Publishing, Cham (2018)
- Töytäri, P., Turunen, T., Klein, M., Eloranta, V., Biehl, S., Rajala, R.: Aligning the mindset and capabilities within a business network for successful adoption of smart services. J. Prod. Innov. Manag. 35(5), 763–779 (2018)
- Teece, D.J.:Explicating dynamic capabilities: the nature and microfoundations of (sustainable) enterprise performance. Strateg. Manage. J. **28**(13), 1319–1350 (2007)
- Teece, D.J.: Business models, business strategy and innovation. Long Range Plan. **43**(2–3), 172–194 (2010)
- Vargo, S.L., Lusch, R.F.: Service-dominant logic: continuing the evolution. J. Acad. Mark. Sci. **36**(1), 1–10 (2008)
- Vaska, S., Massaro, M., Bagarotto, E.M., Dal Mas, F.: The digital transformation of business model innovation: a structured literature review. Front. Psychol. 11, 3557 (2021)
- Venkitachalam, K., Bosua, R.: Perspectives on effective digital content management in organizations. Knowl. Process. Manag. 26(3), 202–209 (2019)
- Verhoef, P.C., Broekhuizen, T., Bart, Y., Bhattacharya, A., Dong, J.Q., Fabian, N., Haenlein, M.: Digital transformation: a multidisciplinary reflection and research agenda. J. Bus. Res. 122, 889–901 (2021)
- Warner, K.S., Wäger, M.: Building dynamic capabilities for digital transformation: an ongoing process of strategic renewal. Long Range Plan. 52(3), 326–349 (2019)
- Weill, P., Woerner, S.L.: Optimizing your digital business model. MIT Sloan Manag. Rev. 54(3), 71 (2013)
- Wirtz, B.W., Pistoia, A., Ullrich, S., Göttel, V.: Business models: origin, development and future research perspectives. Long Range Plan. 49(1), 36–54 (2016)
- Witschel, D., Döhla, A., Kaiser, M., Voigt, K.I., Pfletschinger, T.: Riding on the wave of digitization: Insights how and under what settings dynamic capabilities facilitate digital-driven business model change. J. Bus. Econ. 89(8), 1023–1095 (2019)
- Xu, Y., Koivumäki, T.: Digital business model effectuation: an agile approach. Comput. Hum. Behav. **95**, 307–314 (2019)



Minna Saunila (D.Sc. Tech.) is an Associate Professor at LUT University, School of Engineering Sciences, Department of Industrial Engineering and Management. Since 2018, she is also a docent of the University of Jyväskylä School of Business and Economics. Her research covers topics related to performance management, innovation, service operations, as well as sustainable value creation. Recently, her research projects have been related to digitization of services and production. She has previously published in International Journal of Operations and Production Management, Technovation, and Computers in Industry among others.



Juhani Ukko (D.Sc. Tech.) is a Professor at LUT University, School of Engineering Sciences, Department of Industrial Engineering and Management. He is also an adjunct professor at Tampere University. His current research focuses on performance measurement, operations management, digital transformation, digital services and corporate sustainability performance. In recent years, he has managed and participated in research projects related to digital transformation in companies and society. His work has been published in journals such as Information Systems Frontiers, Computers in Industry, International Journal of Operations and Production Management and International Journal of Production Economics.



Tero Rantala (D.Ss. Tech.) is a Postdoctoral Researcher at LUT University, School of Engineering Sciences. His current research focuses on performance management and measurement in digital business environments and sustainable business contexts. He has previously published in journals such as Technology Analysis & Strategic Management, European Journal of Operational Research, Technovation, Journal of Cleaner Production, Information Technology & People, and Education and Work.



Mira Holopainen (M.Sc. Tech.) is a Doctoral Student and Junior Researcher in the School of Engineering Sciences at LUT University, Finland. Her research is related to performance measurement and management as well as digital transformation of industrial companies.



Mina Nasiri received her D.Sc. degree from LUT university in February 2021 in the field of Industrial Management. Her research interests lie in digital business strategy, digital supply chain, digital transformation, digital innovation, corporate sustainability, smart technologies, performance measurement and management, operations management, and sustainable strategies. Her works have been published in different journals such as Technovation, Information system frontiers, Technology analysis and strategic management, Sustainable development, Computers in industry, and Journal of cleaner production, International journal of operations and production management.