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Financial Determinants of SME Activity in Developing Countries

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The role of financial technology and entrepreneurial finance practices in funding small and medium-sized enterprises

Piotr Łasak[1]

Abstract

PURPOSE: *The traditional sources of financing (bank loans) cannot be treated as an essential source of financing for SMEs in developing countries. For this reason, this group of entities uses many alternative sources, from bootstrapping to microfinance and crowdfunding. During the last decade, a significant contribution in this area has been done by financial technology. The purpose of this study is threefold: 1) to present the role of financial technologies in financing SMEs, 2) to examine the role of entities based on financial technology in financing SMEs in developing countries, and 3) to consider other non-bank aspects of financing SMEs, leading to the improvement of the financial situation of these entities. The in-depth analysis of these entrepreneurial finance practices will be developed in the following papers presented in this Issue.* ***METHODOLOGY:*** *This study employs a theoretical approach based on a narrative literature review. The primary attention is focused on applying financial technology as a stimulant for the finance of SMEs in developing countries.* ***FINDINGS:*** *As a consequence of the financing gap for SMEs within the traditional financial system, these entities use non-bank financing based on financial technology. The research confirms that financial technology plays a crucial role in fostering the financial situation of SMEs in developing countries and providing greater financial inclusion for these entities. Both, financial technology and enterprises based on this technology contribute significantly to the improvement of efficiency of financing SMEs in emerging markets. They also provide a broader range of services, than were offered by the traditional financial sector. Regarding the other aspects of SME finance, it is essential to implement such ways of financing like microfinance services and crowdfunding. Such funding mechanisms, together with the budget process and the compliance under the conditions of e-tax systems, are important determinants of current entrepreneurial finance.* ***IMPLICATIONS:*** *The paper describes the financing of*

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SMEs in developing countries. The in-depth picture of the SME's financial situation, focusing on the technological development in this area, provides essential insight into this still poorly explored area. It also offers important premises for shaping the post-pandemic policy to support their further growth. ***ORIGINALITY/VALUE:*** *Despite growing theoretical and empirical literature about entrepreneurial finance, this study aims to contribute to the role of financial technology in this area. The impact of financial technologies and the role of fintech-based entities on SME activity in developing countries are still poorly researched. Moreover, the research provides a brief overview of other SME funding sources and their determinants in this group of countries.*

Keywords: *financial technology, fintech, small and medium enterprises (SMEs), developing countries.*

INTRODUCTION

At the beginning of the third decade of the 21st century, and during the particular circumstances caused by the COVID-19 pandemic, it is essential to raise some questions about financing small and medium-sized enterprises (SMEs). This subject is of particular importance in developing countries, where, on the one hand, entrepreneurship is the basis for the functioning of broad social strata. On the other hand, the availability of financing primarily determines the development of economic activity. It is highlighted in the literature that limitations in access to finance are one of the biggest obstacles associated with the functioning of SMEs (IFC, 2020). The size of an enterprise always matters when considering financing business activity. SMEs have more significant problems with access to financial sources than their larger counterparts (Gabriel, 2015; Godke Veiga & McCahery, 2019; Thanh et al., 2011). SMEs in developing countries often face numerous obstacles to accessing finance, and the obstacles are more remarkable for them than for larger firms. Due to their size, previous experience, and business profile, these enterprises often have limited access to financing through the traditional banking system. In such a situation, they are looking for other alternative sources of financing.

The COVID-19 pandemic had a very negative impact on the functioning of small and medium-sized enterprises. This applies to both their operating activities as well as financing (Mutinda Kitukutha, Vasa, & Oláh, 2021). A study published by the International Finance Corporation (an entity belonging to the World Bank Group) emphasises that SMEs were affected by the COVID-19 pandemic in a more brutal way than larger firms (Adian et al., 2020). There are several channels of the negative impact of COVID-19 on this group of enterprises, namely: a supply channel, a demand channel,

uncertainty, and restrictions in access to financing. Significantly, SMEs are overrepresented in these sectors most affected by the crisis. Smaller firms are also more fragile and have weaker supply chain capabilities than larger entities. They also do not have good tools to help them build resilience during the crisis. The situation caused by the pandemic means that the problem of financing SMEs has regained its importance. This is due to the deepening of the problems of access to financing, but also to the dynamic increase of the use of financial technologies, which has been taking place since the beginning of the pandemic.

The pandemic caused most SMEs to leave without access to traditional financing (bank loans). Many reasons explain why this kind of enterprise has worse access to funding than larger companies. Among them are a lack of history, sizeable assets, and lower resistance to economic fluctuations than large entities. The country of origin is also significant. Bakhtiari et al. highlight that an underdeveloped financial system can also aggravate the credit constraints for SMEs (Bakhtiari et al., 2020). All of these factors cause that SMEs should pay greater attention to searching for alternative financing sources than in the case of large enterprises. For this reason, such solutions like bootstrapping and crowdfunding became vital aspects of supporting private business initiatives financially (Konhäusner, Semmerau, & Grunert, 2021). They play a crucial role in those projects where traditional market financing would not be applicable. It is imperative to reflect on what factors determine the success of such types of funding. For many SMEs operating in developing countries, their successes depend not only on the availability of financing but also on many other aspects related to entrepreneurial finance. Nowadays, a big challenge for businesses, especially SMEs in developing countries, is to optimize conditions for the company's functioning. It includes both external and internal factors and processes. External factors embrace local needs in a particular country, like local financial market development, tax systems, the social situation of entrepreneurs (the significance of race, gender, and social class), and the government policy-oriented supporting financing processes (microfinance).

Despite the external conditions, fundamental for their growth and performance are the internal aspects of funding SMEs. These factors include various financial and social processes that significantly impact business operations. Many of them are critical determinants of functioning SMEs in developing countries. The development of financial technology and the new economic circumstances caused by the COVID-19 pandemic have a significant impact on the financing of SMEs. The enterprises use technology to enable their access to funding and provide diversification of the funding for SMEs. Even those entities, which have access to bank financing, can reduce their

exposure to banks by applying for non-bank funding (Disse & Sommer, 2020; Eça et al., 2021). The new ways of financing are significant in emerging markets where SMEs have limited access to traditional financing. Non-bank financing in these countries is usually more accessible and cheaper than the conventional sources (Arner et al., 2015). It is the consequence of the fact that many SMEs in these countries have been excluded from traditional financing (Fouejieu et al., 2020). Apart from other forms of funding, like microfinance services provided by non-bank institutions, bootstrapping and crowdfunding, the entities whose activity is based on financial technology (called fintech) play a crucial role in financing SMEs. They bridge the gaps between financial service providers and SMEs, leveraging data and lowering transaction costs (Stickney, 2016).

The literature on financial technologies and fintech-based enterprises highlights the growing role of financial technology in financing SMEs and its impact on the inclusive growth of these enterprises (Łasak & Gancarczyk, 2021a). The importance of financial technology comes not only from the fact that it enables greater efficiency of traditional financial institutions but also from their ability to modify traditional financial services and create new services. In consequence, traditional relations of SMEs with banks are replaced by non-bank financing providers or even networks of such providers (unique financial ecosystems are created) (Blancher et al., 2019; Łasak & Gancarczyk, 2021a). Very often, fintech enterprises are integrators of such ecosystems, and their activity is more important for financing SMEs than incumbent banks and other traditional financial institutions.

METHODOLOGICAL APPROACH

This paper aims to identify and interpret the role of financial technology (fintech) in financing small and medium-sized enterprises. The second aim is to define the character of fintech entities in financing SMEs in developing countries. The third goal is to present in a synthetic way the content of other papers presented in this Issue. They are non-bank ways of financing SMEs and some related aspects, significant in the current field of entrepreneurial finance. The starting point in the discussion about the role of fintech indicates the growing importance of financial technology and enterprises based on this technology in financing SMEs. The concept of fintech is usually understood in two ways. It means, firstly, a technology used in financial services, and secondly, enterprises (start-ups) whose operation is based on financial technology. This paper uses the terms “financial technology” (the first

meaning) and "entities based on financial technology" (the second meaning) to distinguish between the two.

The growing but a premature stage of research on the impact of financial technology on business activity and entrepreneurship, and the predominance of qualitative studies in this area, justify the adoption of the narrative literature review. The focus was primarily on the body of work related to financial technology (fintech) in the context of SME functioning. The literature search was performed in the Scopus resources published in 2010–2021. In total, 65 items were returned upon the use of the keywords "financial technology" or "fintech" and "SME." After the initial search, the further selection was narrowed down to those papers with "open access" status, resulting in 15 items. After in-depth studies of the papers selected in this way, a manual search was performed in the Google Scholar source. In this way, 65 items related to this research topic were obtained. The other sources, which Google Scholar also identified, refer to the problem of entrepreneurial practices in financing SMEs. They correspond and create a research background to the different papers presented in this Issue.

A narrative literature review is applied to present the main processes in the studied area and present the main assumptions. The contribution of the paper is to identify the current situation in the research area and the main aspects of fintech contribution to SMEs financing in the context of other forms of financing these entities, as well as the role of other instruments of corporate finance management (e.g., tax management, budget processes, the part of microfinance capital). The critical context to the analysis is provided by the current situation created by the COVID-19 pandemic. The research questions that guides this paper and this Issue are:

RQ 1) What is the role of financial technology in financing SMEs?
RQ 2) What is the role of fintech entities in financing SMEs in developing countries?
RQ 3) How does non-bank financing improve the financial situation of SMEs in developing countries?

The COVID-19 pandemic creates the background for the research. It has proved a substantial negative financial impact on businesses, especially SMEs. The main focus of the Issue is on enterprises from developing countries, as they are the most exposed to negative consequences resulting from limited access to traditional financing and the most affected by economic disruptions caused by the pandemic. The use of new technologies increased access to

non-bank financing sources. The use of various activities related to financial management may significantly improve the situation of these enterprises.

The remainder of the paper is organized as follows. Section 2 presents the literature review focused on various aspects of financing small and medium-sized enterprises in developing countries. Section 3 contains the Issue's contribution and highlights how financial technologies improve SME access to finance. Moreover, it discusses such non-technological aspects as the budget process and the role of microfinance. Section 4 presents directions for further research related to the issues addressed in this Issue.

LITERATURE BACKGROUND

The role of financial technology in fostering SME finance

SMEs play a significant role in the economies of developing countries. They are pivotal for the economic development of these countries. Usually, such enterprises are responsible for a large share of local employment and provide a livelihood for a large part of these societies (Jha & Kumar, 2020). They also trigger local investment and the growth of innovations. These enterprises, contributing to the economic development of developing countries, face many obstacles related to their activity and access to funding sources (Disse & Sommer, 2020). Here is an excellent opportunity for the application of new financial technologies. Their participation improves operation efficiency and provides capital where traditional financial institutions cannot offer such ways of funding. They are significant, especially for the poorest parts of these societies (Bhagat & Roderick, 2020; Lu et al., 2021). Digital finances have become responsible for providing new financial services via the Internet, mobile phones, and other digital solutions.

There is often a reference to the term "fintech" in the literature, which is a shortcut of the term "financial technology." However, such a definition is too much of a simplification and requires clarification. The term "fintech" can be understood in two ways. Firstly, it is a technology, and solutions based on this technology are used in financial services. Here can be included such technologies and solutions as: artificial intelligence (AI), big data analytics, Distributed Ledger Technology, cloud computing, and some others (Chen et al., 2019; *FinTech Action Plan*, 2018; Mehrotra, 2019; Ozili, 2018). Secondly, the meaning of the term "fintech" is connected with entities (start-ups) based on financial technology (Choi & Huang, 2021; Drasch et al., 2018; Gomber et al., 2017; Schmidt et al., 2018; Walker & Morris, 2021). There are many areas in financial services where such start-ups can operate – from

mobile payments services, through online lending, to savings and investment (Langley & Leyshon, 2021).

Financial technology significantly changes the existing business models of banks, other financial and non-financial institutions, and also SMEs. Through digital transformations, all these entities became beneficiaries – banks, fintech start-up companies, SMEs, and their customers (Łasak & Gancarczyk, 2021a). Lu et al. (2021) point out three aspects of financial processes related to application of financial technologies in business in developing countries. They are: decrease in information asymmetry (due to the applications of data analytics), the geographical dimensions and space (due to ITC implementation), and the reduction of costs of many activities and offered services (due to the application of many different financial technologies) (Lu et al., 2021). Financial technologies also play a significant role in the transformation of SMEs and their better adjustment to the current economic needs (e.g., circular economy, sharing economy) (Pizzi et al., 2021).

The COVID-19 pandemic was a stimulus for the acceleration of the involvement of financial technologies in the development of financial processes. Similarly to big companies, SMEs also utilized new financial technologies and innovations based on these technologies to adjust to unique circumstances created by the COVID-19 pandemic (Banaszyk et al., 2021). In the face of the pandemic, many SMEs implemented new technological solutions and adapted new financing techniques to their business models (Harel, 2021). This is significant, especially in developing countries where the access of SMEs to traditional financing is limited. The intensified digitalization processes lead to greater access to new, non-bank solutions like crowdfunding or digital lending platforms (Augustine, 2019; Wahjono et al., 2021). It is essential for firms with a worse financial situation (e.g., lower liquidity and level of stable funds) (Eça et al., 2021). They are also responsible for providing financial instruments like mobile money and creating financial ecosystems in which non-bank technological companies offer many essential services (Disse & Sommer, 2020; IFC, 2020). Such fintech solutions are completed by local banks, which have better access to SMEs than big banks (Lu et al., 2020). It creates an excellent opportunity for developing the mechanisms of financing SMEs, especially in financially excluded developing countries.

The entrepreneurial practices in financing SMEs

The specificity of financing and financial policy performance in SMEs differs from large companies. In the case of such entities, access to financing sources is essential, and the internal features and activities undertaken in these entities are related to the management of their finances. Business conditions

also have great importance in the finance of these entities. Among the firm-specific internal factors and determinants of financing, might be enumerated: profitability, age, tangibility, and growth. Regarding the business conditions, there are country-specific (macroeconomic) conditions and industry-specific (competition, level of development, etc.) conditions (Kumar & Rao, 2015). It can be seen that in the case of SMEs, behavioral aspects are also important (Kijkasiwat, 2021; Yazdipour, 2011). For this reason, of great importance is the development of sources of financing placed outside the traditional financial system and many social and psychological factors supporting the process of funding SMEs.

Researchers dealing with SME issues for many years have been combining the financial performance of these entities with the processes used in the financial policy and accounting systems used by these entities (Häckner & Nilsson, 1999; Khin et al., 2014). One of the most essential aspects of SMEs financial policy is the budget process. This process belongs to firm-specific mechanisms and is part of a more extensive process of management, oriented on improving the financial performance of a business. The budgeting process is at the center of SMEs' financial policy. It combines other functions and procedures that contribute to the final result of the company's activity (Meric & Gercil, 2018; Schubert & Kirsten, 2021; Vuong & Rajagopal, 2020). The budget procedure should be integrated with other processes implemented within the enterprises' structures (Nso, 2020).

The functioning of SMEs depends to a large extent on the systemic regulations and solutions in force in a particular country. One such factor that plays a significant role is the tax system. The digitalization of public services provided a new solution – an e-tax system. Among the main advantages associated with the system are the improvement of revenue collection by the country's public finance and the improvement of compliance for SMEs. Such aspects like tax compliance costs and difficulties in adaptation to the existing guidelines have been a significant obstacle for SMEs in many countries (*Taxation of SMEs in OECD and G20 Countries*, 2015). The convenience introduced thanks to electronic taxation (integration of many services like tax declaration, payment, and refund all in one IT application) facilitates many enterprises' activity and reduces complicated tax payment procedures (Le et al., 2021). It becomes significant to recognize the broader role played by the tax system towards all participants of this system. The e-tax system can be an essential tool for shaping the state policy oriented on entrepreneurship development.

Microfinance also plays a crucial role in SME development, apart from tax policy and financial policy. Such enterprises have limited access to capital markets, and a similar situation is often related to banking financing. For this

reason, microfinance has become a significant source of their funding. It is prevalent in developing countries where there is limited access to traditional financing (Kucii, 2018; Moussa, 2020).

THE CONTRIBUTIONS

Fintech participation in SMEs' financial inclusion

Today the entire world is undergoing a digital revolution that is taking many forms and extending its reach to new sectors of the economy. The ongoing changes also affect the financial markets, where financial technology becomes more and more important (Chen et al., 2019; Zavolokina et al., 2017). In addition to many other areas related to the functioning of financial markets, financial technology is playing an increasingly important role in financing business activity. Some researchers highlight that fintech companies are an important financing source for financially constrained enterprises (Cornelli et al., 2019; Xiang et al., 2018). This has become particularly visible since the outbreak of the global financial crisis of 2008–2009. The crisis reduced access to finance for many businesses, especially SMEs, which became too risky for local banks in many countries (Ahmed et al., 2016).

It is worth emphasizing the great importance of financial technologies in the context of business activities because, in the vast majority of research, much more attention is paid to the impact of technology on society (consumers) (Safitri, 2020). This aspect is vital that some developing countries have decided to implement reforms supporting SMEs non-bank financing (Gutierrez et al., 2019; Lukonga, 2021; Mavilia & Pisani, 2020). These reforms have fostered non-bank funding sources, alternative equity markets for SMEs, venture capital, microfinance, and leasing. To a large extent, these initiatives are limited due to the low level of technological advancement in some countries (e.g., African or Asian). For this reason, many countries place great emphasis on the need to digitalize business activities in their domestic economies. They put digitalization at the center of implemented reforms (Loo, 2019; Lukonga, 2021; Setianto, Sipayung, & Azman-Saini, 2022). This is especially important in such countries where SMEs experience a lack of public support and access to public finance.

Considering the two definitions of fintech presented earlier, it is an imperative research challenge to analyze their significance in the context of financing SMEs. The first essential aspect is the role that financial technology plays in supporting the activities of SMEs, and how financial technology enables the financing of SMEs in developing countries.

When answering this question, it should be noted that digitalization and financial technology development provide many services for SMEs, like payment, settlement, investment, and financing. It is the same range of services as the services provided to the public (non-business customers). In developing countries, however, the process of financial inclusion is much more important than in developed countries, which results from limited access to financial services via the traditional financial sector. The process of financial inclusion covers both these entities and society. It enables business entities to access bank accounts and remotely perform many transactions and other services. The development of financial services for SMEs, thanks to financial technologies, also contributes to the growth of employment, trade, and innovation development (Coffie et al., 2021; Hasan et al., 2020; IMF, 2019). The application of advanced technologies contributes positively to the investment processes and enhances the competitiveness of these enterprises. Table 1 presents selected mechanisms of the impact of financial technologies on SMEs in some developing countries. Significantly, financial technologies offer SMEs a broader range of services than traditional financial lenders. Apart from services like payment or lending, they support SMEs growth by providing innovative business models (Kandpal & Mehrotra, 2019). It should be noted that the impact of financial technologies on SMEs is not the same everywhere. There are some countries with limited access to technology, and fintech funding is responsible for only a small part of traditional funding. However, there are also locations where the importance of this financing is increasing. Such countries include China and other Asian countries (Cornelli et al., 2019; Lu et al., 2021).

Table 1. The examples of financial technology that support financing SMEs in developing countries

Type of technology	The role in financing SMEs	Financial service and business activities	Countries
Artificial intelligence	Improvement of the credit assessment process; enable biometrically identification	There are several dozen fintech companies in Nigeria that enable access for SMEs to financial services	Nigeria
Big data	Platformisation of SMEs; big data credit scoring	This technology fosters the development of microfinance services	Ethiopia, Kenya
Distributed Ledger Technology (Blockchain)	Enables open shared and distributed public records of information that cannot be altered	This technology facilitates faster cross-border payments and the creation of reliable electronic registers of leased and moveable assets	Algeria, Iran, Jordan, Lebanon, Egypt, Pakistan, Tunisia

Source: own elaboration based on Babajide et al. (2020); Brooks (2021); Hill (2018); Pompella and Matousek (2021).

The second essential aspect related to the fintech-driven mechanisms is the role of fintech entities in financing SMEs in developing countries. This research problem is related to the second meaning of the definitions of the fintech term. Before answering this question, it should be noted that, contrary to the theoretical approach, in practice, there is no clear distinction between different types of fintech-driven start-ups. The use of financial technologies in entities may come down to various organizational forms (BIS, 2018). Lai (2020) highlights that they can be both large technology firms and small start-ups. The core feature is that they are non-financial companies entering into financial services provision and their competitive advantages come from innovative technologies (Lai, 2020). The cooperation between banks and fintechs creates synergies, which is also beneficial for non-financial enterprises. The implementation (utilization) of fintechs into business processes makes all participants more efficient compared to their former way of activity (Łasak & Gancarczyk, 2021b).

Similarly, like in the case of technology, the fintech-driven entities exert significant influence on SMEs in developing countries (Table 2). The selected examples and many others confirm that the range of services offered by fintechs for the SMEs in developing countries is much broader than the services offered by incumbent financial institutions. Despite the fact that fintechs play a crucial role in the provision of basic financial services for society and especially SMEs (like payments and settlements) (Mavilia & Pisani, 2020; Sjamsudin, 2019), they also offer such services as decentralized fundraising, facilitating public-private partnership, offering data-analytic services (monitoring the market and business results) and many other services (Ahmed et al., 2016; Nemoto & Yoshino, 2019). Fintechs can create platforms that connect SMEs with other entities, their customers, cooperators, and society.

Regarding the issue of financial inclusion for SMEs in developing countries, three different things should be highlighted. Firstly, small fintech start-ups often play a significant role in big companies. Such big companies like Baidoo, Alibaba, or Tencent (BAT) are using financial technologies to play a substantial role in financing SMEs in developing countries. The literature highlights that such fintech loans complement credits offered by traditional financial institutions (Cornelli et al., 2020; Zhang-Zhang et al., 2020). Secondly, even in developing countries, the scope and degree of use of fintechs in the provision of services to SMEs depend on many factors. Here, such factors as firm ownership, size, and former access to traditional banks can be enumerated (Xiang et al., 2018). Thirdly, financial ecosystems should be built for the greater inclusion of such companies. Fintech is present in many areas of banking activity, and for this purpose, they create financial ecosystems. Also, they very often act together with traditional banks. Due to

complex ecosystems, they offer a broad range of services for business (among others: payment, lending, saving, and insurance) (Palmié et al., 2020). The participation of financial technology improves the efficiency and costs of financial services, and serves all market participants, especially SMEs.

Table 2. The examples of entities based on financial technology and their impact on SMEs in developing countries

Name / Type of fintech	Example	Financial service and business activities	Countries
M-Pesa (Vodafone M-Pesa Ltd.) Information communication technology (ICT) company	M-Pesa is a mobile phone-based money transfer service. The service is offered in many developing markets. In some countries (e.g., Kenya), over 95 percent of SMEs' payments are accomplished via this service.	Payment services (mobile money, card payments, online payments)	China, India, Egypt, Jordan, Lebanon, Morocco, Pakistan, Tunisia, Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyz Republic, Tajikistan, Uzbekistan, Kenya, Nigeria
JUMO Information communication technology (ICT) company	JUMO is a fintech company that facilitates contacts between SMEs and customers in developing countries.	Maintaining relations with customers	
WeBank Fintech start-up lender	The Chinese entity WeBank is an example of a fintech dedicated to supporting SMEs	Support for the growth of SMEs. About 80% of SMEs do not have access to bank credit in China, and such entities like WeBank finance them.	
Lydia P2P payment start-up	Lydia is a social interface that enables payments and access to loans for SMEs. Its activity embraces a broad range of services like setting up accounts, and getting payment cards, loans, insurance, and some other financial services.	Reduce the SME funding gap.	

Source: own elaboration based on literature: Babajide et al. (2020); Bhagat and Roderick (2020); Hammerschlag et al. (2020); Hill (2018); Iman (2018); Zhang-Zhang et al. (2020).

Entrepreneurial finance practices of funding SMEs

The current Issue is also aimed at considering other non-bank aspects of financing SMEs. The in-depth analysis of these entrepreneurial finance practices is developed in the following papers. Their goal is to answer the question, how do non-bank ways of financing improve the financial situation of SMEs in developing countries? They provide several topics related to the practices applied in funding SMEs. Together with the former part related to financial technology, they offer a significant contribution to the description of the contemporary situation in the field of SME financing. The additional value of the research results from the current situation, caused by the COVID-19 pandemic, and searching for new sources of financing by SMEs. All of the papers present a whole Issue relating to three levels: 1) the internal processes in financial management, 2) the external conditions enabling financing SMEs, and 3) the impact of the pandemic on the functioning SMEs. These themes are based on quantitative and qualitative research and critical literature reviews in developing countries. The research issues included in the individual papers (except for the text about crowdfunding) are based on the data or examples related to business situations in selected developing countries, namely, Kosovo, Pakistan, and Vietnam. They contribute to a better understanding of the financial determinants of SME activity in such countries. The paper about crowdfunding has a more general nature and links theoretical issues with the mechanisms of reward-based crowdfunding in Germany.

Considering the external conditions of SME finance, attention should be paid to the environment that shapes the requirements for the functioning of SMEs and their finance. This dimension is represented by the paper on adopting an e-tax system in this Issue. This topic is presented in the paper written by Do et al. (2022), which investigates the mediating impact of adopting the e-tax approach. The given case considers the situation in Vietnam, where the tax administration promotes reforms with a taxpayer-centred orientation. The paper discusses the mediating impact between attitude towards the e-tax system and tax compliance. The authors reveal the two independent variables (attitude towards e-tax design and adoption of the e-tax system) with the dependent variable tax compliance. This is paper, in which a quantitative analysis based on data collected from the selected market was applied – here, the research sample comes from 435 SMEs operating in Vietnam. The calculations were performed with Cronbach's Alpha tool followed by exploratory factor analysis (EFA). The research leads to some policy implications aimed at improving tax compliance in the considered country: enhancing the IT infrastructure, disseminating tax law, ensuring coordination between many participants (tax authorities, tax officials,

enterprises, and other authorities), improving supervision, promoting the education of tax issues, and developing a strategy based on tax compliance.

Among the significant internal mechanisms that shape the financing of SMEs is considered the budget process. Tuan and Rajagopal (2022) wrote a paper related to this Issue. The authors discuss the situation of the Vietnamese business and its performance. They present research about the mediating effect of the budget process and its supporting role for SME growth. The paper highlights that proper management needs to adopt an adequate approach to budget processing. It is critical for cash flow management and the overall financial situation of SMEs. The authors applied Cronbach's alpha exploratory factor analysis to provide the research's high level. The important contribution is that it presents a case study of Vietnamese SMEs. The authors are aware of the limitations of Vietnamese SMEs and their impact on their international competitiveness. As suggested in the paper, a greater focus on the budget process should improve these enterprises' competitiveness and contribute to the overall performance of these entities. As they assume, the mediating role of the budget procedure is critical for the financial situation of these businesses. It also enables them to enhance their competitive advantages globally. To take advantage of this opportunity, enterprises must be more committed to implementing the budget processes. The second significant contribution is that the authors highlight the links between the economic processes and social aspects of SME functioning (labour market). They pay attention to the fact that SMEs play a significant role in supporting the socio-economic situation in Vietnam. The conducted research also identified additional factors impacting SME performance. These factors embrace strategy implementation, organizational commitment, and managerial control. It can play a significant role in future research.

Another dimension of these conditions that shape financing SMEs is the microfinance environment. The paper by Jalil, Ali and Ahmed (2022) is dedicated to the role of microfinance capital for small and medium-sized enterprises in emerging markets. It considers two aspects: firstly, the impact of microfinance services on the growth of micro and small enterprises (MSEs), and secondly, the role of social and psychological capital in enhancing the productivity of microfinance services for MSEs. In many countries, microfinance is essential for MSE survival, whereas social aspects are also very significant for financing MSEs. The research presents the case of Pakistan and reveals that the microfinance services (such as micro-credit, micro-savings, and micro-insurance) have a significant role in fostering MSE growth. The authors also highlight that social and psychological capital is crucial in mediating the relationship between microfinance services and MSE development. There are many reasons why the paper written by

Jalil, Ali, and Ahmed (2022) is a significant contribution to the research on entrepreneurial finance and financing SMEs. Firstly, it presents a valuable case study of microfinance in Pakistan. The analysis was carried out in 357 enterprises in the Pakistan market, which creates a significant insight into this business category in this country. The calculations made in the empirical part of the paper were made using Confirmatory Factor Analysis (CFA) and two-step structural equation modeling (SEM). The computational domain is the crucial axis of the theoretical analysis. Secondly, it highlights the role of social and psychological capital in fostering SME growth. This approach defines the paper's originality because no one has investigated how social and psychological capital connects microfinance services and SME growth. Thirdly, it presents strong arguments that all interested parties, namely, microfinance institutions, practitioners, and policymakers, should enhance their activity to support microfinance services and create suitable conditions for developing these services. The authors argue that the microfinance program and the accompanying facilities will lead to social and psychological capital development. There are expectations that these conditions, in turn, will contribute to the dynamic development of entrepreneurship and, in particular, favor the growth of SMEs.

Regarding the external conditions of SME finance, they embrace funding by crowdfunding. The paper written by Pinkow (2022) is dedicated to reward-based crowdfunding issues. It focuses on analyzing the success factors of crowdfunding projects, especially the cases of overfunded projects. The paper's main aim is to analyze the factors contributing to the success of the financed projects and their overfunding. The research provides a solid contribution to the theory, investigating the project overfunding based on Two-Factor Theory, which helps better understand the motives of crowdfunding founders and distinguishes the factors that contribute to project success from those that contribute to project overfunding. While many of the recent research studies were focused on crowdfunding, the topic of overinvesting as part of the process still requires further research. For this reason, this paper is of great cognitive importance. The presented case study is based on data gathered from the most significant German reward-based crowdfunding platform StartNext. A hierarchical robust logistic regression approach and Blinder-Oaxaca decomposition were chosen to analyze the collected data. This study highlights that the factors that increase the likelihood of success in crowdfunding campaigns do not explain the situation of overinvestment in these campaigns.

The presented research is of great theoretical and empirical importance. It allows a better theoretical understanding of the nature of crowdfunding campaigns. The practical implications are essential for entrepreneurs

considering using reward-based crowdfunding to finance their activity. Nowadays, crowdfunding is becoming a more popular way of financing, and it can also be dedicated to SMEs in developing countries. The inclusion of new financing methods is an opportunity for development, especially for enterprises with limited access to the banking sector and other traditional sources. For these enterprises, the knowledge of the factors increasing the chances of obtaining capital for investments is an essential determinant of effective financial management.

The abovementioned papers present the conditions about funding SMEs, which has been in force in recent years. However, the economy's current situation and the changes triggered by international processes also play a significant role and substantially impact the enterprises' performance. Sometimes these processes start imperative changes in these entities. An example of such influence is the economic situation caused by COVID-19. The pandemic has had a significant impact on the conditions for business activity, among others, on SMEs. The purpose of the paper written by Kryeziu et al. (2022) is to examine the impact of COVID-19 on firms in Kosovo and to analyze their reaction to the challenges created by the pandemic and the implemented strategies aimed to mitigate the risks. The presented quantitative research is based on firm survey data collected by the Institute for Entrepreneurship and Small Businesses in Kosovo in the first half of 2021. It has proved that there has been a substantial negative financial impact on businesses, irrespective of their size, ownership, and industry characteristics. The study also reveals the firms' reaction to the pandemic. As pointed out, they often employ digital technology to a greater extent than before, change management practices, focus on improving organizational efficiency, and implement changes in investment strategies. The authors point out that creating more robust social networks also gained more importance.

A significant contribution from this study comes from the fact that it is dedicated to the situation of SMEs. In contrast, former studies had a broader scope and were related to bigger businesses. Currently, many studies are devoted to assessing business conditions as a consequence of the COVID-19 pandemic. Still, a few of them are related to the situation of SMEs with detailed characteristics of their activity. Another significant contribution of the paper is examining the firms' reaction to the pandemic. This study presents detailed results of SME activity during the pandemic, depending on ownership form, management practices, and the change of behavior of these entities. The authors of this research confirm that the first reaction was changing technological preferences and accelerating the use of digital technologies. It is argued that such an approach enabled the improvement of the efficiency of SME activity. The research also confirms the significant

role of e-commerce during the pandemic. Moreover, the authors provide some suggestions related to the policy applied to these enterprises. They indicate a necessity to design policies that focus on these enterprises liquidity problems and provide tax delays, incentives, and other financial support for them. It is also highlighted that such enterprises' needs should be monitored, enabling them to adjust the government policy to their current expectations and needs. All of these aspects give an in-depth picture of the situation of SMEs during the pandemic. They indicate the need for activities to support the development of these enterprises in the post-pandemic period.

FUTURE RESEARCH

The issues related to the use of financial technologies in the activity and processes of SME development have a huge potential for further research. This is especially the consequence of two reasons. Firstly, these issues are part of a broader research area related to the transformation of economies under the influence of digital technologies. Secondly, despite many former studies, the issues related to SMEs have not been treated as a priority and, relatively, this topic is still poorly described. Therefore, many research gaps can be indicated in this area. The processes occurring within the SME group (transformation under the influence of financial technologies) and the geographical differentiation of the functions taking place require in-depth examination. Undoubtedly, a comparative analysis of the considered processes from the perspective of developed and developing countries may also be the subject of further research.

Further research areas are also indicated in the following papers related to entrepreneurial finance. The paper written by Do et al. (2022) provides a significant contribution related to the impact of an e-tax system on SMEs in developing countries. Still, the research was conducted on the single market in Vietnam. It is expected that further research on this subject will be carried out in other developing countries. At the end of this paper, the authors formulate policy implications for improving tax compliance. The paper shows that compliance is a natural consequence of adopting an e-tax system. Adopting an e-tax system requires the adoption and enhancement of financial technology necessary for the proper functioning of the whole system. It should be noted that this paper presents rather general premises. In the future, it is worth conducting in-depth research on the impact of an e-tax system on SMEs in developing countries.

The paper by Tuan and Rajagopal (2022) focuses only on the manufacturing sector related to the selected city in Vietnam. Similarly,

like the former paper, it creates an opportunity to extend the geographical dimension of such research in the future. It is also significant to develop the study and to confirm these results in other sectors of the economy. The research identified additional factors impacting SME performance in Vietnam (strategy implementation, organizational commitment, and managerial control). These factors can also be included in future research.

The analysis of the mediating perspective of the social and psychological capital, presented in the paper by Jalil, Ali, and Ahmed (2022), is a new research area related to the quite commonly researched topic of microfinance services. This area deserves further in-depth research. Firstly, the authors indicated the social and psychological components that impact on the support of microfinance services for MSE growth processes. They can be used in further research. Secondly, the authors highlight that their paper has several limitations that give plenty of room for future research. Here should be included the sample size, the focus of the research being solely on the manufacturing sector, and the restriction of the research to Pakistan. Therefore, there is a need to verify the presented research in other research groups and on other markets.

The results presented in the paper written by Pinkow (2022) are also essential for further research on the nature of crowdfunding. He showed that understanding the reasons for overfunding crowdfunding campaigns will require broadening the future research scope. The author highlights that the differentiation of motivating factors for overfunding in reward-based crowdfunding offers immense research opportunities. The author also points out that overinvestment may result from subjective factors, which indicates the need to include other countries and communities in further research.

The research related to SMEs during the pandemic, presented in the paper written by Kryeziu et al. (2022) is related to SMEs in Kosovo. The focus on such a small area is an essential weakness of this study, and there is a need for further studies related to the situation in other countries. Moreover, the pandemic significantly influenced SMEs, and further research is necessary for the field associated with the impact of the pandemic on SMEs and the processes of these enterprises' adaptation to the new post-pandemic circumstances. Also, the methods of SME digitalization require further in-depth research. A question can be raised as to whether the digitalization of SMEs is a short-term response to the pandemic or whether they have initiated a long-term process of far-reaching digitalization in the SME area.

CONCLUSION

This paper presents two research areas. The first one covers the impact of financial technologies and the fintech-based entities on SME activity in developing countries. It is a field that is still poorly researched. The second research area embraces selected aspects of SME finance, which are discussed in more detail in this Issue's subsequent papers. As described, due to the consequence of the financing gap for SMEs within the traditional financial system, these entities use technological opportunities that provide non-bank financing, namely the possibilities created by financial technology. Financial technology plays a crucial role in fostering the financial situation of SMEs and provides greater financial inclusion for these entities. This situation regards especially SMEs from developing countries, where limited access to traditional financing is a big obstacle for the growth of SMEs. Firstly, financial technology facilitates and improves the current practices of financing SMEs in emerging markets and, secondly, they create new possibilities of financing (platformization, greater access to data). Fintech entities are also very important in the case of developing countries. The presented examples show that the scale of financial exclusion in developing countries is very large. Fintech entities are able to provide financing to all those entrepreneurs that cannot receive financing from traditional banks. The outbreak of the COVID-19 pandemic has further restricted entrepreneurs' access to conventional sources of finance. At the same time, the use of financial technologies has been deepened, which creates new opportunities for them. Apart from providing access to financing sources and offering payment services, they also strengthen relationships between enterprises and customers and develop new relationships. In addition, they enable SMEs to undertake many other activities to support their growth.

The research presented in the following papers relates to many essential aspects of entrepreneurial finance. They discuss the essential elements that combine SME financing processes with new financial technologies. Much importance has also been placed on the social dimension and psychological factors (e.g., mediating effect of the budget process, social and psychological capital in microfinance, etc.).

The premises from the paper written by Kryeziu et al. (2022) can significantly shape policy after the pandemic. Communication between the policymakers and the private sector is crucial. Therefore, this research can contribute to a better understanding of the needs defined by shaping the post-pandemic world. It is an important step for preparing proper policy supporting the further development of SMEs in developing countries.

These unique studies presented in this Issue enrich our knowledge in SME financing. The papers contribute to understanding the nature of business performance and link corporate finance issues with other, mainly social problems. We want to express the hope that the papers presented here will be of interest to readers, scholars, and researchers worldwide. They provide theoretical concepts, present exciting case studies from developing countries, and indicate pathways for further research. Many of the marked areas require further, in-depth analysis.

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Abstrakt

CEL: *Tradycyjne źródła finansowania (kredyty bankowe) nie mogą być traktowane jako podstawowe źródło finansowania MŚP w krajach rozwijających się. Z tego powodu wskazana grupa podmiotów korzysta z wielu alternatywnych źródeł, od bootstrappingu, po mikrofinansowanie i crowdfunding. W ciągu ostatniej dekady znaczący wkład w tym obszarze ma technologia finansowa. Cel artykułu można sprowadzić do trzech aspektów: 1) przedstawienia roli technologii finansowych w finansowaniu MŚP, 2) zbadania roli podmiotów opartych na technologii finansowej w finansowaniu MŚP w krajach rozwijających się 3) analizy innych pozabankowych aspektów finansowania MŚP, prowadzących do poprawy sytuacji finansowej tych podmiotów. Dogłębna analiza praktyk stosowanych w ramach finansów przedsiębiorczych zostanie rozwinięta w kolejnych artykułach prezentowanych w tym numerze.* ***METODYKA:*** *Niniejsze badanie wykorzystuje podejście teoretyczne oparte na narracyjnym przeglądzie literatury. Główna uwaga skupia się na zastosowaniu technologii finansowej jako stymulatora finansowania MŚP w krajach rozwijających się.* ***WYNIKI:*** *W konsekwencji występowania luki w finansowaniu MŚP w ramach tradycyjnego systemu finansowego, podmioty te korzystają z finansowania pozabankowego, opartego na technologii finansowej. Badania potwierdzają, że technologia finansowa odgrywa kluczową rolę w poprawie sytuacji finansowej MŚP w krajach rozwijających się i zapewnia inkluzję finansową tych podmiotów. Zarówno technologia finansowa, jak i przedsiębiorstwa oparte na tej technologii w znaczący sposób przyczyniają się do poprawy efektywności finansowania MŚP w badanej grupie krajów. Umożliwiają one również świadczenie szerszego zakresu usług, niż oferował tradycyjny sektor finansowy. W odniesieniu do innych aspektów finansowania MŚP, konieczne jest wdrożenie w jak najszerszym zakresie mikrofinansowania i finansowania społecznościowego. Mechanizmy te, wraz z procesem budżetowym oraz dostosowaniem do elektronicznego systemu podatkowego są ważnymi determinantami współczesnego finansowania MŚP.* ***IMPLIKACJE:*** *Artykuł*

opisuje finansowanie MŚP w krajach rozwijających się. Zapewnia wgląd w obecną sytuację finansową MŚP w tych krajach oraz podkreśla istotne znaczenie rozwoju technologicznego, zapewniającego wsparcie finansowania. Artykuł wskazuje również na przesłanki do kształtowania post-pandemicznej polityki w zakresie finansowania MŚP.
ORYGINALNOŚĆ/ WARTOŚĆ: *Mimo dużego wzrostu teoretycznej i empirycznej literatury dotyczącej przedsiębiorczości finansowej (entrepreneurial finance), niniejsze badanie również ma na celu wniesienie wkładu w ten obszar badawczy. Wpływ technologii finansowych na MŚP w krajach rozwijających się i oddziaływanie podmiotów działających w oparciu o technologie fintech na tę grupę przedsiębiorstw jest nadal słabo zbadany. Ponadto badanie zawiera krótki przegląd innych źródeł finansowania MŚP w krajach rozwijających się oraz ich uwarunkowań.*
Słowa kluczowe*: technologia finansowa, fintech, małe i średnie przedsiębiorstwa, MŚP, kraje rozwijające się*

Biographical note

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Conflicts of interest

The author declares no conflict of interest.

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The impact of attitude towards an e-tax system on tax compliance of Vietnamese enterprises: Adoption of an e-tax system as a mediator

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Abstract

PURPOSE*: Tax compliance is a topic of concern for many scholars all over the world. Most of them point out factors affecting tax compliance, and one significant factor is the adoption of tax compliance. However, there have not been many studies analyzing the relationship between attitude towards an e-tax system, adoption of an e-tax system, and tax compliance. This paper aims to investigate the mediating impact of adoption of an e-tax system in the association between attitude towards an e-tax system and tax compliance based on empirical evidence from Vietnamese enterprises.* ***METHODOLOGY****: On the basis of the Theory of Reasoned Action (TRA), the research model is proposed. Accordingly, hypotheses are developed and this study applies a quantitative analysis with a research sample of 435 Vietnamese enterprises. The questionnaire includes close-ended questions sent to managers or tax accounting officers at enterprises by three methods: directly interviewing, via e-mail, and via the General Department of Taxation. The collected data are then processed and analyzed by SPSS v.22 and AMOS. The study applies Cronbach's Alpha as a tool for assessing the reliability or internal consistency of scales. Following is the exploratory factor analysis (EFA). Finally, regression analysis is used to evaluate the impact of the independent variables on the dependent variable and to estimate the research model.* ***FINDINGS****: There are significant direct effects of the two independent variables, attitude towards an e-tax system and adoption of an e-tax*

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system, with the dependent variable tax compliance. Furthermore, the adoption of an e-tax system partially mediates the association between attitude towards an e-tax system and tax compliance. This mediating effect positively consolidates the impact of attitude towards an e-tax system and tax compliance. ***IMPLICATIONS****: This paper mainly focuses on the tax compliance of Vietnamese enterprises that could be further studied with foreign enterprises that have been operating in Vietnam. Besides, the research is conducted in the context of Vietnam, thus, it is a reference for studies in other developing countries having a similar economy or tax administration.* ***ORIGINALITY/VALUE****: This study contributes to enhancing research associated with tax compliance, especially investigating the mediating impact of adoption of an e-tax system in the association between attitude towards an e-tax system and tax compliance of enterprises in the context of Vietnam. The findings of the study suggest some policy implications for improving tax compliance in Vietnam including (1) continuously improving the information technology infrastructure for both tax authorities and enterprises; (2) widely disseminating tax law and providing support services to enterprises; (3) upgrading the e-tax system to ensure the effective coordination between tax authorities, tax officials, enterprises, and other authorities in applying e-tax; (4) consolidating the supervision and assessment of the adoption of e-tax; (5) promoting information and education on the perception of complying with the tax law for taxpayers in particular and the entire population in general; (6) developing a tax administration strategy based on tax compliance.*

Keywords: *e-tax system adoption, attitude towards an e-tax system, e-tax, enterprises, tax compliance, Theory of Reasoned Action, TRA.*

INTRODUCTION

Tax is one of the main sources of the state budget revenue and is also an important tool for the government to regulate the macro economy, promote investment, curb inflation, protect domestic production, and redistribute wealth and income in the society. According to the state regulations, tax is a payment that is a compulsory obligation for subjects including organizations, households, business households, and individuals in order to ensure the state budget revenue.

The tax system in Vietnam, as well as in other countries in the world, is considered an important element in the governance of the economic and financial legal system. In the process of renovating and building a socialist-oriented market economy, the role of the tax legal system has become more and more clear, having crucial impacts on the process of economic restructuring, improving the business environment, improving national competitiveness, supporting business development, and ensuring financial resources for the effective operation of the state and society.

In regard to taxation, most countries all over the world have followed the trend of improving the two-way relationship between tax authorities and taxpayers from a "head-to-head" relationship to a "companion" relationship. To specify, the traditional tax collection mechanism that was implemented by the tax authorities to calculate and notify the taxpayers to pay their taxes has been replaced by a self-calculation, self-filing, and self-paying tax collection mechanism, in which taxpayers are responsible for their tax declaration and payment. By integrating with that trend, the tax administration in Vietnam has implemented a bunch of measures to promote administrative procedure reform with a taxpayer-centered orientation. In recent years, the General Department of Taxation has increasingly applied information technology in tax administration reform through implementing electronic filing, electronic invoicing, and electronic refunding. Up to now, the electronic tax system has been adopted in 63/63 provinces and cities and 100% of tax departments. The number of enterprises using the electronic tax system has reached 99.93%. Moreover, all the tax departments have implemented electronic tax payment services by associating with more than 50 commercial banks (VCCI, 2019). By the end of 2018, there were 685,578 enterprises registered to use the electronic tax payment service, which reached a rate of more than 98%. The number of enterprises completing service registration with a bank is 672,609, accounting for more than 96% of the total number of operating businesses. The amount paid to the state budget reached over 557.697 billion dongs, equivalently 2,940,678 transactions of electronic tax payment (VCCI, 2019). In parallel, the General Department of Taxation has also implemented electronic tax refund applications in 63 provinces and cities; constructed and implemented a pilot electronic invoice system, and provided online public services. In 2019, the General Department of Taxation continued to review and amend supplement institutions and policies to simplify administrative procedures (VCCI, 2019).

The electronic tax services have brought significant benefits to enterprises and are a modern administrative tool for tax authorities. According to the report "Assessment of tax administrative procedure reform – the level of enterprises' satisfaction in 2019" (VCCI, 2019) on electronic tax services, 97% of enterprises indicate that the level of implementation of electronic tax procedure, electronic tax registration and electronic tax payment are "easy" and "relatively easy." Most taxpayers agree that electronic tax payment saves their time and tax payment procedures are easy to follow. In addition, there are still some difficulties related to the adoption of e-tax including data transmission congestion at the reporting period (47%), the cost of using digital signatures (15%), and regulations from commercial banks (7%) (VCCI, 2019).

However, the problem is whether the tax system, based on the application of technology, is as effective as expected or is creating loopholes for tax avoidances, tax evasion, and tax non-compliance, resulting in the loss of state budget revenue. The period 2016-2019 witnessed a significant increase in newly established enterprises, specifically, there were 110,100 new enterprises in 2016, 126,859 new enterprises in 2017, 131,275 new enterprises in 2018, and 138,139 new enterprises in 2019 (General Statistics Office, 2020). Whilst this is a positive signal for the economy, it is also a challenge for tax authorities to effectively manage tax collection with not only enterprises in particular but also taxpayers in general, in which taxpayers' compliance is always considered the most important factor for tax authorities.

According to VCCI (2019), the rate of enterprises sanctioned for administrative violations after-tax inspection and examination across the country is 70%. This proves that the level of enterprises' compliance is not really high, and it is necessary to overcome this situation. Meanwhile, reports of the General Department of Tax in the period 2016-2020 have shown that, in terms of attitude towards an e-tax system, a number of taxpayers have not complied with tax law and tax regulation, even trying to evade and avoid tax. This consequence is that the tax debt was still at a high level in comparison to the total state budget and the majority belongs to irrecoverable tax debts and fines. In terms of adoption of an e-tax system, it has been reported that the coordination, connection, and exchange of information among ministries, especially tax authorities among different regions in Vietnam was limited due to the unsynchronized infrastructure (General Department of Tax, 2016-2020). This practical evidence implies that the attitude towards an e-tax system of taxpayers and the adoption of an e-tax system might influence taxpayers' level of compliance. From the theoretical perspective, Night and Bananuka (2018) conducted research to examine the mediating effect of adoption of electronic tax system in the relationship between attitude towards electronic tax system and tax compliance using evidence from small business enterprises (SBEs) in Uganda – a developing African economy. The above-mentioned reasons inspired the authors to investigate the topic related to the relationship among attitude towards an e-tax system, adoption of an e-tax system, and tax compliance in the context of Vietnam based on empirical evidence from Vietnamese enterprises. This paper raises three research questions (RQ):

RQ1) How does attitude towards an e-tax system impact tax compliance of Vietnamese enterprises?

RQ2) How does adoption of an e-tax system impact tax compliance of Vietnamese enterprises?

RQ3) Does adoption of an e-tax system mediate the relationship between attitude towards an e-tax system and tax compliance of Vietnamese enterprises?

To answer these questions, this research adopts the Theory of Reasoned Action (TRA) as the basis to develop the conceptual framework and hypotheses. It is followed by a quantitative analysis with a research sample of 435 Vietnamese enterprises. The collected data are then processed and analyzed by SPSS v.22 and AMOS. The study applies Cronbach's Alpha as a tool for evaluating the reliability or internal consistency of scales. Following is the exploratory factor analysis (EFA) to explore the underlying structure of a set of observed variables and consider convergence and differentiation of group variables, thereby, removing meaningless observation variables to improve research results. Finally, regression analysis is used to evaluate the impact of the independent variables on the dependent variable and to estimate the research model. On the basis of research results, the study proposes recommendations on the adoption of electronic tax to improve tax compliance of enterprises.

The rest of the paper is organized as follows. The next section is a literature review where previous studies are summarized and discussed to arrive at the hypotheses. The following section is a methodology where the research design is clarified in detail and the results are shown. After the discussion of the results are the conclusion and implications.

LITERATURE REVIEW

Tax compliance

Tax compliance is defined as "the willingness of the taxpayers to act in accordance with both the 'spirit' and the 'letter' of the tax law and administration without the application of enforcement activity" (James & Alley, 2002). According to Marti (2010), tax compliance is fulfilling all the tax obligations as stated by the law willingly and fully. Singh (2003) also defines tax compliance as an act of lodging the income tax return form, stating all the taxable income truthfully, and paying all the tax obligations. There are a lot of international and national scholars who have conducted research about tax compliance. One of the pioneers in studying tax evasion and tax compliance are Allingham and Sandmo (1972), and Srinivasan (1973). The theory of tax evasion, applied and developed by these scholars, is seen as the very first study about tax evasion using the quantitative method. Allingham

and Sandmo (1972) argue that taxpayers are always trying to find a way to maximize the benefit of their taxable income and this is influenced by the cost of compliance and benefit of tax evasion. According to the Allingham and Sandmo's (1972) theory, the compliance decision depends on four main factors: the taxpayer's real income, tax rate, audit probability, and punishment. A series of empirical studies have followed the theory, these studies all support and reinforce the conclusion that the punishment and the possibility of being audited will result in reducing tax non-compliance (Pate & Hamilton, 1992; Jackson & Jaouen, 1989; Dubin, 2007; Alm et al., 1992b; Baldry, 1986; Webley, 1991).

Tax compliance has been classified by many scholars with different approaches. According to Brown and Mazur (2003), tax compliance is divided into declaration compliance (proportion of taxpayers filing tax returns), payment compliance (paying taxes on time as prescribed), and reporting compliance (reporting honestly about income, expenses, or tax liability/ responsibility). According to the OECD, there are two types of tax compliance: administrative compliance (compliance with the provisions of tax laws) and technical compliance (correct and sufficient tax declaration and payment in accordance with regulations), while Kirchler et al. (2008) indicate that tax compliance includes voluntary compliance and mandatory compliance.

Tax compliance has been approached from different perspectives. The main concern of most governments is that individuals and organizations fulfill tax obligations as well as execute tax regulations regardless of tax incentives. Even so, tax compliance could be the result of different motivations. It is possible to divide the factors affecting tax compliance into two groups: a group of *economic factors* and a group of *social factors*. From an economic point of view, theories consider taxpayers as rational people who have concerns about the costs and benefits of tax compliance as well as possible outcomes (Hasseldine, 1993).

Economic factors include tax rates, the possibility of a tax examination, penalties, and tax compliance costs. Tax rates are one of the most important bases, or the "soul" of a tax, as they directly determine the amount of tax payment. According to Schneider and Klinglmair (2004), Jackson et al. (1988), Mason and Calvin (1984), there is a relationship between tax evasion and marginal tax rates, in particular, tax rates have a positive effect on money holdings and tax evasion increases with the tax rate. In other words, the higher the tax rate, the more likely a taxpayer is to evade taxes (Schneider & Klinglmair, 2004; Jackson et al., 1988 Mason & Calvin, 1984). Similarly, the possibility of tax examination as a factor that strongly impacts taxpayers' tax compliance has been demonstrated in many studies such as Alm et al. (1992b), Andreoni et al. (1998), Dubin et al. (1990), Jackson and Milliron

(1986a). Some other studies also reinforce that audits have a positive effect on reducing tax fraud (Jackson & Jaouen, 1989). In terms of penalties, Swistak (2016), Grasmick and Scott (1982), Friedland (1982) prove that tax penalties are one of the tools that can be used to effectively prevent tax evasion. According to Swistak (2016), the higher the fine level, the more it contributes to limiting tax evasion as taxpayers tend to balance the benefits of tax evasion and the corresponding penalty for that act. Both high and low penalties have a corresponding effect on the level of tax compliance. The last economic factor is compliance costs which directly impact taxpayers' compliance.

In contrast, *the social factors* include ethical standards, tax ethics, reputation and perceived fairness. Research by Torgler (2003a); Torgler and Murphy (2004), Torgler and Schneider (2009); Torgler (2005b) prove that tax ethics is "the existence of an intrinsic motivation to pay taxes" or considered as "a normative behavior guiding taxpayers in fulfilling their tax obligations." In other words, tax ethics influence ethical principles or individual values for the payment of taxes (Torgler & Murphy, 2004). Besides, Andreoni et al. (1998) and Kim (2003) found that the reputation of enterprises in particular, and taxpayers in general, is achieved and enhanced through implementing corporate social responsibility, complying with the law, and paying taxes based on regulations. Therefore, taxpayers have fears of social stigma or damaged reputations if they were reported as tax fraudsters. This could result in a higher level of taxpayers' compliance (Kim, 2003). According to Jackson and Milliron (1988), perceived fairness significantly influences tax compliance (but the impact dimension is still controversial and has not come to a consistent result among different studies).

In terms of *psychology and behavior approach*, a number of scholars (Elffers et al., 1987; Murphy, 2004; Tan, 1998; Torgler & Murphy, 2004) argue that the human factor is the decisive factor impacting the decision of tax compliance. Torgler is one of the remarkable authors studying tax compliance factors from the perspective of psychological and behavioral theory (Torgler, 2002; Cummings et al., 2009; Torgler, 2003a; Alm & Torgler, 2011; Torgler, 2005b; Torgler et al., 2008; Alm & Torgler, 2006; Frey & Torgler, 2007; Torgler, 2005a). These studies indicate that ethical standards have a positive effect on tax compliance behavior and tax compliance behavior of different cultures is not similar.

Electronic tax system in relation to attitude towards electronic tax system and adoption of electronic tax system

According to Che-Azmi and Kamarulzaman (2014), the e-tax system is based on the application of information and communication technology that most

governments all over the world have been using to improve the provision of public services and public administrative procedures. The e-tax system is considered as the process of assessing, collecting, and managing the taxation process through an electronic system (Oloaye & Atilola, 2018). In similarity, Wasao (2014) defines the e-tax system as an online platform that allows taxpayers to access tax services and fulfill their tax obligations through the internet. Lee (2016) also indicates that the e-tax system contains powerful tools, which not only enable the integration of tax information provided by taxpayers, but also reduce tax compliance costs with efficient, transparent, and trustworthy services that ultimately enhance tax ethics and trust in tax administration. Nasir (2015) argues that the e-tax system, in particular for tax filing and paying, would benefit both taxpayers and tax authorities if it was well implemented and used by most taxpayers. Besides, other authors admit the positive impact of the e-tax system on tax compliance (Allahverdi et al., 2017; Barati & Bakhshayesh, 2015). Maisiba and Atambo (2016) also support the conclusion that the e-tax system improves tax compliance by facilitating faster access to tax services without the need for tax authorities. These authors focus on the e-tax system which was established by Kenya Revenue Authority to increase financial collection, administration, avail services to the taxpayers all the time from anywhere, reduce costs of compliance and improve tax compliance. The e-tax system enables for taxpayers an internet-based PIN registration, returns filing, and payment registration to allow for tax payments and status inquiries with real-time monitoring of accounts. Thus, in comparison to the old manual system, the electronic system is good and convenient by far. It reduces queues, workload, physical filing of large files, and cumbersome registration processes by both Kenya Revenue Authority officials and the government (Maisiba & Atambo, 2016).

There is a relationship existing between attitude towards an e-tax system and tax compliance that is proved by a number of researchers such as Simuyu and Jagongo (2019); Ondara et al. (2016); Maisiba and Atambo (2016); Al-Debei et al. (2015). Chan et al. (2000) find that the lower the level of taxpayers' attitude towards an e-tax system, the lower the level they comply with tax laws. In confirmation, Al-Debei et al. (2015) also propose that taxpayers are willing to trust and adopt the e-tax system when they perceive or evaluate it to be secure. In contrast, taxpayers who evaluate the e-tax system as not easy to use do not adopt it, which affects tax compliance (Maisiba & Atambo, 2016). In addition, Ondara et al. (2016) emphasize a strong relationship between attitude towards an e-tax system and tax compliance. This is later proved by Simuyu and Jagongo (2019) study that when e-tax filing is easy, simple, and secure to file, it could improve taxpayers' compliance.

Furthermore, the attitude towards an e-tax system also significantly influences the adoption of an e-tax system based on three aspects: perceived ease of use, the intensity of behavior, and the users' satisfaction (Khaddafi et al., 2018). In other words, the easier the e-tax system is to use, the more motivated and more willing taxpayers are to apply it. This also partly results in the effective interactions between the e-tax system and taxpayers. It is remarkable that taxpayers with computer skills will find an e-tax system easier to adopt than those without (Zaidi et al., 2017). Indeed, these skills are found to influence the individual's perception that a system is easy to use. The higher the computer skills an individual possesses, the more the individual will perceive that the technology is easy to use (Igbaria & Livari, 1995; Venkatesh & Davis, 2000; Wang et al, 2003). The study by Wang et al. (2003) also proves that computer self-efficacy affects the intention to adopt an electronic tax filing system by positively affecting perceived ease of use and perceived usefulness. The research by Zaidi et al. (2017) confirms a positive and significant relationship between computer skills and the perceived ease of use of an e-tax system. That is, individuals with higher computer skills will perceive that using an e-tax system is easy.

The attitude towards the electronic tax system impacts the tax compliance behavior of the taxpayers. Thus, this study examines this relationship in the context of Vietnam to confirm whether there are any differences. Thereby, the first hypothesis is as follows:

H1: There is a positive relationship between attitude towards an e-tax system and tax compliance.

The adoption of e-tax has become essential in developed countries and developing countries towards the trend of reforming tax administration through using information systems (Ondara et al., 2016). According to Lee (2016), the adoption of e-tax significantly contributes to both tax compliance and the transparency of business transactions and tax services. From the policy perspective, if the e-tax system is well-planned and well-executed, it could lead to a higher level of tax compliance. From the tax compliance process approach, Becker and Lacktorin-revier (2008) and Muturi and Kiarie (2015) argue that the implementation of e-filing and e-billing has significantly positive effects on the compliance of individual taxpayers. Similarly, Muturi & Kiarie (2015) emphasize that there is a positive relationship between e-registration and tax compliance of VAT. Besides, a study of the e-tax system in India by Motwani et al. (2015) indicates that although the adoption of e-tax in this country is not compulsory, e-filing of tax returns and e-payment

still increases tax compliance of taxpayers. Findings by Muturi and Kiarie (2015) from Kenya also support the previous ones that there is a strong positive correlation between the adoption of the e-tax system through online tax registration and online tax return filing. In summary, the adoption of electronic tax system influence taxpayers' compliance. Therefore, this paper proposed the second hypothesis to investigate how the adoption of an e-tax system impacts tax compliance of Vietnamese enterprises as follows:

H2: There is a positive relationship between adoption of an e-tax system and tax compliance.

The relationship between attitude towards an e-tax system and adoption of the e-tax has also been proved by a number of studies including Barati et al. (2014); Asianzu and Maiga (2012); Ramlah (2010); Jahangir and Begum (2008). Findings by Barati et al. (2014) show that the level of adapting to the e-tax system depends on the attitudes of the taxpayer. These attitudes are demonstrated by perceived risk in relation to breaking privacy and disclosure of information. Similarly, Asianzu and Maiga (2012) argue that taxpayers in Uganda are not ready to use the e-tax system if they have negative attitudes towards it. In another study, the perception towards online tax filing in terms of ease and simplicity to file has a very close relationship with tax compliance (Kiring et al., 2017). With the same opinion, Ramlah (2010) discovered that the more the taxpayers believe in the e-tax system, the more committed they will become towards using the system. Jahangir and Begum (2008) also suggest that the belief in the usefulness of the e-tax system will attract more users towards the e-tax. Interestingly, Night and Bananuka (2018), in their research about the tax compliance of small business enterprises (SBEs) of an African developing economy, not only prove the relationship between attitude towards an e-tax system and adoption of the e-tax but also reveal that adoption of the e-tax is a partial mediator in the association between attitude towards the e-tax system and tax compliance. Based on the description above, the following hypothesis is summarized as follows:

H3: Adoption of an e-tax system mediates the relationship between attitude towards an e-tax system and tax compliance.

This study utilizes the Theory of Reasoned Action (TRA) (Fishbein & Ajzen, 1975; Ajzen & Fishbein, 1980) as the theoretical basis to propose a conceptual framework to investigate the relationship between attitude towards an e-tax system, adoption of an e-tax system, and tax compliance,

since the TRA aims to predict and understand the causes of behavior (Ajzen & Fishbein, 1980). In TRA, behavioral intention is determined by attitudes and subjective norms (Fishbein & Ajzen, 1975; Ajzen & Fishbein, 1980). Attitudes are sets of beliefs about a certain object or an act that may translate into the intention to carry out the act (Schwartz, 1992). Subjective norms are related to the normative belief that a person complies with the expectations of other people. Intention in an attitude-behavior relationship is influenced by the level of effort required to exercise the behavior (Bagozzi et al., 1990). In the light of the foregoing review of the literature integrating with the insights of TRA, the research model is designed including attitude towards an e-tax system, adoption of an e-tax system, and tax compliance (Figure 1).

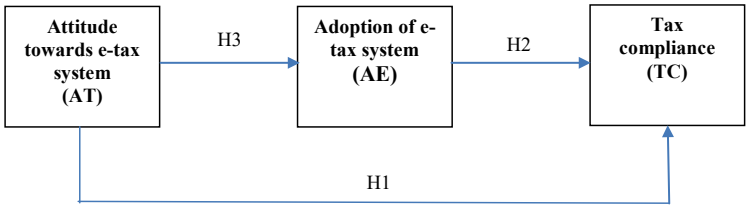

Figure 1. Research model

METHODOLOGY

Sample and data collection

The research applies the convenient sampling method. The questionnaires are designed to gain information of Vietnamese enterprises about the attitude to an e-tax system, adoption of an e-tax system, and tax compliance. Besides, the information about enterprises' characteristics such as size, the field of operation, location, etc. are also collected. The questionnaires, then, are mostly sent to managers or accountants of Vietnamese enterprises to collect data via e-mail due to the convenience for both interviewers and interviewees throughout Vietnam, especially with enterprises in the Middle and the South. In parallel, the questionnaires are also sent in person to enterprises with closer distances, most of them in Hanoi. As a result, there are 435 questionnaires completed from both cities and provinces in Vietnam but mostly from the North. The detailed sample is as follows:

Table 1. Field of operation and type of enterprise

Field of operation	Frequency	Percent (%)	Type of enterprise	Frequency	Percent (%)
Construction, transportation, warehouse	142	32.6	Limited Liability Company	176	40.5
Hotel, tourist	43	9.9	Joint stock company	154	35.4
Food production and processing	32	7.4	Private enterprise	47	10.8
Information, communication, telecommunications	21	4.8	State-owned enterprises	38	8.7
Science and technology	16	3.7	Foreign enterprises	2	0.5
Finance, banking, insurance	48	11.0	Joint venture enterprises	1	0.2
Pharmaceutical, medical, chemical cosmetics	23	5.3	Cooperatives, cooperative groups	5	1.1
Textiles, leather, and shoes	28	6.4	Others	12	2.8
Production and processing of agricultural, forestry, and aquatic products	20	4.6			
Mining, processing and manufacturing industries	17	3.9			
Educations	21	4.8			
Real estate	23	5.3			
Others	1	0.2			

In terms of field of operation, the results indicate that enterprises belonging to the group of construction, transportation, warehouse fields are the majority with 32.6%, followed by enterprises in the group of finance, banking, insurance fields with 11%, and enterprises in the group of hotel, tourist fields with 9.9%. The minority is enterprises in some fields such as science and technology and the group of mining, processing, and manufacturing industries. Regarding the type of enterprise, most enterprises are Limited Liability Company and Joint-stock company, which account for approximately 75.9% while Joint venture enterprises only occupy 0.2%.

In terms of data collection, questionnaires for enterprises are sent to managers or tax accounting officers at enterprises by three methods: (1) directly investigating and interviewing with enterprises in Hanoi; (2) sending questionnaires via e-mail, letter to enterprises; (3) directly sending to the General Department of Taxation and tax departments to collect the feedback from enterprises outside Hanoi.

Scale and questionnaire development

The subject of the study is Vietnamese enterprises. The questionnaire includes the following four parts: (1) introduction of the research topic and purpose; (2) questions about industries, types, and sizes of enterprises, tax administrative procedures that have been/are applying electronic tax; (3) Questions about the impact of electronic tax on tax compliance of enterprises. The questionnaire is designed based on five rating levels created by Likert and referenced by many later researchers. Specifically, the five ratings include "strongly agree", "agree", "normal", "disagree", and "strongly disagree". These rating levels are used for respondents to conveniently give feedback. The study uses Adoption of e-tax system scales by Night and Bananuka (2018). Adoption of an e-tax system is measured by eight observed variables on a scale of 1 to 5points ranging from strongly disagree to strongly agree. The research uses Night and Bananuka's (2018) eight indicators to measure Attitude towards an e-tax system on a scale of 1 to 5 points ranging from strongly disagree to strongly agree. The research uses Tax compliance scales by Marti (2010). Tax compliance is measured by eleven observed variables on a scale of 1 to 5 points ranging from strongly disagree to strongly agree.

To collect data for research, questionnaires are developed on the basis of indicators measuring concepts in the research model. Before designing the pilot questionnaire with a small sample, the study interviewed experts to test the concepts of variables and the connotation of indicators. Indicators are translated into Vietnamese through forward-reverse translation. Then, the questionnaire was tested with a small sample of respondents to ensure there was no misunderstanding about the content of the question and to adjust the final form of the questionnaire. Finally, the indicators used for the formal study are shown in Table 2.

Data analysis

The secondary and primary data, will be checked and cleaned before being processed by SPSS software for research purposes. The study applies Cronbach's Alpha as a tool for assessing the reliability or internal consistency of scales. Following is the exploratory factor analysis (EFA) to explore the underlying structure of a set of observed variables and consider convergence and differentiation of group variables, thereby, removing meaningless observation variables to improve research results. Finally, regression analysis is used to evaluate the impact of the independent variables on the dependent variable and to estimate the research model.

Table 2. Variable and scale

Variable	Scale	Source
	Adoption of an e-tax system (AE)	
AE _1	Our company uses the e-tax to ensure compliance with tax laws	Night and Bananuka (2018)
AE _2	Our company uses the e-tax system to avoid tax penalties	
AE _3	Our company is currently using the e-tax system to fulfill tax obligations	
AE _4	Our company registers for the tax identification number through the e-tax system	
AE _5	Our company uses e-tax systems to file returns	
AE _6	We use e-tax to pay taxes and fees	
AE _7	Our company is equipped with computer skills to solve problems when using e-tax	
AE _8	Our company has a computer system connected to the internet for the purpose of handling tax issues	
	Attitude towards an e-tax system (AT)	
AT _1	The e-tax system helps us to handle tax problems more easily	Night and Bananuka (2018)
AT _2	The e-tax system helps us to improve our services delivery	
AT _3	We find the e-tax system safe, secure and convenient to use	
AT _4	We find that the e-tax system is very convenient and time saving	
AT _5	We find e-tax returns are difficult to file	
AT _6	We have positive feelings for the e-tax system	
AT _7	We find that it better to use the e-tax system than the manual tax system	
AT _8	The e-tax system is extremely essential and it supports the operation of our business	
	Tax compliance (TC)	
TC _1	Our company state all taxes when declaring returns	Marti (2010)
TC _2	Our company declares all income to the tax authorities for tax assessment	
TC _3	Our company pays taxes first before any other fees	
TC _4	Our company always pays taxes on time	
TC _5	We always file returns on time	
TC _6	Upon filing returns, we register payment and proceed to pay	
TC _7	After filing returns, we proceed to pay tax on the due date	
TC _8	Our company always submits returns on the e-tax system and at the same time submit (hard copies) to the tax authorities	
TC _9	Our company pays the taxes assessed by the tax authorities	
TC _10	When our accounts are not audited on the due date of filing returns, we apply for extension of due date. Once the due date is granted, we file within the granted period	
TC _11	Our company has been exempted from paying withholding tax	

RESULTS AND DISCUSSION

Reliability analysis of Cronbach's Alpha

The results of analyzing the reliability of Cronbach's Alpha of the scales for the first time after eliminating the observed variables AT5, TC8 and TC11 the Cronbach's Alpha coefficient of the respective scales will increase. Table 3 is Cronbach's Alpha reliability analysis results of the final scales. The total variable correlation coefficients of the observed variables in the scale are greater than 0.4 , and there is no case of removing any observed variables that can make Cronbach's Alpha of this scale increase.

Table 3. Results of Cronbach's Alpha of the final scales

Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Attitude towards an e-tax system (AT): Cronbach's Alpha = 0.941			
AT1	23.671	20.687	.832	.930
AT2	23.814	20.756	.769	.935
AT3	23.706	20.683	.811	.932
AT4	23.589	20.690	.835	.929
AT6	23.694	21.259	.779	.934
AT7	23.566	20.753	.776	.935
AT8	23.575	20.443	.840	.929
Adoption of an e-tax system (AE): Cronbach's Alpha = 0.950			
AE1	24.193	24.479	.846	.941
AE2	24.133	24.429	.873	.938
AE3	24.179	24.585	.866	.939
AE4	24.326	24.995	.799	.945
AE5	24.391	25.621	.757	.948
AE6	24.237	25.029	.811	.944
AE7	24.182	24.794	.855	.940
Tax compliance (TC): Cronbach's Alpha = 0.934			
TC1	31.239	32.717	.727	.928
TC2	31.234	32.304	.811	.923
TC3	31.269	32.635	.749	.927
TC4	31.191	32.777	.778	.925
TC5	31.163	32.188	.809	.923
TC6	31.285	32.877	.723	.928

Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Tax compliance (TC): Cronbach's Alpha = 0.934			
TC7	31.230	32.270	.805	.923
TC9	31.276	32.196	.726	.928
TC10	31.345	32.623	.667	.932

Exploratory Factor Analysis (EFA)

The initial research model includes three factors and 26 observed variables. After testing the scales with Cronbach's Alpha, the observed variables AT5, TC8 and TC11 were removed and 23 observed variables were included in the exploratory factor analysis (EFA) with oblique rotation using KMO (Kaiser-Meyer-Olkin) and Bartlett test method (Bartlett's Test) to measure sample compatibility (Table 4).

When analyzing the exploratory factor analysis (EFA) for the impact factors group, the results showed that the coefficient of KMO test, Bartlett test, average variance extracted were satisfactory with KMO = 0.964, so factor analysis is completely appropriate; Sig. (Bartlett's Test) = 0.000 <0.05, proving that the observed variables are correlated in the whole.

Table 4. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.964
Bartlett's Test of Sphericity	Approx. Chi-Square	9702.466
	df	300
	Sig.	.000

Table 5 presents the results of the pattern matrix of the factor loadings by applying an extraction method of Principal axis factoring and a rotation method of Promax. The pattern matrix shows that the observed variables converge on three main components (three factors): the first factor, which consists of 11 observed variables (from TC1 to TC11) represents the scale of Tax compliance; The second factor which contains seven observed variables (AT1, AT3 to AT8) represents the scale of Attitudes towards electronic tax; The third factor which includes seven observed variables (from AE1 to AE7) represents the scale of Electronic Tax System. Moreover, the factor loadings of the observed variables are all higher than 0.5 that ensure the actual significance level (Hair et al., 2010). The convergence of observed variables on factors is also consistent with the theory. It implies that the observed variables in conceptual scales are strongly correlated with each other.

Table 5. Pattern matrix[a]

Variables	Factor		
	1	2	3
TC9	.834		
TC7	.790		
TC5	.779		
TC6	.716		
TC10	.696		
TC4	.690		
TC2	.687		
TC8	.647		
TC3	.616		
TC11	.562		
TC1	.545		
AT1		.831	
AT3		.800	
AT4		.781	
AT6		.766	
AT2		.765	
AT8		.763	
AT7		.657	
AE6			.832
AE2			.804
AE7			.774
AE3			.772
AE1			.743
AE4			.733
AE5			.703

Note: Extraction Method: Principal Axis Factoring; Rotation Method: Promax with Kaiser Normalization; a. Rotation converged in 5 iterations.

Confirmatory Factor Analysis (CFA)

To confirm the validity of scales before analyzing the structural model, the research applies the CFA method to evaluate the validity of scales including Convergent Validity, Discriminant Validity, Reliability (Figure 2).

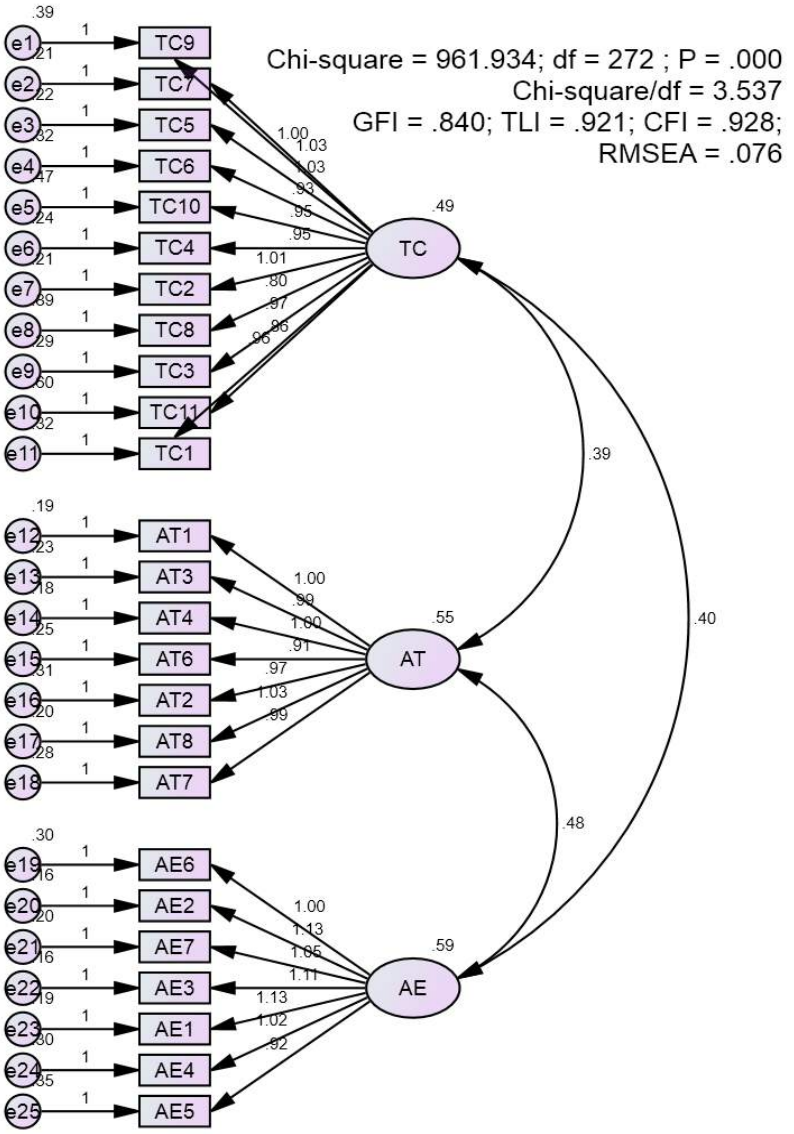

Figure 2. Results of Confirmatory Factor Analysis (CFA)

Table 6 reveals results of the Composite Reliability (CR), Average Variance Extracted (AVE), Maximum Shared Variance (MSV), Average Shared Variance (ASV), and the correlations between observed variables. According to Chin (1998) and Hair et al. (2010), the CR should be higher than 0.6 to ensure the

reliability of scales. The results show that the CR of all scales is higher than 0.7, so it is ideal. Besides, the AVE should be higher than 0.5 and the ASV should be lower than the AVE in order to ensure the convergent and discriminant validity of scales (Hair et al., 2010). Meanwhile, the result of AVE is higher than 0.5, so the convergent validity is good. Also, it is proved that all concepts in the research model are satisfactory in terms of value (unidirectionality, convergent validity, and discriminant validity) and reliability.

Table 6. Results of Composite Reliability (CR) and Average Variance Extracted (AVE)

	CR	AVE	MSV	ASV	AT	AE	TC	ETA
AT	0.942	0.698	0.719	0.629	0.836			
AE	0.943	0.623	0.607	0.542	0.779	0.789		
TC	0.934	0.565	0.564	0.560	0.749	0.744	0.752	
ETA	0.950	0.731	0.719	0.583	0.848	0.683	0.751	0.855

The results of testing the relationships in the research model

The results of Structural Equation Modeling (SEM) indicate that Chi-square = 961.934 (P=0.000); Chi-square/df = 3.537 < 5; RMSEA=0.076 < 0.08; TLI = 0.921 and CFI = 0.928 (both TLI and CFI are higher than 0.9), only GFI = 0.84 < 0.9 but still acceptable. So, the results are consistent with the actual data (Figure 3).

As mentioned above, the Composite Reliability (CR) should be higher than 0.6 to ensure the reliability of scales (Chin, 1998; Hair et al., 2010). The results of Table 7 show that the CR of all scales is higher than 0.7, so it is ideal.

Table 7. Estimated results of research model

			Estimate	S.E.	C.R.	P-value
AE	<---	AT	.874	.049	18.001	***
TC	<---	AT	.373	.070	5.317	***
TC	<---	AE	.378	.068	5.527	***

Note: *** indicates p <0.001; SE: Standard error.

The result of a structural path calculation indicates that the Attitude towards an e-tax system (AT) has a direct and positive relationship to the Adoption of an e-tax system (AE) that can be observed from the Beta value (β = 0.874) with a significant value (P-value <0,001).

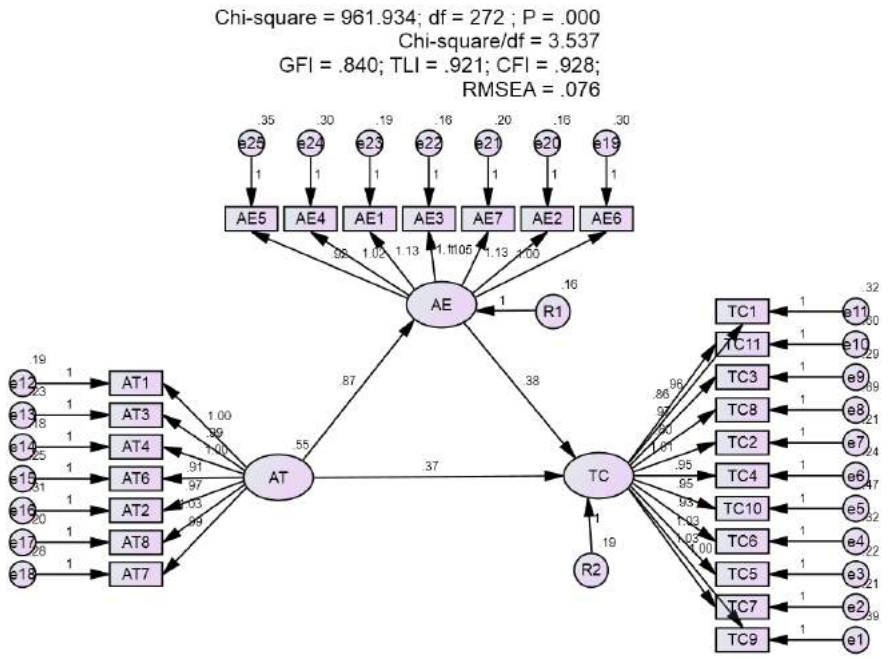

Figure 3. Results of Structural Equation Modeling (SEM)

So, hypothesis H3 is accepted. The result of a structural path calculation indicates that the Attitude towards an e-tax system (AT) has a direct and positive relationship to the Tax compliance (TC) that can be observed from the Beta value (β = 0.373) with a significant value (P-value <0.001). So, hypothesis H1 is accepted. The result of a structural path calculation indicates that the Adoption of an e-tax system (AE) has a direct and positive relationship to the Tax compliance (TC) that can be observed from the Beta value (β = 0.378) with a significant value (P-value <0,001). So, hypothesis H2 is accepted. The results also reveal that the adoption of an e-tax system partially mediates the association between attitude towards an e-tax system and tax compliance.

CONCLUSION AND IMPLICATIONS

The research results indicate that there are significant direct effects of the two independent variables, attitude towards an e-tax system and adoption of an e-tax system, with the dependent variable tax compliance.

In particular, the attitude towards an e-tax system has a direct and positive relationship to tax compliance and contributes to 37.3% to the change of tax

compliance. In other words, 1 unit change in the attitude towards an e-tax system is, on average, a 0.373 unit change in tax compliance. Based on the Theory of Reasoned Action (TRA), an explanation could be that when taxpayers find the e-tax system safe, secure, convenient, and time-saving, they will have positive feelings for the e-tax system. It then leads to the action of using the e-tax system, which results in improvements of tax compliance level. This result is consistent with some other findings such as Ondara et al. (2016) who found that there is a strong relationship between attitude towards electronic tax system and tax compliance; and Kiring et al. (2017) who concluded that there is a strong relationship between the perception towards online tax filing in terms of ease and simplicity to file and tax compliance.

Similarly, the adoption of an e-tax system has a direct and positive relationship to tax compliance and explains 37.8% of the change of tax compliance. Put it another way, 1 unit change in the adoption of an e-tax system is, on average, a 0.378 unit change in tax compliance. From the theoretical perspective, this finding is supported by the theory of the Technology Acceptance Model (TAM), which argues that the perception of using information technology is crucial to the adoption. The adoption of information technology will probably enhance tax compliance. From the empirical perspective, this finding agrees with Muturi and Kiarie (2015) who indicated that there is a strong positive correlation between the adoption of an e-tax system through online tax registration, online tax return filing, online tax remittance, and tax compliance.

Furthermore, the paper also reveals that the adoption of an e-tax system partially mediates the association between attitude towards an e-tax system and tax compliance. This mediating effect positively consolidates the impact of attitude towards an e-tax system and tax compliance, which is also consistent with some other findings such as Motwani et al. (2015), Muturi and Kiarie (2015), and Night and Bananuka (2018). Especially, Night and Bananuka (2018) prove that the relationship between attitude and tax compliance is partially mediated by the adoption of an e-tax system through quantitative results.

The findings of the study suggest some policy implications for improving tax compliance in Vietnam as following:

Firstly, it is important to improve continuously the information technology infrastructure for both tax authorities and enterprises. *For tax authorities*, it is necessary to establish information security and safety systems through (1) building information security management software (with functions of detecting information leaks and information disaster incidents information; preventing attacks and denying service); (2) developing a centralized information management system that limits access and operation for each

user; (3) building and operating an Information Security Center at the General Department of Taxation. *For taxpayers in general and enterprises in particular*, The General Department of Taxation should have solutions to more actively support the operation of e-tax services such as using e-invoices, e-tax refunds, and e-tax inspection procedures for enterprises. In parallel, the Government should have policies to invest in developing an internet infrastructure, upgrading the public information technology infrastructure, and providing robust internet coverage in remote and isolated areas to ensure the synchronization in the use of e-tax in the whole country.

Secondly, widely disseminating tax law and providing support services to enterprises by (1) publicizing tax administrative procedures at all levels of tax authorities on the mass media and the official website for enterprises to get information and supervise tax officials; (2) improving the one-stop service department to support enterprises in implementing tax administrative procedures, in particular focusing on providing electronic support services; (3) providing lookup and exchanging information services about enterprises' performance of tax obligations to encourage the awareness of self-compliance with the tax law.

Thirdly, the e-tax system should be upgraded to ensure the effective coordination between tax authorities, tax officials, enterprises, and other authorities in applying e-tax through an overall program that includes an e-tax application that is simple, clear, transparent, easy to adopt for taxpayers and a tax administrative application that is synchronous, stable, transparent, fair and appropriate. Moreover, tax procedures should be reformed as well as tax policies and timely handling if there are any problems or shortcomings. A modern and effective, tax authority, decentralization system should be established to ensure that tax authorities are capable of tax administration in both domestic and international scope.

Fourthly, the supervision and assessment of the adoption of e-tax should be consolidated. In terms of the subject supervising, the General Department of Taxation should define the responsibilities of tax authorities at all levels in e-tax supervision. In addition, the tax authorities could coordinate with commercial banks, tax agents, accounting, and auditing agents in monitoring e-tax implementation. In terms of periodic assessment, it should be implemented quarterly and annually. E-tax monitoring and evaluation tools also need to be modernized through electronic diaries alongside traditional tax reporting and documentation. Finally, focusing and strongly supporting professional training as well as professional working style for tax officials who are responsible for supervising and assessing the adoption of e-tax.

Fifthly, information and education on the perception of complying with the tax law should be promoted for taxpayers in particular and the entire

population in general. Tax authorities could take advantage of information technology and consider it as an effective solution to improve media efficiency. For example, sending messages about tax policy, tax law, or tax obligation information to stakeholders via email, social media (such as zalo), or sending SMS messages to individuals. In addition, the contents of tax laws and tax obligations should be accessible, with training programs at all levels, to form tax awareness that would lead to tax compliance behavior in the future.

Finally, a tax administration strategy based on tax compliance should be developed. Tax authorities manage enterprises' tax compliance by completing a set of criteria for assessing tax compliance and improving methods to assess tax compliance. The set of tax compliance, assessment criteria should be based on three compliance requirements such as declarative compliance, payment compliance, and reporting compliance, and mainly focusing on the assessment criteria of reporting compliance because tax reporting is the easiest activity to cheat.

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Abstrakt

CEL: *Przestrzeganie przepisów podatkowych jest przedmiotem troski wielu naukowców na całym świecie. Większość z nich wskazuje na czynniki wpływające na zgodność podatkową, a jednym z istotnych czynników jest przyjęcie zgodności podatkowej. Nie ma jednak wielu badań analizujących związek między podejściem do systemu e-podatków, przyjęciem systemu e-podatków a przestrzeganiem przepisów podatkowych. Niniejszy artykuł ma na celu zbadanie pośredniczącego wpływu przyjęcia systemu e-podatków na związek między postawą wobec systemu e-podatków a zgodnością z przepisami podatkowymi w oparciu o dowody empiryczne pochodzące od wietnamskich przedsiębiorstw.* ***METODYKA:*** *Na podstawie Teorii Rozsądnego Działania (TRA) zaproponowano model badawczy. W związku z tym rozwijane są hipotezy, zastosowano analizę ilościową na próbie badawczej 435 wietnamskich przedsiębiorstw. Kwestionariusz zawiera pytania zamknięte, które są przesyłane do menedżerów lub księgowych w przedsiębiorstwach poprzez: bezpośrednią rozmowę kwalifikacyjną, e-mailem oraz za pośrednictwem Generalnego Departamentu Podatków. Zebrane dane są następnie przetwarzane i analizowane przez SPSS v.22 i AMOS. W badaniu zastosowano Alfa Cronbacha jako narzędzie do oceny rzetelności lub spójności wewnętrznej skal. Zastosowano eksploracyjną analizę czynnikową (EFA). Wreszcie analiza regresji służy do oceny wpływu zmiennych niezależnych na zmienną zależną oraz do oszacowania modelu badawczego.* ***WYNIKI:*** *Istnieją znaczące bezpośrednie skutki dwóch zmiennych niezależnych, stosunku do systemu e-podatków i przyjęcia systemu e-podatków, ze zmienną zależną zgodności podatkowej. Ponadto przyjęcie systemu e-podatków częściowo pośredniczy w związku między podejściem do systemu e-podatków a przestrzeganiem przepisów podatkowych. Ten efekt mediacji pozytywnie utrwala wpływ podejścia do systemu e-podatków i przestrzegania przepisów podatkowych.* ***IMPLIKACJE:*** *Ten artykuł skupia się głównie na zgodności podatkowej wietnamskich przedsiębiorstw, które mogą być dalej badane z zagranicznymi przedsiębiorstwami działającymi w Wietnamie. Poza tym badania prowadzone są w kontekście Wietnamu, mogą stanowić odniesienie do badań w innych krajach rozwijających się o podobnej gospodarce lub administracji podatkowej.* ***ORYGINALNOŚĆ/WARTOŚĆ****: Niniejsze badanie przyczynia się do wzmocnienia badań związanych z przestrzeganiem przepisów podatkowych, w szczególności badaniem pośredniczącego wpływu przyjęcia systemu e-podatków na związek między podejściem do systemu e-podatków a przestrzeganiem przepisów podatkowych przez przedsiębiorstwa w kontekście Wietnamu. Wyniki badania sugerują pewne implikacje polityczne dla poprawy przestrzegania przepisów podatkowych w Wietnamie, w tym (1) ciągłe ulepszanie infrastruktury informatycznej zarówno dla organów podatkowych, jak i przedsiębiorstw; (2) szerokie upowszechnianie prawa podatkowego i świadczenie usług wsparcia dla przedsiębiorców; (3) unowocześnienie systemu e-podatków w celu zapewnienia skutecznej koordynacji między organami podatkowymi, urzędnikami podatkowymi, przedsiębiorstwami i innymi organami w zakresie stosowania e-podatków; (4) konsolidacja nadzoru i oceny przyjęcia e-podatku; (5) promowanie informacji i edukacji w zakresie postrzegania przestrzegania prawa podatkowego w szczególności wśród podatników i ogółu społeczeństwa; (6) opracowanie strategii administracji podatkowej opartej na zgodności podatkowej.*

Słowa kluczowe: *system e-podatków, stosunek do systemu e-podatków, e-podatek, przedsiębiorstwa, przestrzeganie przepisów podatkowych, Teoria Rozsądnego Działania, TRA.*

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Conflicts of interest

The authors declare no conflict of interest.

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The mediating effect of the budget process on the performance of small- and medium-sized enterprises in Ho Chi Minh City, Vietnam

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Abstract

PURPOSE: *The purpose of this study is to aid the small- and medium-sized enterprise (SME) sector in Ho Chi Minh City (HCMC), resulting in enhancement, improved management performance, and sustainability in adopting beneficial competitive practices aligned to the new era. The study was conducted to determine the key managerial factors that affect the performance of Vietnamese SMEs. We analyzed factors like business planning, organizational commitment, strategy implementation, and managerial control, adopting the budget process as the mediating factor, as it was determined to positively affect SME performance.* **METHODOLOGY:** *In the pilot study, we collected 105 samples using the convenience technique and analyzed the results to examine and validate the reliability of the research instrument. A quantitative approach was used in the pilot study, which tested for reliability using Cronbach's alpha and exploratory factor analysis (EFA) with the software IBM SPSS 20.0. The real study was conducted using quantitative analysis, where the randomization technique was applied to 403 suitable samples. A full quantity of data was tested using Cronbach's alpha, confirmatory factor analysis (CFA), and EFA. Structural equation modelling (SEM) was used to test both the conceptual framework and the hypothesis of the real study. This study was conducted from October 2016 to June 2020.* **FINDINGS:** *Analysis of SMEs identified the mediating factor, budget process, as having a significant effect on the dependent factor, SME performance. Regarding the total effect on SME performance, among four independent variables, the variable with the highest positive total effect on SME performance was strategy implementation. The second highest positive total effect on SME performance was*

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organizational commitment; the third highest positive total effect was business planning; and the fourth was managerial control. Therefore, it can be concluded that when SME managers change these key factors, they will change the level of performance for their enterprises. **IMPLICATIONS:** *This research provides insight into the performance management of SMEs and how managerial factors affect the level of this performance management. In the results of study, the following key factors have been identified: strategy implementation, organizational commitment, business planning, managerial control, and the mediating role of the budget process. These independent variables have significant total effects on SME performance, and the theory's implication builds on performance management to contribute to the field of management. This research model can be applied to management practices to restructure, innovate, and improve the overall performance of SMEs. Additionally, this study will provide SMEs with management procedures to compete, adapt, and enhance their sustainability within the global market.* **ORIGINALITY/VALUE:** *This model provides researchers and practitioners with the invaluable knowledge needed to manage enterprise performance, which will assist SMEs in developing as sustainable and competitive players in this new era.*
Keywords: *SMEs, performance management, strategy implementation, organizational commitment, business planning, managerial control, budget process, Vietnam*

INTRODUCTION

Small- and medium-sized enterprises (SMEs) have made substantial contributions to the economic development of many countries (Chu, 2015; Ngo, 2016; Shamsudeen & Hassan, 2016; Lam, 2017; Nguyen, Khuu, & Nguyen, 2018; Tran, 2019). Thus, there is a need to study the management process and its impact on Vietnamese SME performance and to review the current status of these SMEs against trends in global integration (Nguyen, 2019). Additionally, in Vietnam, SMEs account for approximately 98% of businesses (Nguyen, Khuu, & Nguyen, 2018): their role in supporting the national economy and society is pivotal. SMEs are considered important contributors to ongoing economic development, generating a higher level of employment and additional opportunities (Chu, 2015; Ngo, 2016; Lam, 2017; Nguyen, Khuu, & Nguyen, 2018; Tran, 2019; Nguyen, 2019). Phan et al. (2015) and Nguyen (2019) similarly state that SMEs contribute to job creation and enhanced incomes for the Vietnamese. These are recognized as critical elements in economic development and encourage various social resources, inviting investment and development, and leading to a reduction in poverty.

The current overall capability of businesses and their management are faced with limitations in their skills and capacities to compete in highly competitive global markets; these limitations will be the challenges faced by Vietnamese SMEs (Ngo, 2016; Nguyen, 2019). In order to adapt and be

competitive in global markets, Vietnamese SMEs should develop and adopt management innovations (Chu, 2015; Tran, 2016; Nguyen, 2019). Due to these identified management limitations, Vietnamese SMEs should review and realign their corporate vision and managerial procedures and develop strategies to provide sustainability with innovative, positive, and realistic measures to provide growth within the sphere of international integration.

Additionally, budget processes are part of the management process, supporting SME performance (Nguyen, 2019). In Vietnam, the overall budget process has limited effect due to many Vietnamese SMEs only being partially committed to its implementation (Chu, 2015; Tran, 2016). Upgrades are required to ensure the mediating role of the budget process provides additional performance growth for SMEs (Nguyen, 2019). However, the commitment to improved budget planning in Vietnamese SMEs remains limited (Chu, 2015; Nguyen, 2015; Nguyen, 2019). Overall, effective budgetary planning is a key factor in the actual outcome of all businesses (Chu, 2015; Tran, 2016; Nguyen, 2019). The previous synthesis analysis states that the mediating role of the budget process is critical in the management of cash flow and overall financial position within SMEs, and management needs to adopt significant enhancements to improve their performance.

Overall, performance management plays a crucial role in indicating all relevant values of the enterprises. However, the measurement processes of finance and their limitations, the performance measurement of enterprises should incorporate both financial and non-financial aspects (Luu, 2010; Ibrahim et al., 2012; Mashovic, (2018); Nguyen, 2019). The limitations of financial statements are due to intangible assets not being recorded (Bragg 2018). Moreover, financial indicators can only show results of the performance from an organization's past; they do not forecast the enterprise's future (Okoye, Odum, & Odum, 2017). Therefore, there is a need to review and study the overall performance management, including financial and non-financial.

As noted, the SME sector provides a significant contributing role in supporting the socio-economic development of Vietnam; this sector requires continuous research to identify additional benefits for growth development. However, Vietnamese SMEs currently are limited in management capacity and need to improve their level of overall performance management to improve their competitive advantages globally. Therefore, this study focuses on the mediating role of the budget process with the support of the management process including business planning, organizational commitment, strategy implementation, and managerial control on SME performance. This study will provide suggestions for future additional improvements, enhancements, and growth to improve Vietnamese SMEs' overall performance management and enhance their competitiveness in global markets.

LITERATURE REVIEW

General systems theory and organizational performance

General systems theory was developed by Austrian biologist Ludwig Von Bertalanffy in the 1930s. According to Kihara (2016), in general systems theory all the components of an organization are interlinked; changing one variable brings flow-on changes to other variables. Assessing the theory of a general system, SMEs need a relationship between independent variables and the dependent variable (SMEs' overall performance). Three key organizational resources that impact SME performance include physical, human interaction, and financial strength.

Organizational performance is described as an organization's ability to acquire and utilize its resources and valuables as expeditiously as possible in the pursuit of its operating goals (Griffins, 2006). Organizational performance specifically measures integration performance, relative to financial and nonfinancial performance indications (Luu, 2010; Qi, 2010; Ibrahim et al., 2012; Santos & Brito, 2012; Peronja, 2015; Nguyen, 2019). The nonfinancial performance system is developed as a consequence of the shortages in financial-based performance measures (Ahmad & Zabri, 2016). In general, to improve overall performance, it is necessary to focus on, review, and apply both financial and non-financial indicators within SMEs. Balancing both financial and non-financial indicators provides full value to SMEs, assists in gaining competitive advantages, and supports sustainable development.

A review of the managerial factors with the mediating role of the budget process on the performance of SMEs

The budget process and its mediating role in SME performance

The budget process (BP) is part of the overall management process, including planning. Budgets can serve as a tool to forecast profitability, allocate resources, or communicate specific knowledge from one part of an organization to other sectors of the business. All task efforts are connected to the budget (Ax, Johansson, & Kullvén, 2002) which can be divided into three phases: budget development; budget guidance; and budget review and tracking. As a consequence, the budget process mediates the allocation and implementation of the management process.

The asymmetric information theory and the human factor in the overall planning budget process contribute to an enterprise's performance. The theory of asymmetric information originated in 1970 and was then

implemented in modern economic sciences. The three economists who had a particular influence in developing asymmetric information theory were George Akerlof, Michael Spence, and Joseph Stiglitz, sharing the Nobel Prize in economics in 2001 for their earlier contributions. Asymmetric information can occur in economic negotiation, accounting activities; and communication between non-executive employees and executive management. In asymmetric information, those who possess information are divided into two distinct groups (managers and subordinates), or the information asymmetry is regarded as the difference in the amount of information possessed by the superior and the subordinate (Zainuddin et al., 2008). Additionally, according to Putri and Solikhah (2018), information asymmetry means that the relative difference in information retained by different parties pertaining to the same specific activity within the organization creates an imbalance in the group.

Considering the benefits of the budget process, there are also some limitations when implementing it, as the planning of a budget is tasked by people, and they can instill influences that can generate side-effects impacting the outcomes of the planned budget. The budget process has benefits and limitations that arise from human factors and one of the identified issues for administrators was the potential creation of an information gap within the budget process, reducing the correctness and suitability of the budget. When utilizing asymmetric information, budget planners may be relying on higher levels of contribution from direct employees than their supervisors; direct employees have intimate and specific information to develop the overall decisions relative to the budgetary plan (Yuen & Cheung, 2003). To achieve the development of a suitable budget, it is critical that the combined contributions from management and employees are considered to avert or minimize the level of asymmetric information.

According to Zainuddin et al. (2008), the lack of ideal information could bias managers to perceive uncertainly within a specific environment. Thus, the lack of reliable information is a handicap for managers within a specific environment. Similarly, unreliable information will result in gaps in the budget plan, impacting performance in manufacturing and business activities. The leaders of all businesses, including those at SMEs, prefer that the budgeting process be guided through all levels, including suitable levels of funding, transparency, and accountability (Kimunguyi, Memba, & Njeru, 2015). Putri and Solikhah (2018) contribute that information supplied by subordinates is considered more relevant than information from managers (there is asymmetric information); the contribution by subordinates is historically incomplete, and they can only provide an underestimated budget. Therefore, to achieve concise budget targets for all the enterprise's nominated activities, there is a need to combine the contributions of its employees and management.

The budget plays a major role in the performance of businesses (Pimpong and Laryea, 2016), providing the mediating role in allocating all the activities within SMEs and contributing to their overall performance (Nguyen, 2019). To maintain their current competitive advantages, SMEs must constantly seek to maximize their effectiveness and efficiency in the overall budget control process (Yee et al., 2016). The connection between budgetary participation and managerial performance is of particular interest in accounting and management fields (Govindarajan, 1986; Dunk, 1993; Nouri & Parker, 1998; Rachman, 2014; Ogiedu, Killian & Odia, 2013; Li, Nan, & Mo, 2010; Hariyanto, 2018; Susanti, Eprillison, & Jolianis, 2018; Badu, Awaluddin, & Mas'ud, 2019). The applied theory of budget participation is a key factor in increasing the effectiveness and efficiency of the budgets of enterprises, providing an additional increase in managerial performance (Manafe & Setyorini, 2019). As identified in the previously notes theories and related studies, there is a strong relationship between the budget process and the performance of SMEs. Given this, the related hypothesis is as follows:

H5: There is a significant relationship between the budget process and SME performance.

The relationship between business planning and the budget process towards SME performance

Planning is the first element of the overall management process for enterprises of all sizes. Planning forms part of the theory of management and involves setting goals, establishing strategies to achieve those goals, and developing plans to integrate and coordinate activities. Most studies focus on exploring the relationship between strategic planning and the enterprise's performance, including financial performance (Nzewi & Ojiagu, 2015; Gomera et al., 2018; Omotayo et al., 2018). Business plans (BP) are considered a significant tool for securing suitable finance, forming alliances, developing the enterprise's direction, and measuring performance (Burns & Dewhurst, 1990). An effective business plan will support an enterprise's growth, helping it manage financial cash flow and develop its implementation plan (Yulia, 2017).

Brinckmann et al. (2010) stated that business planning utilizes systematic and oriented predictions, which provide suggestions for process options. It is considered pivotal in enhancing an enterprise's success due to its high impact on profitability, stability, and elevating the enterprise's market level (Yulia, 2017). According to Nguyen (2019), the objective of business planning is to develop all management activities for each sector, including manufacturing, operations, and sales. Business planning and managerial

control relative to the firm's performance are major contributors towards the overall management process (Nguyen, 2019). Ibrahim (2019) stated that a suitably defined plan guides the outcomes of goals, provides additional guidance on the allocation and implementation of resources, and provides planned and measurable outcomes. According to Nguyen (2019), business planning is pivotal in supporting the performance of SMEs. In conclusion, the related hypothesis is as follows:

H1b: There is a significant relationship between business planning and SME performance.

According to Van (2015), budgeting is defined as the process of quantifying the elements of each budget into an actionable plan, with a timeline proposed by management and their employees to guide and assist in the coordination of tasks towards implementation. The relationship between business planning and the mediating role of budgeting is a significant and critical factor in implementing business strategy, control, and continued organization management (Nguyen, 2019). A strengthened connection between the two factors allows SMEs to realize maximum performance in business and overall management activities. The related hypothesis is as follows:

H1a: There is a significant relationship between business planning and the budget process.

The relationship between organizational commitment and the budget process towards SME performance

The culture of an enterprise is related to its overall management process, and the role of organizational commitment (OC) provides significant support to SME performance. Strengthening the commitment of enterprises is a key factor in the improvement of an enterprise's growth and development (Princy & Rebeka, 2019). Porter, Steers, Mowday, and Boulian (1974) note that organizational commitment identifies employees' level of commitment to the organization as well as how they identify with an organization's values and goals; organizational commitment is the connection of management with their subordinates. With a strong, loyal commitment to the organization, a united focus of working towards a common goal, striving to attain higher results in the long-term for its enterprise (Abdul, 2008). Additionally, Zefeiti and Mohamad (2017) state that organizational commitment facilitates a relationship with and acceptance of the enterprise, inclusive of its goals and values. According to Khan, Ziauddin, & Ramay (2010), as the level of

organizational commitment grows, corresponding positive outcomes grow in parallel; high levels of commitment are strongly linked to high levels of achievement in organizational performance. Organizational commitment has developed as a theory and study (Porter et al., 1974; Steers, 1977; Allen & Meyer, 1990, Meyer & Allen, 1991; Batilmurik et al., 2019).

Organizational commitment is linked to an enterprise's performance or departmental performance (Recep et al., 2010; Moshood et al., 2019). When considering either affective, continuance or normative commitment, employee commitment has a critical influence on the performance of an enterprise (Moshood et al., 2019). In summary, organizational commitment plays a key role in SME performance, based on its partnered link. Based on information generated theory and related studies. The related hypothesis is as follows:

H2b: There is a significant relationship between organizational commitment and SME performance.

According to Wong-On-Wing, Guo, and Lui (2010) and Rachman (2014), organizational commitment impacts participation within the overall budgeting process. When enterprises promote a higher level of commitment from individuals, the outcomes achieved are correspondingly higher. According to Ardiansyah, Isnurhadi, and Widiyanti (2019), to attain budget targets that produce high managerial performance, consideration must be given to ways to achieve organizational commitment. According to Nouri and Parker (1998), there is a strong link between budget participation and organizational commitment. The budget process can provide overall improvement to subordinates' cultural belief, sense of agency, and solid involvement with an organization, bringing them into alignment and commitment to the defined budgets of the organization. Based on this synthesis analysis, the related hypothesis is as follows:

H2a: There is a significant relationship between organizational commitment and the budget process.

The relationship between strategy implementation and the budget process towards SME performance

Ngugi et al. (2017) stated that strategy implementation (SI) is relative to an organization's resources as well as its employees' positive motivation in achieving its objectives. To achieve a successful strategy implementation, an enterprise should develop effective internal systems and processes

to improve organizational performance; define future direction; assign teamwork resources based on expertise; deal effectively with organizational changes and uncertainties in external environments; and define processes for decision-making and prioritizing (Donna, 2018).

Successful strategy implementation requires contributions and cooperation from all levels of employees within an enterprise: Its effectiveness is impacted by the quality of people participating within the overall process (Obiero and Genga, 2018). Similarly, SI affects the whole organization and can only be successful if implemented and adopted throughout the entire organization (Weissenberger-Eibl et al., 2019); strategy implementation has a positive relationship with SME performance, if the enterprises possess well-developed and suitably strategic plans. Thus, strategy implementation is an important tool for an enterprise in achieving its objectives and goals. The hypothesis is as follows:

H3b: There is a relationship between strategy implementation and SME performance.

The budget process plays a key role to allocate the cash-flow for providing the strategy implementation to achieve the goals and objectives of the enterprises. According to Doan et al. (2015), there are similarities in the relationship between implementation processes and overall budget processes. Combined information and opinions drawn from research, employees, and managerial contributions, define the enterprise's overall goals and objectives. The budget is the primary tool for the enterprise to successfully implement its business plans and strategies. According to Mihaila, Ghedrovici, and Badicu (2015), budgets play a critical role in strategy implementation; budgets that are well-developed can generate significant benefits. Budgeting provides the foundation for all successful businesses (Banks, 2018). The role of the budget process is critical in the allocation of tasks and their implementation and in providing a higher level of performance in alignment with the strategies of SMEs. Based on the previous analysis, the related hypothesis is as follows:

H3a: There is a significant relationship between strategy implementation and the budget process.

The relationship between managerial control and the budget process in SME performance

Control theory is the element of the overall management process. Its development as a theoretical discipline is linked to *Planning and Control*

Systems: A Framework for Analysis, by Robert Anthony (1965). Managerial control assures management that assigned resources are utilized effectively and efficiently to attain an enterprise's objectives. It assists in developing tools to measure performance (Anthony, 1965). There are several definitions of business managerial control related to industry, core business, organizational needs, and managerial style (Lakis & Giriunas, 2012; Suárez, 2017).

According to Cambalikova and Misun (2017), control is a process where managers ensure that financial budgets are defined and applied to selected task elements to align with the goals and objectives of an enterprise. Managerial control ensures management directives are carried out. Its employees adopt ongoing assigned tasks, ensuring proper operational execution, developing a culture of promoting accuracy and quality completion, and providing reliable processing of financial transactions (Eke, 2018).

Jones, George, and Hill (1998) state that control is regarded as a key function, providing accuracy in measurement, monitoring, and evaluation processes that achieve the goals and objectives of an enterprise. Vietnamese SMEs need to focus on managerial control to improve overall performance in attaining business targets (Nguyen, 2019). Managerial control would assist in realizing inherent problems within an SME, providing managerial review and adjustments to correct problems such as sub-standard levels of performance. Based on the research and discussions from the above analysis, the related hypothesis is as follows:

H4b: There is a significant relationship between managerial control and SME performance.

There is a close link between managerial control and the budget process within overall business management, which impacts upon the enterprise's overall performance and minimizes unforeseen risks. These two functions – managerial control and the budget process – have a close relationship that requires constant refinement. The overall budget process plays a significant role in the performance of any enterprise. Budgeting provides internal controls for the implementation of planning through the processing of defined costs, thus ensuring suitable annual appropriation of finances is secured (Omosidi et al., 2019). In general, the budget process is critical in the activities of an enterprise; it is linked with managerial control in overall performance. Based on the concepts and arguments presented above, the related hypothesis is as follows:

H4a: There is a significant relationship between managerial control and the budget process.

Figure 1 presents the conceptual framework and hypotheses for this study.

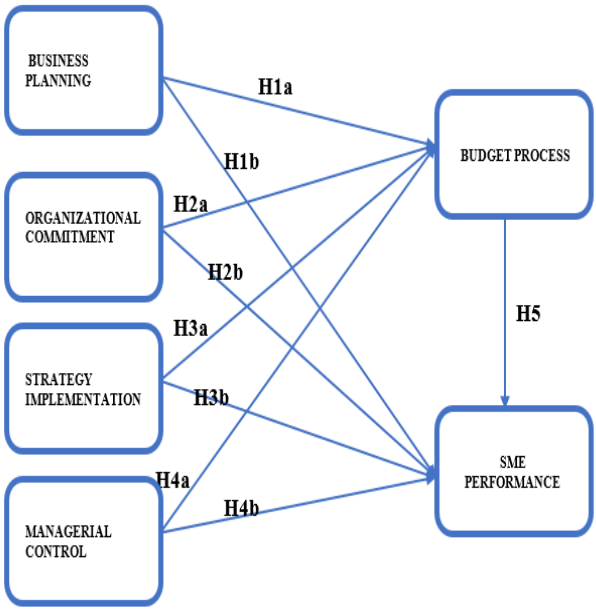

Figure 1. Conceptual framework and hypotheses for this study

METHODOLOGY

According to Ward (2019), an SME is identified as a business that maintains its revenues, assets, or number of employees below the threshold of what is considered a large company. The definition of an SME differs between countries and industries. Legally registered Vietnamese SMEs are divided into three levels: micro, small, and medium-size. Our research focuses on Vietnamese SMEs within the manufacturing sector, specifically in Ho Chi Minh City (HCMC). According to the Decree of the Vietnamese Government (2009), SMEs can be identified according to two standards: capital and the number of employees. This study focuses on SMEs that employed over 10 persons but less than 200 (small enterprises); and greater than 200 persons

up to 300 (medium-sized enterprises); there was no research review of micro enterprises.

The study incorporates two stages: the pilot study and the real study. The pilot study proves the reliability of the questionnaires for dependent, mediating, and independent variables. The purpose of the pilot study was to assess the reliability of the overall instruments being used within the real study. A quantitative approach used in the pilot study tested for reliability using Cronbach's alpha, exploratory factor analysis (EFA) by software IBM SPSS 20.0. The questionnaire distribution for the pilot study was 135 data samples. Questionnaire returns were 115. Valid questionnaires for analysis in the pilot study provided 105 data samples. The 105 data samples were scrubbed to remove the missing data after imputing it for the analysis. Data from the pilot study were not applied to the real study.

Data collection for the real study began with the distribution of 495 questionnaires. Of these, 429 were returned, and 403 were validated for use in analysis; the validity rate was 93.548%. The random technique was used for collection. The real study was conducted with a full quantity of data to test using Cronbach's alpha; confirmatory factor analysis (CFA) was also utilized, as was EFA. Structural equation modelling (SEM) was used to test both the conceptual framework and the hypothesis of the real study (see Figure 1).

The scales of measurement for the study were: business planning, organizational commitment, strategy implementation, and managerial control. These were measured with a 5-degree Likert scale from '1: Strongly disagree' to '5: Strongly agree.' The budget process and SME performance were measured by Likert from '1: Least effective' to '5: Most effective.'

RESULTS

Pilot study: The results from analysing the reliability of the scales of measurement for the factors business planning, organizational commitment, strategy implementation, managerial control, the budget process, and SME performance, with all coefficients for Cronbach's alpha was greater than 0.8. Reliability of the scales of measurement was accepted. The only non-accepted item was P3, because the corrected items total correlation was identified as being less than 0.5 (it was 0.302). All observed variables were grouped by individual factor; only item SI2 was separated, re-classified into the factor of strategy implementation, and removed (this was done by EFA). In conclusion, there were only two removed items, SI2 and P3 ('SI2: Managers need to be proactive in planning implementation' and 'P3:

Budgetary motivation is derived from the setting of budget goals'); these were not applied in the real study.

Real study: 403 complying data samples were collected for analysis.

Synthesis of Cronbach's alpha of all factors

The data in Table 1 identifies the observed variables scales of measurement applied to the following factors: business planning, organizational commitment, strategy implementation, managerial control, the budget process, and SME performance. The results from analyzing the reliability of the scales of measurement (the coefficient of Cronbach's alpha) for all factors are > 0.8. Concurrently, the observed variables also have the corrected item-total correlation > 0.5. Therefore, all observed variables of the scales of measurement factors meet the reliability requirements and are utilized in the preceding steps of the study.

Table 1. Synthesis of Cronbach's alpha of all factors

Factors	Cronbach's alpha	Evaluation
Business planning (PL)	0.925	Accepted
Organizational commitment (OC)	0.921	Accepted
Strategy implementation (SI)	0.886	Accepted
Managerial control (CL)	0.896	Accepted
Budget process (BP)	0.935	Accepted
SME performance (P)	0.905	Accepted

Exploratory factor analysis (EFA)

Data was analyzed using the Kaiser-Meyer-Olkin measure of sampling adequacy (KMO) and Barlett's test. The results of EFA processed with the software SPSS 20.0 and the coefficient of KMO was 0.933 > 0.05, and Bartlett's test of sphericity produced the statistic meaning with a Sig. of 0.000 < 0.05.

The explained variance of 63.381% > 50% complies with the required standards. It identifies that 63.381% of changes from five factors extracted are explained by observed variables. The results in the rotated component matrix, it is evidenced that all the factors have their discriminant validity and the observed variables of the individual factor grouped into separate groups. The observed variables in each factor have correlations that contribute relevance to each factor. The factor loading of each observed variable is > 0.6. Therefore, the EFA was satisfied and met the required standard.

Confirmatory factor analysis (CFA)

Table 2 identifies that CMIN/DF= (<2), TLI and CFI exceeded 0.9, and RMSEA= 0.041 (< 0.05), indicating the model has significant value. Therefore, the model comparatively aligns with the data. To obtain significant results, the researcher considered issues related to the reliability of the following scales of measurement: Cronbach's alpha (CA), composite reliability (CR), and average variance extracted (AVE).

Table 2. Index for evaluating the suitability of the model with research data

Evaluating index	Value
CMIN/DF	1.676
TLI	0.936
CFI	0.940
RMSEA	0.041

The reliability of scales of measurement was evaluated by three indexes: composite reliability, average variance extracted, and Cronbach's alpha. The scales of measurement were estimated to have reliability of CR > 0.5, and AVE has meanings with value > 0.5 (Hair et al., 1992; Le, 2016). Table 3 demonstrates that indexes with CR > 0.5, AVE > 0.7, and Cronbach's alpha of all factors were > 0.7. The results of the analysis and evaluation revealed that all the scales of measurement achieved validity and reliability. All the results of the CFA were suitable since all the models of the CFA were suitable for the market data without any adjustments, and there was no instance of minus variance.

Table 3. Cronbach's alpha, composite reliability (CR), and average variance extracted (AVE).

Factors	Cronbach's alpha	CR	AVE
Budget process	0.935	0.936	0.622
Business planning	0.925	0.926	0.584
Organizational commitment	0.921	0.924	0.578
Strategy implementation	0.886	0.889	0.537
Managerial control	0.896	0.898	0.563
SME performance	0.905	0.906	0.517

Analyzing structural equation modeling (SEM)

Based on the index in Figure 2, it was concluded that the model fits well with the data: CMIN/df = 1.676 (<2); TLI = 0.936 (>0.9); CFI = 0.940 (>0.9); and RMSEA = 0.041 (<0,05). The estimated results of parameters presented in Table 4 show that all relationships have the statistical meanings.

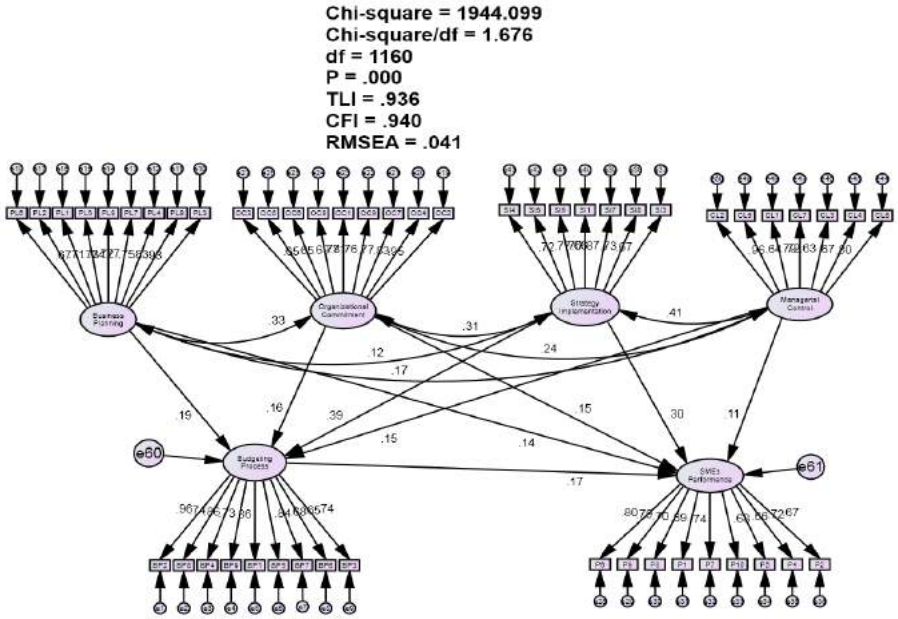

Figure 2. Results of SEM (standardized)

The results in Table 4 identify that the p-value of all factors is < 0.05; moreover, they estimate (unstandardized) that all factors significantly impact SME performance; thus, all hypotheses are supported. The table demonstrates that all relationships of independent factors or mediating factors impact dependent factors (SME performance). Based on the P-value of estimates in Table 4, the P-value of all factors is <0.05; all correlations in SEM have statistical reliability of 95%. The factors business planning, organizational commitment, strategy implementation, managerial control, and the mediating factor of the budget process, all impact positively the dependent factor of SME performance.

Table 4. Regression weights

Regression weights: Group number 1 - default model			Estimate	S.E.	C.R.	P
Budget process	<---	Business planning	0.16	0.039	4.143	***
Budget process	<---	Organizational commitment	0.16	0.047	3.401	***
Budget process	<---	Strategy implementation	0.591	0.082	7.186	***
Budget process	<---	Managerial control	0.162	0.053	3.083	0.002
SME performance	<---	Business planning	0.104	0.036	2.848	0.004
SME performance	<---	Organizational commitment	0.127	0.044	2.908	0.004
SME performance	<---	Strategy implementation	0.39	0.08	4.851	***
SME performance	<---	Managerial control	0.107	0.049	2.201	0.028
SME performance	<---	Budget process	0.148	0.051	2.93	0.003

The results in Table 5 indicate that when analyzing the SEM with standardized regression weights among the variables of the study, it verifies that all relationships relating to the independent factors or mediating factors impact on the dependent factor (SME performance) with the detail standardized regression weight in detail.

Table 5. Result of analyzing SEM with standardized regression weights

Standardized regression weights: Group number 1 - default model			
			Estimate
Budget process	<---	Business planning	0.189
Budget process	<---	Organizational commitment	0.162
Budget process	<---	Strategy implementation	0.393
Budget process	<---	Managerial control	0.148
SME performance	<---	Business planning	0.140
SME performance	<---	Organizational commitment	0.148
SME performance	<---	Strategy implementation	0.297
SME performance	<---	Managerial control	0.112
SME performance	<---	Budget process	0.170

Table 6 demonstrates that the budget process as a mediating factor has a significant effect on SME performance, with beta 0.170. Regarding the total effect on SME performance, among four independent variables, the variable with the highest positive total effect on SME performance was strategy implementation, with beta 0.364. The second highest positive total effect on SME performance was organizational commitment (beta 0.175). The third highest positive total effect on SME performance was business planning (beta 0.173). The fourth highest positive total effect on SME performance was managerial control (beta 0.138).

Table 6. Direct, indirect, and total causal effects

	Budget process			**SME performance**		
	Direct	**Indirect**	**Total**	**Direct**	**Indirect**	**Total**
Managerial control	0.148	-	0.148	0.112	0.025	0.138
Strategy implementation	0.393	-	0.393	0.297	0.067	0.364
Organizational commitment	0.162	-	0.162	0.148	0.028	0.175
Business planning	0.189	-	0.189	0.140	0.032	0.173
Budget process	-	-	-	0.170	-	0.170

DISCUSSION

For positive growth in their overall management, SMEs must adapt and maintain parity with the current global market, provide improvement for management processes, and focus on the budget process as the mediating role in improving SME performance. It is necessary for SMEs to enhance their performance and gain the benefits that arise from involvement in global markets. Detailed suggestions for achieving this are outlined in the following paragraphs.

Analysis of SMEs identified the mediating factor, budget process, as having a significant effect on the dependent factor, SME performance. The budget process plays an important role in providing calculations, proposals, detailed summaries that incorporate every relevant source, and resource allocation. It allows for multiple specific tasks to be implemented within a defined timeframe. Budget planning assigns the necessary resources to implement planned activities and defines plans for manufacturing, business, and management. The importance of budget accuracy depends on the enterprise's manufacturing and business situation and the management team's overall commitment level. High budget estimates will result in waste; low budgets will cause difficulties for employees creating implementation

plans and impact outcomes. Therefore, planning a budget requires the cooperation of all internal division employees and management in discussing the relevant details. Once finalized, the budget should be adopted by all parties within the enterprise. The interconnecting functions of a strong SME management process require the use of an overall budget process, which provides a key element. This allows for the implementation of all activities to maximize the achievement and performance of the business organization's strategic goals. The proposed budget should be aligned to the enterprise's vision and mission statements. The budget needs to be specific and nominate the appropriate goals and objectives. Specific budgets should be distributed to all relevant departments, such as management, planning, operations, manufacturing, sales, and marketing. SMEs' managers and employees need to improve their budget processes to achieve their goals and objectives, which might involve enhancing their budget analysis, development, and review procedures.

It should be noted that the factor with the highest positive total effect on SME performance was strategy implementation. Thus, SMEs should strongly focus on strategy implementation, including employee training, guidelines for strategy implementation, and organizational structure improvements, due to its flexibility with strategy implementation. SEM management should provide support and concise preparation for strategy implementation by applying good resources, infrastructure, and budget preparation; these elements are crucial in supporting their management and business.

As noted in the results, the second-highest positive total effect on SME performance was organizational commitment. Thus, SMEs should develop and provide competent overall commitment to their business through suitable levels of finance, corporate culture, good working environment, good leadership, well-developed policies, and good HR policies for their employees in an effort to inspire employees in their work performance.

Following organizational commitment, business planning was the third highest positive total effect on SME performance. There are numerous elements SMEs should include as they seek to improve performance: SME management should have a clear organizational vision and mission; planned goals and objectives need to be detailed and clearly identified. When developing business planning, there is a need for a deep understanding and knowledge of the current status of internal resources such as capital, raw material, inventory, technology, and human resources. Contributions are required from all internal levels to improve the knowledge of managers and commitment of all employees in developing their overall plans, budget preparation, market analysis, competitor analysis, potential customer lists.

Additionally, management needs to allocate time for suitable levels of planning.

The fourth highest positive total effect on SME performance was managerial control. SME management should focus on the managerial control elements of tracking, measuring, and correcting activities to ensure compliance with business planning and strategy implementation. The management team analyses documents, employees' knowledge, and the skills required to accomplish tasks.

SME performance includes financial and non-financial performance management, which are also critical in the success of an enterprise. It has been determined that SME performance includes both financial and non-financial indicators. Financial indicators are the measurements SMEs can use to achieve financial objectives, such as profits, budget goals, cost targets achieved quarterly, and growth in sales revenue, etc. Non-financial indicators include production or service output goals, customer feedback scores, growth in the customer base, delivering products or services on time, developing process management capabilities, and the improvement and innovation of targets, etc. Therefore, in organizational performance, both financial and non-financial performance management are critical to the success of an organization.

Finally, empirical analysis focuses on specific SMEs in the manufacturing sector. However, different kinds of manufacturing industries will have different characteristics, since they are facing different competitors. Further suggestions for SMEs include attention to the concept that the budget process and internal managerial skills are important in the performance of SMEs. However, the quality of products produced by SMEs and the price of these products would be important for competition. SMEs should improve the quality of their products and services in order to compete. Training programs for employees would be another important factor in the success of SMEs, updating employees' skills to adapt to competitive markets. The financial management of SMEs is the third point to be taken into account. SMEs face difficulty in borrowing money from banks compared to large businesses, as they may lack the collateral requested by banks. The final recommendation is that local governments develop policies supporting SMEs in technology, management, and financial support, in order to promote the survival and sustainable development of SMEs in current markets.

CONCLUSION

The results demonstrate that the research model has validity. The independent variables and the mediating variable all have significant

effects on the dependent variable (SME performance). All the hypotheses are accepted. Specifically, the SEM results illustrated that the independent variables of business planning, organizational commitment, strategy implementation, and managerial control have a positive direct and indirect effect on SME performance, and the mediating factor of the budget process has a significant and direct effect on SME performance. Regarding the total effect on SME performance, among four independent variables, the variable with the highest positive total effect on SME performance was strategy implementation. The second highest positive total effect on SME performance was organizational commitment; the third-highest positive total effect was business planning; and the fourth was managerial control**.** Analysis of SMEs identified the mediating factor, budget process, as having a significant effect on the dependent variable, SME performance. Therefore, when the management of SMEs in the manufacturing sector of HCMC changes these key factors, they also change the level of performance for their enterprises.

Additionally, this research focuses on the effects of independent variables, with the mediating role of the budget process, on SME performance. The findings suggest that the identified variables and the mediating role of the budget process have significant effects on SME performance. Addressing budget process issues will reflect positively on the overall outcomes of the enterprises. Therefore, SME management needs to focus on the mediating role of the budget process within the management process, and it is necessary to improve the mediating role of the budget process within SMEs to enhance overall performance.

The findings of this study suggest that strategy implementation is the factor with the highest positive total effect on SME performance. Therefore, when SMEs develop and implement their management processes, strategy implementation should be focused on as a priority to improve overall SME performance. The results also suggest that organizational commitment has the second highest positive total effect on SME performance. Therefore, organizational commitment is crucial for supporting SME performance. In the corporate governance process within SMEs, it is necessary to consider the role of organizational commitment to support overall performance. The third factor that has total effects on SME performance is business planning. Therefore, business planning plays a vital role in enhancing SME performance and requires attention. When developing and implementing the business planning process, analysis and review are necessary to ensure professionalism. The factor with the fourth-highest positive total effect on SME performance is managerial control. Managerial control plays a vital role in SME performance, as enhancing management will also improve an

SME's general performance level. Therefore, managerial control should be developed as a focus to enhance SME performance.

Limitations and direction for further research

There are several limitations to this study. The research was limited to data collected in HCMC, and this sample did not provide a comprehensive view of typical enterprises in Vietnam. Additionally, there is a lack of comparative research available from different regions and other diverse industries, which might have expanded the overall scope of this research. Administrators and future researchers can use this study as a base from which to expand the research by enriching the research variables and adding geographic scope, for example, by looking beyond HCMC into enterprises in broader regions of Vietnam. Further studies might conduct a comparative study by addressing different geographic and cultural areas. The outcomes would be realized when applied to SME performance management, providing suitable solutions for SMEs in various geographic and cultural areas of Vietnam.

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Abstrakt

CEL: *Celem tego badania jest wsparcie sektora małych i średnich przedsiębiorstw (MŚP) w Ho Chi Minh City (HCMC), co skutkuje ulepszeniem, lepszą wydajnością zarządzania i zrównoważonym przyjęciem korzystnych praktyk konkurencyjnych dostosowanych do współczesności. Badanie przeprowadzono w celu określenia kluczowych czynników zarządczych, które wpływają na wyniki wietnamskich MŚP. Przeanalizowaliśmy takie czynniki, jak planowanie biznesowe, zaangażowanie organizacyjne, wdrażanie strategii i kontrola zarządcza, przyjmując jako czynnik pośredniczący proces budżetowy, który pozytywnie wpływa na wyniki MŚP.* ***METODYKA:*** *W badaniu pilotażowym zebraliśmy 105 próbek i przeanalizowaliśmy wyniki w celu zbadania i potwierdzenia wiarygodności instrumentu badawczego. W badaniu pilotażowym zastosowano podejście ilościowe, w którym testowano wiarygodność za pomocą analizy alfa Chronbacha i eksploracyjnej (EFA) z oprogramowaniem IBM SPSS 20.0. Rzeczywiste badanie przeprowadzono z wykorzystaniem analizy ilościowej, w której technikę randomizacji zastosowano na 403 próbie. Pełna ilość danych została przetestowana za pomocą alfa Cronbacha, konfirmacyjnej analizy czynnikowej (CFA) i EFA. Modelowanie równań strukturalnych (SEM) zostało wykorzystane do przetestowania zarówno ram koncepcyjnych, jak i hipotez rzeczywistego badania. Badanie przeprowadzono w okresie od października 2016 do czerwca 2020.* ***WYNIKI:*** *Analiza MŚP zidentyfikowała czynnik pośredniczący, proces budżetowy, jako mający istotny wpływ na czynnik zależny, czyli wyniki MŚP. Jeśli chodzi o łączny wpływ na wyniki MSP, spośród czterech czynników zarządzania, czynnikiem o największym pozytywnym łącznym wpływie na wyniki MSP było wdrożenie strategii. Drugim największym pozytywnym łącznym wpływem na wyniki MŚP było zaangażowanie organizacyjne; trzecim co do wielkości pozytywnym efektem łącznym było planowanie biznesowe; a czwartym była kontrola zarządcza. Można zatem stwierdzić, że gdy menedżerowie MŚP zmienią te kluczowe czynniki, zmienią one poziom wydajności swoich przedsiębiorstw.* ***IMPLIKACJE****: Badanie to dostarcza wglądu w zarządzanie wydajnością MŚP oraz w jaki sposób czynniki zarządcze wpływają na poziom tego zarządzania wydajnością. W wyniku badania*

zidentyfikowano następujące kluczowe czynniki: realizacja strategii, zaangażowanie organizacji, planowanie biznesowe, kontrola zarządcza oraz pośrednicząca rola procesu budżetowego. Te czynniki związane z zarządzaniem mają znaczący wpływ na wyniki MŚP, a implikacja teorii opiera się na zarządzaniu wynikami, aby przyczynić się do rozwoju dziedziny zarządzania. Ten model badawczy można zastosować do praktyk zarządzania w celu restrukturyzacji, innowacji i poprawy ogólnych wyników MŚP. Ponadto badanie to zapewnia MŚP procedury zarządzania, które umożliwią im konkurowanie, adaptację i poprawę zrównoważenia na rynku globalnym. ***ORYGINALNOŚĆ/WARTOŚĆ****: Model ten zapewnia naukowcom i praktykom bezcenną wiedzę niezbędną do zarządzania wydajnością przedsiębiorstwa, która pomoże MŚP w rozwoju jako zrównoważonych i konkurencyjnych graczy na rynku.*
Słowa kluczowe: *MŚP, zarządzanie wynikami, wdrażanie strategii, zaangażowanie organizacji, planowanie biznesowe, kontrola zarządcza, proces budżetowy, Wietnam*

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Conflicts of interest

The authors declare no conflict of interest.

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Microfinance services and MSE growth in Pakistan: The mediating perspective of social and psychological capital

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Abstract

PURPOSE: *In the era of globalization and competition in a vigorous market, micro and small enterprises (MSEs) look for sustainable growth by consuming diverse resources. Previous studies have identified that financial services of microfinance are essential drivers for SMEs' survival. Yet, the feature role of other microfinance services, such as micro-credit, micro-savings, micro-insurance, training, and social networking, to achieve substantial growth of the MSE sector is still lacking, which explains why MSEs make such a small contribution to Pakistan's economy. Therefore, the main purpose of the research is to consider the impact of microfinance services on the growth of MSEs in Pakistan, as MSEs are the most vulnerable group in the country and throughout the world. Moreover, this study also identified the mediating role of social and psychological capital in enhancing the productivity of microfinance services for MSEs.* ***METHODOLOGY:*** *770 respondents from metropolitan cities in Pakistan were contacted for the survey, and the response rate was 64%. After screening the data, only 357 questionnaires appeared to be completed in all respects, so they were initially fed into the computer spread and then imported for further analysis. Structured questionnaires were used to collect the data from 357 micro and small enterprises operating in the developing market of Pakistan. Derived hypotheses were verified through Structural Equation Modelling (SEM) using AMOS 21.* ***FINDINGS:*** *The study's findings revealed that microfinance services have an essential role in promoting MSE growth. Microfinance institutions' services, such as micro-credit, micro-savings, micro-insurance, and training, play an important role in the development of MSEs. Moreover, social and psychological capital are the crucial*

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factors that partially mediate the relationship between microfinance services and MSE growth in Pakistan. The limitation of this study is the adaptation of a cross-sectional design to collect the data. Longitudinal research at different time frames may present diversified results. ***IMPLICATIONS:*** *The study gives the impression that institutions of microfinance, practitioners, and other policymakers should enhance their perimeter to offer microfinance services and support group-based lending or training to maximize their social and psychological capital, through which MSEs may be able to attain substantial growth.* ***ORIGINALITY/VALUE:*** *This empirical study contributes to the literature on microfinance services and MSE growth by focusing on the mediating effect of social and psychological capital, and providing the foundation for further studies.*

Keywords: *microfinance services, social capital, psychological capital, micro and small enterprises, structural equation modeling.*

INTRODUCTION

Worldwide, micro and small enterprises (MSEs) show significant contributions to the economy. For this reason, they are in a stable position to make up the economic movements with the fulfillment of primary objectives like creating employment opportunities (Chen et al., 2017), increasing household income level (Santoso et al., 2020), and the opportunity to increase the living standard in the country (Agbola et al., 2017). In developed countries, the significant contribution of MSEs accounts for 51% of GDP via formal sources and 13% via informal sources, 16% of GDP is through formal businesses, and 47% through informal ones in developing economies (Demirgüç-Kunt et al., 2020).

Similarly, like in other developing countries, the government of Pakistan also encourages financial and economic stability for MSEs because of their important role in the growth and development of the economy. According to Ahmad and Yaseen (2018), there are 3.2 million businesses, of which 90% of this approximated figure are micro and small businesses, and they contribute up to 30% of the GDP in Pakistan, with 25% of the whole employment. MSEs' contributions are highly valued, so they require special attention to build–up and pave the way for them (Raza et al., 2018), but they still face basic challenges in operating optimistically and contributing to a country's economic expansion.

The concept of microfinance signifies the provision of loan services, particularly to lower-income communities, to raise their household income through escalated entrepreneurial activities and support sustainability in economic development (Mohiuddin et al., 2020; Estrin et al., 2018; Newman et al., 2017). The essential purpose of credit services is to help MSEs by granting the opportunity to attain growth in emerging markets and

to become more self-contained (Wakunuma et al., 2019). In an emerging market like Pakistan, microfinance provisions towards alleviating poverty have been the subject of research in the area of sustainable economic growth (Tasos et al., 2020; Hussain et al., 2019; Ghalib et al., 2015; Naveed, 2014). The randomized studies show that most of the researchers have attempted to assess the key aspects that may disturb the sensation of microfinance interventions in terms of poverty alleviation and credit repayment services. These aspects bring in the attention to which microfinance providers help clients enhance their social contacts and trust (Ahmad & Rusdianto, 2020; Ojong & Simba, 2019; Newman et al., 2014; Brown et al., 2011), and microfinance institutions can raise the level of MSE practical support during the loaning process (Kakembo et al., 2021).

The concept of the microfinance program is not new in Pakistan. It started in the 1980s but matured in the 1990s, and now a lot of microfinance institutions (MFIs) are working for the development of MSEs with the help of the government (Bashir & Hassan, 2018). Moreover, Awan and Juiya (2015), found that the acceptance rate of applications for a loan by the banks is 65% for the medium enterprises while around 75% of loan applications have been rejected for MSEs. This caused an effect on the growth of MSEs in Pakistan.

In comparison to the vast body of previous studies investigating the effects of microfinance program interferences on credit repayment agendas for poor communities and reducing poverty, there is a lack of empirical shreds of evidence found in the literature, particularly for the emerging market of Pakistan, as to whether microfinance interventions impact the growth of existing MSEs. Though the empirical investigation by development economists (Vassallo et al., 2019; Banerjee et al., 2015) has begun, the conclusions of such research findings are unsatisfying and find narrow attention on the fundamental methods which can support the provision of microfinance effects on small businesses' activities. In view of the debate about whether microfinance programs help the growth of MSEs, researchers have advocated a greater emphasis on identifying which micro-credit customers succeed in growth while others fail (Dutta & Banerjee, 2018; Siwale & Okoye, 2017).

The early models of microfinance programs, such as the Pakistan Microfinance Network (PMN) and Akhuwat, which followed the Grameen Bank basic model, were founded on the assumption that the small entrepreneur's primary problem was a shortage of economic resources. Single-handedly, financial capital is insufficient to ensure the sustainable growth of existing MSEs and attain competitive advantage (Khan et al., 2019; Rungani & Potgieter, 2018). The microfinance program's sustainability is important, as small entrepreneurs could be dependent on the expertise, social contacts, and mindset with their degree of psychological capital and social capital to

seek the growth of MSEs. According to the resource-based view of the firm, the combined effect of financial, social, and psychological capital can enable even MSEs to gain a competitive advantage in an emerging market (Baluku et al., 2018). Many institutions are investigating interconnected successful microfinance programs that are accessible with a diversified variety of skills and social assistance with financial resources. Therefore, the aim of the current study is to fill this void and contribute to the entrepreneurial finance literature by empirical investigation of a proposed model that recognizes social and psychological capital as paths by which microfinance programs can lead to increased growth among MSEs.

The current study argues that microfinance programs, along with the guidance and resources for engagement provided to micro-entrepreneurs during the group-based lending process, will help develop efficient social and psychological capital. This, in turn, is assumed to help existing MSEs grow, particularly for low-income and informal entrepreneurs who would have limited access to financial, psychological, and social capital. This study suggests that the degree to which microfinance programs can improve social and psychological capital is determined by the microfinance providers' support for the clients and the extent to which they promote social contact among lenders during the skillful training sessions and group-based lending process. Therefore, this research provides answers to the following questions: RQ1, "Does microfinance services improve MSE growth in Pakistan?" And RQ2, "Does social and psychological capital mediate the relationship between microfinance services and MSE growth in Pakistan?"

LITERATURE REVIEW

Theoretical perspective of psychological capital

The theory of psychological capital, presented by Luthans (2002), aims to describe the psychological abilities of an individual that might be evaluated, created, and used for personal and organizational success. Luthans et al. (2008) include a collection of incorporation conditions in order for a construct to be considered a component of psychological capital: it must be supported in theory, provide relevant interventions, and be like a state, meaning it can be built by preparation and deliberate practice.

Although there have been several expeditions into building psychological capital within an organizational context, the factors that can elicit psychological capital from small business owners, especially in the beginning steps of the entrepreneurial phase (Ribeiro et al., 2021), have received relatively little

attention. Given the often stressful and unstable institutional climate that emergent economies face (Piperopoulos et al., 2021), microfinance programs can improve psychological capital and mitigate tension levels and distress resulting from insufficient access to financial capital in situations where small business owners find it a challenging method to mobilize economic resources beyond their immediate friends and family networks. Small entrepreneurs in deprived areas, in particular, may lack the types of resources required to be effective in business and possibly be drawn to entrepreneurship through need rather than opportunity (Farooq, 2020; Aksoy et al., 2019), with few chances for schooling, social ties, or formal jobs in the immediate vicinity (Helmy & Wiwoho, 2020; Anglin et al., 2018). Greater financial stability and opportunities can assist businesses in becoming more competitive in the face of adversity, more ambitious and optimistic about the future, and more confident in their ability to overcome challenges (Akhter, 2018). It is obvious that credit services may also cause fear, as micro and small entrepreneurs are subjected to strict repayment schedules imposed by debt collectors from microfinance institutions (Diaz-Serrano & Sackey, 2018). Diaz-Serrano and Sackey (2018) discover that the credit lender and borrower partnership positively impacts client empowerment. We conclude that while credit demand is strong and there is a supply deficit, lending has a favorable net impact on psychological wealth (Kar, 2016; Newman et al., 2014).

Theoretical perspective of social capital

Microfinance programs, particularly those focused on community loan practices or facilitating involvement, can evoke greater social capital in addition to psychological capital (Nahapiet & Ghoshal, 1998), since they usually encourage social contact between borrowers (Newman et al., 2017). The present and future wealth contained in social networks that are critical to individuals' survival is referred to as "social capital" (Ojong & Simba, 2019). It encompasses the network's structure and the resources that can be obtained as a result of it (Ojong & Simba, 2019). In the networks of entrepreneurs, the social capital gained from collaboration with other economic performers makes it easier to provide facts in a timely manner, facilitating opportunity discovery and exploitation (Ceci et al., 2019).

Nahapiet and Ghoshal (1998) drew two dimensions of social capital that can be encouraged by microfinance programs: structural capital and relational capital. These social capital aspects were studied extensively in the past, and they were demonstrated to promote the exchange of information, resources, and material goods among individuals (Kim & Shim, 2018). The arrangement of interactions among individuals inside a network is referred

to as structural capital (Yan & Guan, 2018). Individuals' network ties make it easier to get timely access to valuable services and intelligence, which are essential for identifying and exploiting entrepreneurial opportunities (Liu et al., 2017). The tools and knowledge made available by a network of small business owners have been shown to significantly improve the growth of existing businesses in both developed and developing markets (Adomako et al., 2018). Relational capital refers to long-term relationships established by a person's encounters with other individuals in their social circle (Han et al., 2019). Though structural capital relates to the existence of social linkages that improve access to services and knowledge as well as the individual's role within the network, human capital refers to the individual's position within the network (AlQershi et al., 2021). Relational capital is concerned with the consistency of people's relationships regarding respect, loyalty, and interpersonal assistance; in other words, to attain valuable network connections (Aaltonen & Turkulainen, 2018). While micro and small business owners may have common roles in a network, the strength of their links with other participants in the network may vary, affecting their capability to approach externally updated information and economic services.

HYPOTHESIS DEVELOPMENT

Microfinance and MSE growth

The microfinance program gives micro and small enterprises opportunities to increase entrepreneurial activities. Some recent empirical evidence suggests that microfinance programs can influence the growth of MSEs. The empirical study conducted by Aladejebi (2019), which collected data from 205 enterprise owners in Lagos, Nigeria, found that the microfinance program led to the expansion of enterprises and generated more employment opportunities. As a result, it had a positive impact on the growth of micro and small businesses. In India, Banerjee et al. (2015) found a positive impact of microfinance on the growth of enterprises. Crépon et al. (2011) collected data from rural small enterprises in Morocco and found the fact that microfinance programs enhanced the activities of micro-enterprises had a positive impact on their growth. Another researcher, Hameed et al. (2020), found an empirically positive relationship between microfinance services and sustainable growth of MSEs in Pakistan. They supported that microfinance programs provide financial and non-financial services like micro-credit, micro-savings, micro-insurance, and training, which keep enterprises moving towards growth and competitive advantage.

Micro-credit refers to the quantity of money that clients (maybe low-income households, MSEs, or entrepreneurs) of microfinance institutions receive as a credit, with repayment required within a term period. Empirically, Kisaka and Mwewa (2014) collected data from 100 small businesses in Kenya and assessed that micro-credit creates opportunities to enhance their operations. Zakaria et al. (2020) assessed the effect of micro-credit on the well-being of poor entrepreneurs in Malaysia and found a positive impact. In the same way, the empirical study of Manaf (2017) showed the positive impact of micro-credit on the growth of small businesses.

Micro-savings is a microfinance service that refers to capital deposited in microfinance institutions under the terms of a contract between the institution and the client. Moreover, microfinance clients were mostly MSEs or poor entrepreneurs who used the deposited amount for future reinvestment (Hameed et al., 2020). Some empirical studies, for instance, Zhiri (2017), collected data from 300 small enterprises within Zaria, Nigeria, and found micro-savings enhanced entrepreneurial activities, substantial growth, and attained competitive advantages. Similarly, in Sabah, Malaysia, Ayub et al. (2020) gathered data from 97 respondents to evaluate the relationship between micro-savings and small business growth and discovered a significant connection.

The microfinance program helps with micro-insurance, which is one of the most important services for small business owners because it involves the purchase of assets with insurance coverage, but many commercial banks overlook this provision (Hameed et al., 2020). Alhassan and Magazi (2020) found that in South Africa, micro-insurance is one of the tools that moderates the consequences of susceptibility to increase welfare. Similarly, Alshebami et al. (2020) collected data from 201 borrowers of microfinance in Yemen and found that micro-insurance improved the level of protection of assets from uncertainties and the probability of the success of micro and small enterprises. Since insurance is one of the precautions against any unforeseen risks, not having insurance raises the danger of using microfinance (Bernard, 2020). Moreover, the study by Hameed et al. (2020) showed that in Pakistan, the provision of insurance coverage for microfinance borrowers improves the likelihood of micro and small enterprise growth. Akotey and Adjasi (2016) found that microfinance programs are a combination of services that consist of micro-insurance to improve the welfare of poor households and that there has been substantial growth for micro and small enterprises.

In microfinance provision, training for entrepreneurs is a structured process by which relevant knowledge is transferred in a manner that improves the participants' social capital worth. As a result, the entrepreneur training program provided a promising future for MSE development (Galvão

et al., 2020). Entrepreneurs gained awareness through a microfinance training program that improved their efficiency and avoided business loss (Dalla Pellegrina et al., 2021), which enhanced competitive advantages and, therefore, had a positive effect on the growth of businesses (Huis et al., 2019). According to Badullahewage (2020), group-based loan training facilities of microfinance programs have a positive impact on small business growth in Sri Lanka. Santoso et al. (2020) provided empirical evidence that training programs had a substantial effect on clients of microfinance for the growth of MSEs. As a result, the findings of previous empirical studies support the following hypothesis:

H1: Micro-credit has a positive relationship with microfinance.
H2: Micro-savings have a positive relationship with microfinance.
H3: Micro-insurance has a positive relationship with microfinance.
H4: Training has a positive relationship with microfinance.
H5: Microfinance has a positive relationship with MSE growth.

Social capital, microfinance, and MSE growth

A microfinance program, particularly involving group-based training or other participative initiatives, would have a positive effect on the growth of existing small enterprises by encouraging clients to build more social capital (Worokinasih & Potipiroon, 2019). Social capital, it is argued, promotes the exchange of information and services between microfinance borrowers (Ul-Hameed et al., 2018), and improvements to micro and small enterprise processes, the discovery of potential markets, and better strategies for risk reduction are also possible outcomes (Sani et al., 2019). Empirical work by Kala et al. (2020) on the suitability of such claims in the microfinance context is supported, and it is discovered that both the amount and efficiency of microfinance borrowers' social relations improve micro and small enterprises' success in terms of growth. Feigenberg et al. (2010) conducted an empirical study in Peru and found that group-based microfinance practices had a positive impact on borrowers' social networks. The research also discovered that weekly microfinance consumer meetings resulted in close social interaction with microfinance clients (Bongomin et al., 2017). Similarly, Mosley (2001) discovered that group-based loan lending affected social capital positively among microfinance clients in Romania, Slovakia, and Russia, leading to the growth of enterprises. The findings of Sanyal's (2015) work show that microfinance programs in India are dependent on group lending, with such programs helping to improve social capital among lenders

and having a positive effect on their business development. On the basis of these arguments, the following hypotheses are made:

H6: Microfinance has a positive relationship with social capital.
H7: Social capital has a positive relationship with MSE growth.

Social capital as a mediator

Newman et al. (2014) found that microfinance services influence MSE growth through social capital. This argument assumes that social capital serves as a mediating factor in the relationship between microfinance services and MSE growth. Theoretically, the role of social capital in mediating the relationship between microfinance services and MSE growth is undeniable (Kamukama & Natamba, 2013). While theoretical arguments support the significance of social capital as a mediating factor in the relationship between microfinance and MSE growth, empirical evidence in the literature is scarce. A relationship analysis that overlooks the mediating mechanism, according to Rosenberg (1968), ends up with facts but an incomplete understanding. In a similar context, Bennet (2000) claimed that research that does not take into account the probability of a mediator effect in the results might miss out on additional reasons for an outcome. In view of the foregoing, the purpose of this research was to investigate the practical role of social capital in the relationship between microfinance services and MSE growth. Therefore, the following hypothesis emerges:

H8: Social capital mediates the relationship between microfinance services and MSE growth in Pakistan.

Psychological capital, microfinance, and MSE growth

A microfinance program can positively impact the growth and success of existing small businesses by cultivating higher levels of psychological capital among clients. Individuals with high psychological capital have been found to have the skills they need to cope with the emotional pressures that come with expanding entrepreneurial activities (Baron et al., 2016), particularly in complex, competitive environments characterized by high risk and instability, such as those confronting small business owners in developing countries (Jin, 2017).

According to previous studies, small entrepreneurs with high-pitched psychological capital are more likely to form close interpersonal bonds with one another in their social networks (Obeng et al., 2021; Digan et al., 2019).

These positive practices can help with small business activities and encourage owners to thrive in environments that other entrepreneurs could find difficult (Margaça et al., 2020). Despite the fact that there is little research into the influences that may contribute to the creation of psychological capital in small business owners, a small number of studies have started to look into its effect on their growth ambitions (Hizam-Hanafiah et al., 2017). For instance, Andri et al. (2019) discovered that psychological capital was favorably linked to the success of small enterprises and that it explained a large portion of the variation in performance, in addition to conventional sources of financial, social, and human capital.

While recent research (such as, Dalla Pellegrina et al., 2021; Huis et al., 2019; Agbeko et al., 2017) has focused on the effect of training on the effectiveness of microfinance programs provided by financial institutions, earlier studies (such as Dutta & Banerjee, 2018; Panda, 2016) have still not looked at whether microfinance, when combined with financial services (credit, savings, and insurance) and non-financial services (training), has a direct effect on small enterprises borrowers' psychological resources. Even so, growing evidence suggests that psychological capital can be built through non-financial services of microfinance like training for small entrepreneurs (Newman et al., 2014) and that a positive enterprise climate will have an effect on the growth of psychological capital and the growth of existing small businesses in an emerging market setting (Ismail et al., 2017). As a result of the above research, the following hypotheses are formed:

H9: Microfinance has a positive relationship with psychological capital.
H10: Psychological capital has a positive relationship with MSE growth.

Psychological capital as a mediator

Entrepreneurial capital is determined by the sum of the entrepreneur's assets (Shaw et al., 2009). Psychological capital plays a mediating role and refers to an entrepreneur's belief that he or she has the ability to get financial and non-financial microfinance services to achieve sustainable development in competitive marketplaces (Newman et al., 2014). The role of psychological capital in mediating the relationship between microfinance services and MSE growth is evident (Nordin et al., 2019). Although theoretical arguments indicate the importance of psychological capital as a mediating component in the relationship between microfinance and MSE growth, empirical evidence is lacking in the literature (Ismail et al., 2017). Friedrich (1982) continued by stating that examining the mediating impact of variables in a relationship explicates the nature of the relationship and the amount to which the

mediating variable influences the link between the two variables. Therefore, this study established the following hypothesis:

H11: Psychological capital mediates the relationship between microfinance services and MSE growth in Pakistan.

Conceptual framework

As previously discussed, it is critical to comprehend the significant impact of microfinance services on MSE growth with the help of social and psychological capital. Therefore, the study's first aim is to identify the significant influence of microfinance services on MSE growth in Pakistan. The second aim is to assess the mediating impact of social and psychological capital on microfinance services and MSE growth in Pakistan. Hence, the conceptual model (see Figure 1) proposed in this research is best suited to MSEs' owners with insufficient resources, skills, and networks, who are driven by their businesses due to a lack of other economic prospects in the emerging markets. Perceiving the importance of financial, social, and psychological capital in MSE growth would contribute to resolving the debate over whether, and under what conditions, microfinance programs succeed.

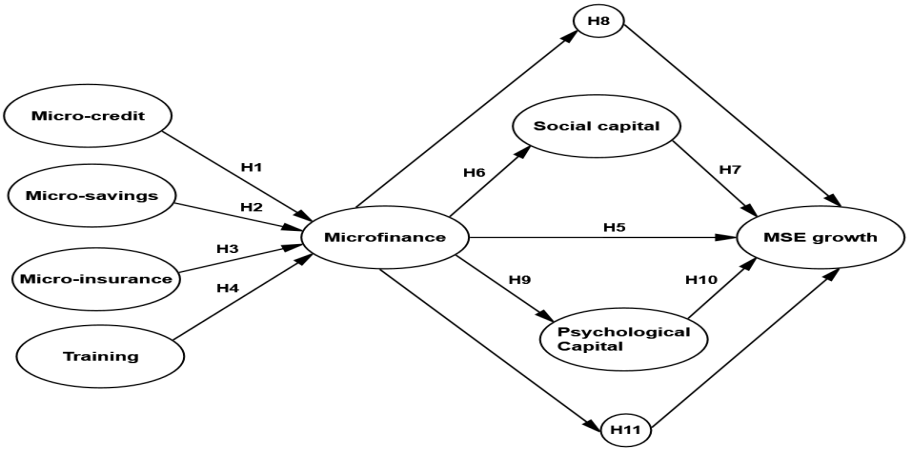

Figure 1. Conceptual framework

METHODOLOGY

Research paradigm and design

Antwi and Hamza (2015) refer to the term "research paradigm" as a methodical discipline's theoretical structure, which is based on hypotheses, theories, aims, assumptions, and techniques that characterize a scientific investigation. For this research, a positivism approach was chosen as the paradigm of the study that stressed quantitative methods. Inferential logic is used in the adoption of the positivism method to define a theoretical confirmation of variables, which is then followed by empirically accepting or rejecting the proposed hypothesized relationships (Kock et al., 2017). Venkatesh et al. (2016) argued that the methods used to lead the research must be on the same path as the main objective. Hence, a quantitative method was carried out in this study to test the hypotheses and achieve the aim of the study. Similarly, Smith and Hasan (2020) relate a quantitative approach to assist scholars in developing statistical proof on the depth of relationships between dependent and independent constructs.

Measurement of variables

Shirali et al. (2018) recommended using the utilized instrument since its reliability and validity had already been investigated. Thus, already tested and examined instruments were employed in this research. For micro-credit, micro-savings, micro-insurance, and training are considered major services provided by microfinance programs. To measure these constructs, the items were adapted from the previous studies of Hameed et al. (2020), Bernard et al. (2016), and Babajide (2012). The mediating effect of social capital between microfinance and MSE growth. The items were adapted from Hameed et al. (2020) and Naala (2016). Psychological capital is considered as a moderator in this study. The items were adapted from Digan et al. (2019). Similarly, for the construct of MSE growth, the items were adapted from Kisaka and Mwewa (2014) and Babajide (2012).

Data collection and sample

According to Etikan and Bala (2017), a population is a set of people who are situated in the particular region in which academicians desire to investigate the wanted information. This research adopts quota sampling, which is the reason the sample size is split by sectors (services and manufacturing). Based on Krejcie and Morgan (1970), the final sample size is 769. While

the data was collected from MSEs of preselected cities in Pakistan (such as Islamabad, Karachi, Abottabad, Lahore, Peshawar, Multan, and Quetta), the questionnaires were given to the MSEs through the enumerators. By using this method, all the questionnaires were distributed. In this case, the MSEs had the chance to fill out the questionnaire on time. According to Zikmund (2003), this approach is known as "drop-off," because the researcher goes to the respondent's locations to drop-off the questionnaires and pick them up after they have finished. The questionnaires were provided in Urdu and English, and MSEs had the choice to fill out any version they liked. 770 respondents from metropolitan cities in Pakistan were contacted in the survey, and the response rate was 64%. After screening the data, only 357 questionnaires appeared to be completed in all respects, so they were initially fed into the computer spread and then imported for further analysis. Meanwhile, the percentages of the missing items were less than 5%, and, therefore, they were replaced through the mean replacement procedure (Kwak & Kim, 2017).

Method of data analysis

Structural equation modeling (SEM) was used to examine the structural and measurement models in a two-stage technique. The interactional influence of the structural and measurement models is reduced in these two stages. The measurement model was investigated in the first step by using confirmatory factor analysis (CFA) to evaluate the convergent validity and causal relationship among adapted items and variables (Byrne, 2013). Moreover, following the recommendation of Hair et al. (2017), the instrument's validity and reliability were also verified for further analysis. The structural model was used to investigate the relationship between the exogenous variable (microfinance services) and the endogenous variables (social capital, psychological capital, and MSE growth) in the second stage.

RESULTS

Sample characteristics

The demographic characteristics are personal and enterprise information of the respondents through survey questionnaires from different cities in Pakistan. A total of 357 respondents' profiles have been classified based on their gender, age, marital status, education, income, business activities, the year the business started, and the number of employees. Demographic analysis was performed using a descriptive statistic to determine the

respondents' backgrounds based on the questions in the questionnaire. Table 1 provides detailed information.

Table 1. Profile of respondents

Variables		Number	Percentage (%)
Gender	Male	239	66.9
	Female	118	33.1
Age	Less than 20	11	3.1
	21-30	56	15.7
	31-40	78	21.9
	41-50	120	33.6
	Above 50	92	25.7
Marital status	Single	107	30.0
	Married	217	60.8
	Widowed	12	3.4
	Divorced	21	5.8
Education	High school or less	204	57.1
	Diploma	77	21.6
	Bachelor degree	47	13.2
	Master	25	7.0
	Doctorate	4	1.1
Income level	Less than Rs 20,000	5	1.4
	Rs 20,001 to 30,000	132	37.0
	Rs 30,001 to 40,000	109	30.5
	Rs 40,001 to 50,000	66	18.5
	Rs 50,001 and above	45	12.6
Business activities	Services	335	93.8
	Manufacturing	18	5.1
	Others	4	1.1
Business started	Before 2018	191	53.5
	2018	92	25.8
	2019	60	16.8
	2020	14	3.9
No. of employees	2 or less	181	50.7
	3	54	15.1
	4	63	17.6
	5 and more	59	16.6

Normality statistics

Skewness and kurtosis were utilized to determine the normalcy of the data in this study. Each construct's skewness and kurtosis have been calculated (see Table 2). As recommended by Qu et al. (2020), the results show that the skewness and kurtosis were both within the permissible range of the ± 3.

Table 2. Descriptive statistics

Constructs	Range	Mean	Std. dev.	Skewness	Kurtosis
Micro-credit	1-5	3.86	0.48	-0.107	-0.482
Micro-savings	1-5	3.58	0.65	0.173	-0.665
Micro-insurance	1-5	3.74	0.52	-0.063	-0.120
Training	1-5	3.61	0.46	0.164	-0.218
Social Capital	1-5	3.76	0.59	-0.071	-0.738
Psychological Capital	1-5	3.91	0.51	-0.023	-0.789
Growth	1-5	3.68	0.44	0.308	-0.047

Reliability

Reliability was utilized to assess the consistency of the items used in the survey. Internal consistency is measured by Cronbach's alpha, which is better than 0.70 and above (Pallant, 2020). All of the constructs utilized in this study have reliabilities of 0.70 to 0.90. Micro-savings (= 0.851), training (= 0.863), social capital (= 0.885), psychological capital (= 0.876), and growth (= 0.893) all have reliabilities of 0.80 or higher. On the other hand, micro-credit (= 0.916) and micro-insurance (= 0.927) have a reliability of 0.90 or higher.

Discriminant validity

To establish discriminant validity, the correlation of all of the constructs used in this study was calculated (see Table 3). According to the discriminant validity results, the correlation between the pairs of variables is less than 0.85, as recommended by Carter (2016).

Table 3. The correlation of the constructs

	1	2	3	4	5	6	7
Micro-credit	1						
Micro-savings	0.466	1					
Micro-insurance	0.304	0.276	1				
Training	0.306	0.214	0.481	1			
Social Capital	0.307	0.213	0.391	0.431	1		
Psychological Capital	0.445	0.240	0.447	0.439	0.688	1	
Growth	0.398	0.386	0.364	0.380	0.397	0.430	1

Confirmatory Factor Analysis (CFA) results

The measurement model was put to the test in this study via CFA validation of variables. If somehow the model was determined to be inaccurate, it was re-specified using Hair et al. (2017) and Byrne's (2013) criteria. Variables were then tested for reliability and validity in the following phases. As a result, the measurement model was put to the test in two stages: (1) determining the factor's unidimensionality, and (2) determining the constructs' reliability and validity. The findings of the numerous fit indices were tested following Mueller and Hancock's (2018) guidelines to see if the CFA findings for the specified variables were acceptable (see Table 4). The specified and assessed fit indices are: chi-square, degrees of freedom (df), relative chi-square (CMIN/df), goodness of fit index (GFI), root mean square error of approximation (RMSEA), adjusted goodness of fit index (AGFI), and comparative fit index (CFI).

Table 4. CFA results

Constructs	Chi-square	df	CMIN/df	GFI	AGFI	CFI	RMSEA
Micro-credit	20.646	4	2.399	0.986	0.966	0.990	0.069
Micro-savings	25.593	4	2.399	0.977	0.946	0.972	0.078
Micro-insurance	14.776	4	2.955	0.987	0.962	0.981	0.074
Training	26.374	3	2.955	0.981	0.956	0.966	0.069
Social Capital	26.092	4	2.010	0.975	0.942	0.975	0.079
Psychological Capital	19.956	4	2.991	0.984	0.952	0.969	0.079
MSE Growth	14.294	5	2.574	0.984	0.954	0.960	0.073

Measurement model testing

The measurement model was assessed after the CFAs for each measure were completed. The measurement model specifies the procedure for loading each measure into a specific variable (Hair et al., 2017). All of the observed variables were used to test the measurement model, such as microfinance services, social capital, psychological capital, and MSE growth. The findings revealed that the entire measurement model was well-fitting, resulting in an RMSEA of 0.038 and chi-square value of 606.108 with 356 degrees of freedom ($p<0.005$). The statistics for the test of fit were GFI= 0.917, AGFI=0.914, CFI =0.949 and CMIN/df = 1.703. Finally, the confirmatory factor analysis demonstrated that the measurement model is effective (see Figure 2).

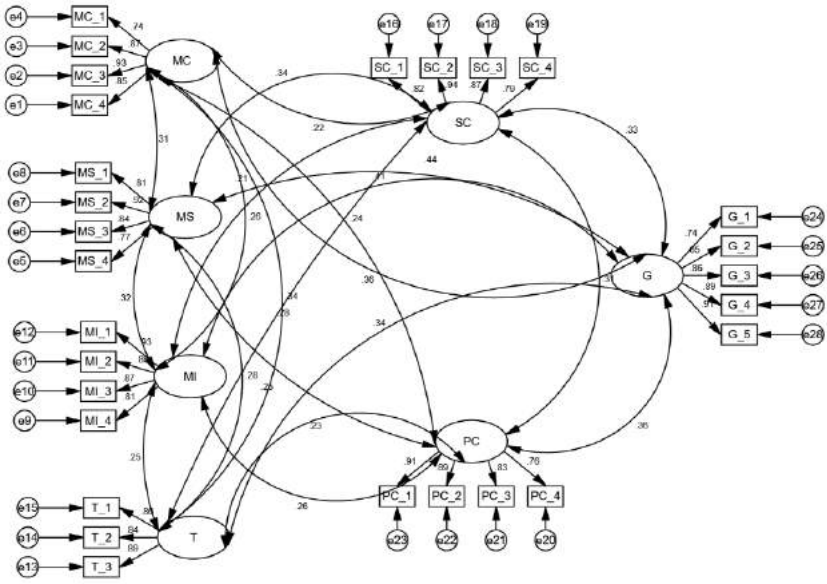

Figure 2. Measurement model

Note: MC (Micro-credit), MS (Micro-savings), MI (Micro-insurance), T (Training), SC (Social Capital), PC (Psychological Capital), G (Growth).

Reliability and validity of the instrument

After performing the CFAs for each variable, the instrument's reliability and validity were assessed (Hair et al., 2017). Average variance extracted (AVE), composite reliability (CR), and Cronbach alpha coefficients were used to examine the reliability and validity. The variables' reliability was also assessed by looking at the CFA and Cronbach alpha values. Cronbach alpha values of

less than 0.50 are considered unacceptable, values between 0.50 and 0.60 are considered low yet acceptable, and values greater than 0.70 are regarded as a good fit (Kline, 2005). All of the alpha values of the observed variables were determined to be good matches according to the prior acceptable values. The parameters of AVE and CR were calculated using Fornell and Larcker's (1981) formula. According to Byrne (2013), the AVE values should be 0.50 or above , and the CR values should be 0.60 or above. As a result of this study, the data results were satisfactory (see Table 5).

Table 5. Measurement model evaluation

Micro-credit					
Items	**Measurement path**	**Factor loading**	**Cronbach's alpha (α)**	**CR**	**AVE**
			0.918	0.912	0.723
MC_1	The interest rate on the loan is affordable.	0.74			
MC_2	The amount of the loan is sufficient.	0.87			
MC_3	The repayment time for the loan is enough.	0.93			
MC_4	The method for securing a loan is simple.	0.85			
Micro-savings					
Items	**Measurement path**	**Factor loading**	**Cronbach's alpha (α)**	**CR**	**AVE**
			0.855	0.903	0.700
MS_1	Savings interest is reasonable.	0.81			
MS_2	The saving products are appealing.	0.92			
MS_3	The methods are simple.	0.84			
MS_4	Withdrawing money from your savings account is simple.	0.77			
Micro-insurance					
Items	**Measurement path**	**Factor loading**	**Cronbach's alpha (α)**	**CR**	**AVE**
			0.932	0.923	0.750
MI_1	Benefits from insurance are effective.	0.93			
MI_2	The variety of policies available is satisfactory.	0.85			
MI_3	The cost of insurance coverage is reasonable.	0.87			
MI_4	Insurance claims are processed quickly.	0.81			

Training					
Items	**Measurement path**	**Factor loading**	**Cronbach's alpha (α)**	**CR**	**AVE**
			0.866	0.898	0.746
T_1	Training programs are beneficial to the operation of my business.	0.86			
T_2	The frequency with which skills development programs are offered is adequate.	0.84			
T_3	Training programs can help me advance in my career.	0.89			
Social capital					
Items	**Measurement path**	**Factor loading**	**Cronbach's alpha (α)**	**CR**	**AVE**
			0.891	0.917	0.734
SC_1	Interactions with my social contacts assist me in improving our business performance.	0.82			
SC_2	My training participation has aided in the development of a strong network.	0.94			
SC_3	My relationships with potential and current customers (or suppliers) assist me in growing and improving our business.	0.87			
SC_4	My own business's social contacts assist me in growing and improving my business.	0.79			
Psychological capital					
Items	**Measurement path**	**Factor loading**	**Cronbach's alpha (α)**	**CR**	**AVE**
			0.882	0.912	0.722
PC_1	I am confident in my ability to achieve my business objectives.	0.91			
PC_2	I am confident in my ability to work under pressure and in difficult situations.	0.89			
PC_3	In my opinion, all business challenges, will always have a positive aspect to them.	0.83			
PC_4	"I may fall but I am able to rapidly pull through" when faced with business disappointment.	0.76			

Business growth					
Items	**Measurement path**	**Factor loading**	**Cronbach's alpha (α)**	**CR**	**AVE**
			0.898	0.929	0.726
G_1	My business will benefit from the entrepreneurship training.	0.74			
G_2	My assets have increased in value as a result of the loan.	0.85			
G_3	In my company, new employment are created.	0.86			
G_4	My business's production has increased due to loan services.	0.89			
G_5	Services have aided in the growth of my business earnings.	0.91			

Note: CR = Composite Reliability; AVE = Average Variance Extraction.

Structural model

Once all constructs have been validated and an acceptable fit has been achieved in the measurement model (stage one), a structural model can be tested and obtained as the second and most important stage of the research (Byrne, 2013). In this study, the exogenous variables (microfinance services, micro-credit, micro-savings, micro-insurance, and training) and endogenous variables (social capital, psychological capital, and MSE growth) are illustrated in Figure 3. This figure illustrates the standardized estimates as well as the values of model fit. The findings displayed are that the structure model was well-fitting, resulting in a RMSEA of 0.038 and a chi-square value of 674.309 with 356 degrees of freedom ($p<0.001$), GFI = 0.915, CFI = 0.954, AGFI = 0.900 and CMIN/df = 1.894. In conclusion, the outcomes indicated that the structural model is good.

Using AMOS 21.0, the CFA and two-step SEM approach was used in this study to investigate the hypothesized associations, as recommended by Hair et al. (2017). The hypotheses H1, H2, H3, H4, H5, H6, H7, H9, and H10 were statistically significant in testing the hypothesized relationship, as shown in Table 6. These hypotheses all had significant standardized estimates. As a result, these hypotheses were supported.

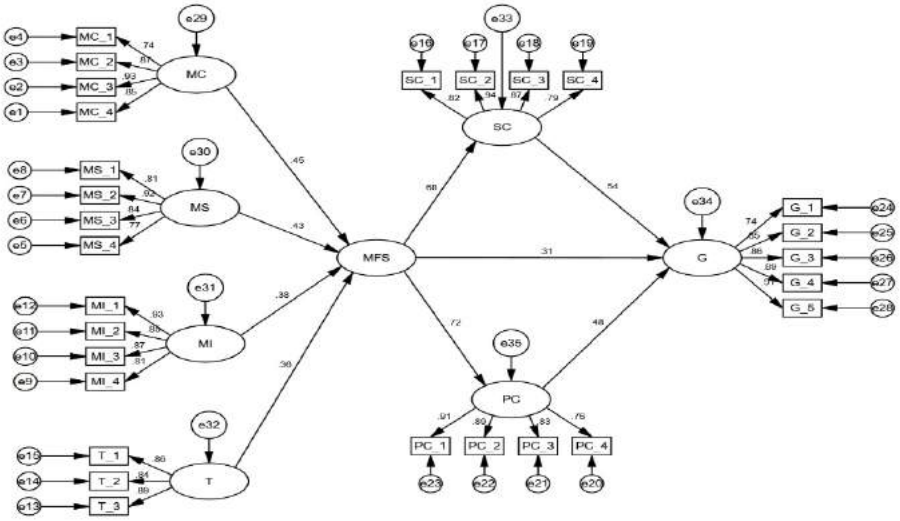

Figure 3. Structural model

Table 6. Testing hypotheses using standardized estimates

Hypothesized path	Standardized estimate	Z-value	P-value	Result
H1: MC-->MFS	0.45	5.041	***	Significant
H2: MS-->MFS	0.43	4.542	***	Significant
H3: MI-->MFS	0.38	3.981	***	Significant
H4: T-->MFS	0.36	3.824	***	Significant
H5: MFS-->G	0.31	3.244	***	Significant
H6: MFS-->SC	0.68	7.127	***	Significant
H7: SC-->G	0.54	5.638	***	Significant
H9: MFS-->PC	0.72	7.759	***	Significant
H10: PC-->G	0.48	5.163	.003	Significant

The mediation analysis

Hypothesis 8 (H8) and hypothesis 11 (H11) tested whether social capital and psychological capital mediate the association between microfinance and MSE growth. This study used the Awang et al. (2015) identified technique to measure the mediation effect. According to Awang et al. (2015), the indirect effect between the constructs is greater than the direct effect. Once the direct effect is also significant, it is called partial mediation. In this study, the indirect effect of social capital was 0.37 (0.68 x 0.54 = 0.37), while the direct

effect was 0.31, and the indirect effect of psychological capital was 0.34 (0.72 x 0.48 = 0.34), while the direct effect was 0.31. Hence, social capital and psychological capital partially mediate the relationship between microfinance and MSE growth in Pakistan.

Resampling, often known as "bootstrapping," is another way to deal with the sampling distribution of the constructs. The properties of the sampling distribution can be derived without assuming normality in this method, as it was formed from the estimations of constructions calculated from thousands of newly created samples.

The bootstrapping strategy for obtaining the mediating effect performs exceptionally well in methodological evaluations (Demming et al., 2017). According to Awang et al. (2015), bootstrapping was consistently the most influential. According to Demming et al. (2017), today's researchers feel the bootstrap is the best method for determining the mediation effect. As a result of this study, hypotheses 8 (H8) and 11 (H11) were accepted (see Table 7), when the bootstrapping technique indicated partial mediation had occurred.

Table 7. Bootstrapping results

	Effect results	**P-value**
Social capital		
Indirect effect	0.379	0.000 (Significant)
Direct effect	0.314	0.000 (Significant)
Psychological capital		
Indirect effect	0.348	0.000 (Significant)
Direct Effect	0.321	0.000 (Significant)

RESEARCH FINDINGS AND DISCUSSION

According to the findings of the current study, microfinance services (micro-credit, micro-savings, micro-insurance, and training) have a substantial positive relationship with MSE growth. The association between micro-credit, micro-savings, micro-insurance, and training and microfinance institution program (H1, H2, H3, and H4) yielded significant t-values and positive β-value (see Table 5). These estimates show that when all of these services improve, the value of microfinance programs to MSE growth will rise. The findings were in line with previous research, such as the study of Kisaka and Mwewa (2014), which discovered that micro-credit, micro-insurance, and micro-savings have a significant impact on microfinance programs for small enterprises to attain the substantial growth in emerging markets. Furthermore, according to

Dutta and Banerjee (2018), many microfinance borrowers lack specific skills, making it difficult for them to make good use of such program. Microfinance programs have resulted in more opportunities for skilled entrepreneurial activity, which has had a favorable impact on microfinance performance (Hameed et al., 2020). As a result, Ekpe et al. (2015) discovered that training has a favorable impact on microfinance clients.

The study's findings revealed a strong relationship between microfinance services and MSE growth (H5) in Pakistan. This demonstrated that microfinance has a positive impact on MSE growth. According to research done in the Philippines by Garrity and Martin (2018), microfinance helped business growth and create more job prospects. As a result, it left a positive influence on the performance of MSEs. In the same vein, Banerjee et al. (2015) discovered that microfinance services positively impact business growth in India.

The hypotheses H6 and H7 in this study investigated the direct relationship between social capital, microfinance services and MSE growth, and discovered a substantial association. The hypothesis H8, on the other hand, looked at the role of social capital in mediating the relationship between microfinance services and MSE growth. According to the findings, social capital in Pakistan partially mediates the relationship between microfinance services and MSE growth. The empirical evidence from Hameed et al. (2020) discovered that microfinance clients and members of group borrowers increased social capital, which had a favorable influence on small business growth. Kamukama and Natamba (2013) discovered that social capital played a favorable mediating role between microfinance services and growth of businesses. They also discovered that microfinance group-based lending increased customer social capital and had a positive impact on the growth of micro and small enterprises. Similarly, in Newman et al. (2014) study, social capital was used as a mediator between microfinance and the growth of existing small businesses.

Similarly, significant t-values and positive β-value were identified in the direct relationship between psychological capital (H9 and H10), microfinance services, and MSE growth. The hypothesis H11, on the other hand, looked into the role of psychological capital in mediating the relationship between microfinance services and MSE growth. According to the findings, psychological capital in Pakistan partially mediates the relationship between microfinance services and MSE growth. Microfinance services may encourage the development of psychological capital in businesses and the growth goals of micro and small businesses (Nordin et al., 2019). Bockorny and Youssef-Morgan (2019) discovered that psychological capital was positively connected to MSE growth and that it explained a considerable portion of the variance in

performance beyond traditional types of financial capital. According to Haji et al. (2020), psychological capital has a favorable impact on MSE growth.

CONCLUSION

The current study focuses on the role of microfinance services in the growth of MSEs in Pakistan. In addition, the study looked into the impact of social and psychological capital on the growth of micro and small enterprises. For this quantitative study, a survey tool was used to collect data from MSE clients of microfinance institutions. It was discovered that microfinance services play a key role in assisting MSE growth. Microfinance services, including micro-credit, micro-savings, micro-insurance, and training, play an important role in the growth of micro and small enterprises. These services make it easier for MSEs to operate, which results in increased revenue, competitive advantages, and growth in emerging markets. Furthermore, social and psychological capital have a positive impact on MSEs' long-term growth. Microfinance services improve the positive contribution of social and psychological capital to micro and small enterprises, resulting in increased growth.

From a theoretical perspective, this research contributed to the existing literature in the domains of entrepreneurial finance, social capital, psychological capital, and micro and small enterprises. Previous empirical research has focused on microfinance programs' interferences on credit repayment agendas for poor communities and reducing poverty, but none has examined how social and psychological capital connect microfinance services and MSE growth. Therefore, our findings show that social and psychological capital might partially mediate the relationship between microfinance services and MSE growth, which is unique in the literature on the issue. This research implies that social and psychological capital are important for MSE growth and sustainability in Pakistan. As a result of the findings, researchers are now debating the impact of social and psychological capital on micro and small businesses. Moreover, the study leads researchers to investigate numerous social and psychological capital components, as well as how these are managed to promote sustainable growth in the sector.

Furthermore, the consequences have shed light on the financial capital, social capital, and psychological capital that need to be improved in the development and expansion of micro and small businesses. This is critical in encouraging entrepreneurial practices and boosting MSE growth in Pakistan's most vulnerable low-income households. Policymakers in Pakistan can apply the research results to reduce long-term economic vulnerability among low-income households. Also, this research will help microfinance providers

achieve their ultimate goal of enhancing MSE growth. Additionally, this study has emphasized the importance of major services delivered by microfinance providers that can help MSEs.

We can certainly conclude that the empirical evidence reported in this research is critical for the Small and Medium Enterprise Development Authority (SMEDA) and the State Bank of Pakistan (SBP) in their pursuit of MSE sustainability. The SMEDA and the SBP both have a good understanding of what makes microfinance services better. In addition to the services provided by microfinance institutions, the Pakistani government should also help micro and small enterprises through various loan initiatives. As a result, measures to boost the growth of micro and small enterprises will always be supported and raised to a significant level.

Due to individual and environmental factors, the study had several limitations. These constraints give plenty of room for future research and academic endeavors. First, the sample size is a potential constraint of the study, which may have been increased further to emphasize the importance of some well-crafted research questions. Because of COVID-19 travel restrictions, the study only included micro and small enterprises in Pakistan's urban areas; nonetheless, it would have been preferable if more rural MSEs had participated. Second, the results' generality is limited in its relevance to other sectors. Because the behaviors of the services and manufacturing sectors differ from those of other sectors, studies using different sectors may give different conclusions than those presented in this study. Third, the study's findings were based on cross-sectional data derived from self-completed survey questionnaires, making it impossible to draw hard conclusions about causality. It is not possible to rule out the possibility that causation would act in the opposite direction of what was expected. As a result, a sequential longitudinal study is required. Finally, in order to generalize the findings of this study, more research in diverse geographic areas and sectors is required. It is also interesting to look at the impact of microfinance services on other major outcome variables like MSEs' performance or new venture creation.

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Abstrakt

CEL: *W dobie globalizacji i konkurencji na prężnie rozwijającym się rynku, mikro i małe przedsiębiorstwa (MSE) poszukują zrównoważonego rozwoju poprzez konsumpcję różnorodnych zasobów. Wcześniejsze badania wykazały, że usługi finansowe i mikrofinansowania są podstawowymi czynnikami przetrwania MŚP. Jednak nadal brakuje charakterystycznej roli innych usług mikrofinansowych, takich jak mikrokredyty, mikrooszczędności, mikroubezpieczenia, szkolenia i sieci społecznościowe, w osiąganiu znacznego wzrostu sektora MSE, co wyjaśnia, dlaczego MSE tworzą tak mały wkład w gospodarkę Pakistanu. Dlatego głównym celem badania jest rozważenie wpływu usług mikrofinansowych na rozwój MSE w Pakistanie, ponieważ MSE są najbardziej wrażliwą grupą w kraju i na całym świecie. Ponadto badanie to określiło*

również pośredniczącą rolę kapitału społecznego i psychologicznego w zwiększaniu produktywności usług mikrofinansowych dla MŚP. ***METODYKA:*** *Skontaktowano się z 770 respondentami z miast metropolitalnych w Pakistanie, a odsetek odpowiedzi wyniósł 64%. Po przejrzeniu danych tylko 357 kwestionariuszy zostało wypełnionych pod każdym względem, więc zostały one początkowo wprowadzone do programu komputerowego, a następnie zaimportowane do dalszej analizy. Ustrukturyzowane kwestionariusze posłużyły do zebrania danych od 357 mikro i małych przedsiębiorstw działających na rozwijającym się rynku Pakistanu. Wyprowadzone hipotezy zweryfikowano za pomocą modelowania równań strukturalnych (SEM) przy użyciu AMOS 21.* ***WYNIKI:*** *Wyniki badania wykazały, że usługi mikrofinansowe odgrywają zasadniczą rolę w promowaniu rozwoju MSE. Usługi instytucji mikrofinansowych, takie jak mikrokredyty, mikrooszczędności, mikroubezpieczenia i szkolenia, odgrywają ważną rolę w rozwoju MŚP. Ponadto kapitał społeczny i psychologiczny są kluczowymi czynnikami, które częściowo pośredniczą w związku między usługami mikrofinansowymi a wzrostem MSE w Pakistanie. Ograniczeniem tego badania jest dostosowanie projektu przekrojowego do zbierania danych. Badania podłużne w różnych ramach czasowych mogą dawać zróżnicowane wyniki.* ***IMPLIKACJE:*** *Badanie sprawia wrażenie, że instytucje mikrofinansowe, praktycy i inni decydenci powinni poszerzyć swój zasięg, aby oferować usługi mikrofinansowe i wspierać pożyczki lub szkolenia grupowe, aby zmaksymalizować swój kapitał społeczny i psychologiczny, dzięki któremu MŚP mogą w stanie osiągnąć znaczny wzrost.* ***ORYGINALNOŚĆ/WARTOŚĆ:*** *To badanie empiryczne wnosi wkład do literatury na temat usług mikrofinansowych i wzrostu MSE, koncentrując się na pośredniczącym efekcie kapitału społecznego i psychologicznego oraz zapewniając podstawę do dalszych badań.*

Słowa kluczowe: *usługi mikrofinansowe, kapitał społeczny, kapitał psychologiczny, mikro i małe przedsiębiorstwa, modelowanie równań strukturalnych.*

Biographical notes

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Conflicts of interest

The authors declare no conflict of interest.

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The impact of common success factors on overfunding in reward-based crowdfunding: An explorative study and avenues for future research

Felix Pinkow[1]

Abstract

PURPOSE: *While there is abundant literature on the key determinants of reward-based crowdfunding success, little research is dedicated to crowdfunding projects that are not only successful but receive significantly more funds than initially targeted through the defined funding goal. This study seeks to shed light on this vastly neglected topic in crowdfunding research.* ***METHODOLOGY:*** *Drawing on a rich dataset of 338 reward-based crowdfunding projects, this study applied a two-step statistical analysis. First, regression analyses to determine relevant crowdfunding success factors were conducted in order to corroborate extant literature and to highlight that the data properly reflects the already identified key findings on crowdfunding success. In a second step, the very same factors were investigated for the case of overfunded projects, utilizing logistic regression analyses and a Blinder-Oaxaca Decomposition.* ***FINDINGS:*** *Although this study confirmed the findings of previous research considering the factors that increase the success probability of crowdfunding projects, the very same factors turned out to not explain the emergence of project overfunding. For instance, while project founders can provide updates, a higher number of different rewards, or utilize social media pages to increase the likelihood for success, these factors do not contribute to explain the phenomenon of project overfunding.* ***IMPLICATIONS:*** *The results of this study emphasize that in order to understand overfunding of crowdfunding projects, future research must go beyond the basic crowdfunding success factors. Building on the notion of the Two-Factor Theory, the findings suggest that the factors contributing to success can be considered hygiene factors that are required to succeed in the first place. However, these factors do not motivate the crowd to provide further funding to an already successful project. Hence the motivating factors remain yet unobserved in extant literature. In practice, this means that project teams achieving their funding goal cannot rely on the same factors that were helpful to succeed to encourage*

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further funding from the crowd. The differentiation of hygiene and motivating factors for overfunding in reward-based crowdfunding offers rich opportunities for future research. More subjective factors, such as the individual perception of crowd members towards crowdfunding projects, are suggested to play an important role for the occurrence of project overfunding. ***ORIGINALITY/VALUE:*** *By investigating project overfunding, this study addresses the research gap concerning the factors contributing to the emergence of project overfunding. There is little evidence on the characteristics of overfunded crowdfunding projects, and thus this study provides essential theoretical and empirical groundwork for future research to build upon this study's results.*
Keywords: *reward-based crowdfunding, overfunding, business venturing, entrepreneurial finance, success factors, two-factor theory.*

INTRODUCTION

Crowdfunding has emerged as an attractive approach for entrepreneurs to acquire funding for their business idea, which is oftentimes a serious challenge for new ventures (Bagheri et al., 2019; Belleflamme et al., 2014; Mollick, 2014). In particular, reward-based crowdfunding, compared to other types of crowdfunding, such as equity- or lending-based, differs from traditional financing methods like bank loans and venture capital in that the raised funds must not be paid back and the project founders do not lose ownership (Bruton et al., 2015). Nonetheless, the basic idea of requesting funds remains the same: the founders must pitch their idea to a crowd in the same way they had to pitch it to professional investors (Kunz et al., 2017). The potential supporters (also backers or funders) evaluate the pitch and provide financial resources, expecting some kind of non-monetary reward for their support (Belleflamme et al., 2013). From a broader perspective, crowdfunding is part of the concept of crowdsourcing (Belleflamme et al., 2014). The term of crowdsourcing was introduced in 2006 in an article written by Howe (2006) and is described as "taking a function once performed by employees and outsourcing it to an undefined (and generally large) network of people in the form of an open call." In this context, reward-based crowdfunding is defined as an open call to individuals to provide "financial resources either in the form of donation or in exchange for the future product or some form of reward to support initiatives for specific purposes" (Belleflamme et al., 2014, p. 588).

Succeeding with a crowdfunding campaign entails great opportunities for entrepreneurs. As reward-based crowdfunding projects typically offer rewards in the form of pre-orders of the final product to be developed upon crowdfunding success, the crowdfunding campaign is often the first point of contact between the project team and early customers (Block, Colombo, et al., 2018). Thus, the funding period can ultimately be seen as a possible

indicator of future demand (Belleflamme et al., 2015). Attracting a sufficiently large crowd can contribute to the successful commercialization of the crowdfunded idea, or increase the product quality (Butticè & Noonan, 2020). Successful crowdfunding campaigns can also serve as a positive signal for future funding rounds (Roma et al., 2018; Thies et al., 2018; Vanacker et al., 2019), such that crowdfunding success facilitates acquiring funds in the long term. Moreover, competencies in acquiring external funding are positively related to venture growth (Brinckmann et al., 2011), and hence the experience gained through successful projects can ultimately contribute to the long-term survival of new ventures.

While, among successful reward-based crowdfunding projects, a majority succeeds by small margins above the initially defined funding goal, few projects are overfunded and exceed their funding goal by large margins (Mollick, 2014). These overfunded projects offer even stronger signals against the backdrop of the aforementioned benefits – achieving funds significantly above the initial funding goal provides additional positive signals for customer demand and hence future funding rounds. As such, overfunding can provide project founders with a competitive edge in achieving and maintaining sustainable growth beyond the crowdfunding campaign. Yet, there is surprisingly little empirical evidence on the determinants of overfunding, although the funding amounts of overfunded projects often are comparable to the funding provided by venture capitalists.

Consequentially, the resulting research question is as follows: Which factors contribute to overfunding of reward-based crowdfunding projects? By addressing this research question, this paper informs crowdfunding practitioners whether there are instruments that can be used to encourage the crowd further to provide additional funds once a reward-based crowdfunding project has reached its initial funding goal. Hence, it provides guidance for project teams that reached the funding goal prior to the end of their crowdfunding project. From a theoretical perspective, this paper contributes a theoretical framing and groundwork for subsequent research on overfunding in reward-based crowdfunding.

THEORETICAL BACKGROUND

A signaling theory perspective on reward-based crowdfunding

Keeping in mind that overfunded projects are a subset of successful crowdfunding projects, it is essential to initially determine which factors enable crowdfunding success, as a necessary requirement for subsequent

overfunding. Drawing on Spence's (1973, 2002) idea of the signaling theory, recent research adopted this notion in a crowdfunding setting under the assumption of information asymmetries between the project founders and the crowd (Davies & Giovannetti, 2018; Kim et al., 2016; Pinkow & Emmerich, 2021; Short et al., 2017; Vismara, 2018). In a crowdfunding setting, the project team communicates information about the quality of their idea and the abilities of the founders to the crowd, who interprets this information and sends feedback to the project team (the signaller) (Connelly et al., 2011). The feedback in this context is the decision to support a project by providing financial resources. Entrepreneurs aiming to finance their idea publicly through crowdfunding are especially challenged to provide credible claims, or signals, to the crowd as to convince potential supporters why their project idea is worth supporting (Kim et al., 2016).

Hereby, the crowd does not evaluate signals individually but interprets a portfolio of signals they perceive (Courtney et al., 2017). The signals sent by the signaller, the project founders, thereby address specific information surrounding a more general issue. As such, crowdfunding research is usually dedicated to specific aspects of crowdfunding. In particular, recent literature can be categorized into three overarching themes, referred to as three sets of signals aiming at communicating more general information. First, in Mollick's (2014) seminal study on crowdfunding, he argues that project founders signal a basic preparedness through providing updates, pictures and videos on the crowdfunding platform, which are subsequently widely adopted by further studies as basic factors influencing project success (e.g. Fernandez-Blanco et al., 2020; Kunz et al., 2017; Wang et al., 2018; Zhou et al., 2018). The basic quality indicators resemble the utilization of the standard features and tools that crowdfunding platforms provide to project founders. A second major theme concerns the network related to a crowdfunding project, including the role of both social and personal networks (Colombo et al., 2015; Datta et al., 2018; Hekman & Brussee, 2013). The network-related theme relates to the potential crowd size and hence determines which factors contribute to attract a sufficiently large crowd to provide to a project. As such, the network theme is a fundamental precursor to crowdfunding success, as successful projects require a sufficiently large crowd to be aware of the project in order to engage in decision-making whether to support the project, or not. From a signaling perspective, project teams that are able to demonstrate that they are embedded in a sufficiently large network may convince the crowd that there is sufficient support for their project and the availability of a large reach concerning the project founders' communication. The third theme is related to trust-building measures, related to offer claims on the founders' abilities (Zheng et al., 2016), such as a convincing and credible project

description (Mollick, 2014; Zhou et al., 2018) or to display professionalism (Steigenberger, 2017). The trust theme thus suggests that project founders must offer sufficient claims concerning their credibility, and to demonstrate that the project goal is feasible. These three blocks, aiming at signaling basic preparedness, creating trust, and having access to a sufficiently large network, will be used in the following sections to indicate the relation to project success, and subsequently to project overfunding.

Crowdfunding success factors and project overfunding

Basic crowdfunding success factors

Previous research has mainly addressed factors contributing to the general success of crowdfunding projects. As such, the number of updates during the funding period provided by the project founders, as well as the availability of a pitch video can be considered basic quality signals (Cordova et al., 2015; Mollick, 2014). Most research confirms the positive effect of the availability of videos and pictures on either the raised amount of capital (Evers et al., 2012) or the probability of success (Koch & Siering, 2015; Mollick, 2014). This might especially facilitate the success of consumer goods projects, which can easily communicate the value proposition through text and video (Agrawal et al., 2014). The number of updates provided by the project founders as well as the number of comments on the project page play significant roles in explaining the probability of success (Beier & Wagner, 2015; Evers et al., 2012; Joenssen et al., 2014; Koch & Siering, 2015; Xiao et al., 2014).

The funding goal itself has been shown to be a crucial determinant of project success, generally having a negative effect on the success rate, that is, the higher the targeted funds, the lower the probability to succeed (Beier & Wagner, 2015; Cordova et al., 2015; Koch & Siering, 2015; Mollick, 2014) and the less money is raised (Evers et al., 2012). Moreover, the level of the funding goal may even moderate the impact of the basic success factors on project success (Pinkow & Emmerich, 2021), demonstrating the central role of the funding goal. The above-mentioned factors relate to instruments made available by the crowdfunding platforms, and are considered basic quality indicators, following the argumentation by Cordova et al. (2015) and Mollick (2014).

Network-related factors for crowdfunding success

Crowdfunding is conceptually linked to the exchange of resources – financial support in return for a specific reward. However, several findings suggest

that crowdfunding should be viewed from a broader perspective. Especially the aspect of a crowdfunding 'community' is receiving increasing attention. Being part of a community or network after contributing to a project should not only be viewed as a result, but also as a preceding factor that motivates individuals to provide financial support (Gerber et al., 2012; Gerber & Hui, 2013; Schwienbacher & Larralde, 2010; Zvilichovsky et al., 2013). Moreover, it has been shown that higher activity on social media platforms is positively correlated with the number of supporters (Lu et al., 2014). Considering social media as an example of a network, a major aspect is the possibility to facilitate communication between potential customers (e.g. funders) and ventures (e.g. crowdfunding projects) and provides an opportunity to react to concerns about a product (Edosomwan et al., 2011). The use of social media can ultimately increase general entrepreneurial performance (Kadam & Ayarekar, 2014). Accordingly, the availability of social networks and the network size are factors that help to succeed in crowdfunding (Beier & Wagner, 2015; Mollick, 2014; Thies et al., 2014).

An additional factor relating to networks is the number of team members in the founding team, which increases the success probability with an increasing number of founders (Beier & Wagner, 2015; Evers et al., 2012). Furthermore, founders who are active in the crowdfunding community by supporting other crowdfunding projects significantly increase the chance of succeeding with one's own project (Davies & Giovannetti, 2018; Koch & Siering, 2015; Zvilichovsky et al., 2013). These results contribute to the idea that the aspect of being a part of a community from the funders' perspectives and using community tools from the founders' perspectives contributes to the success of a crowdfunding project.

Trust-related factors for crowdfunding success

The concept of 'trust' comprises a myriad of different aspects and definitions. The definition used in this study is considering trust as competence, benevolence, and integrity (McKnight & Chervany, 2001). Hereby, especially in the context of online transactions, credibility is one key factor for individuals to trust a transaction (Lowry et al., 2014). Inferring from these considerations, the financial support of a crowdfunding project corresponds to an online transaction. The likelihood that this online transaction will be conducted might therefore be increased if the supporters feel they can trust the project founders being competent to implement their idea, will not have bad intentions regarding the usage of the raised money, and believe that the founders are honest and credible. Following this argumentation, a detailed

project description supports creating trust, such as the description of how the acquired funding will be used or providing a detailed biography of the project founders. A higher number of words used to describe a project can increase project success (Zhou et al., 2018), and subjective aspects, such as using precise language and an interactive style, further increase the success probability (Parhankangas & Renko, 2017). Moreover, providing pictures of team members positively impacts the perceived trustworthiness in the context of online transactions (Steinbrück et al., 2002).

Overfunding of crowdfunding projects

Crowdfunding projects are subject to specific funding patterns. First, by comparing successful and unsuccessful crowdfunding projects, either projects fail to reach the goal by large amounts, or the funding is acquired with small amounts above the goal (Cordova et al., 2015; Mollick, 2014). In this context, the research question of this study gains additional relevance – most successful projects only receive the funds they requested. However, some projects deviate from this pattern and exceed their initial target by far. The arising question is what the differentiating features of these projects are.

There are few studies directly addressing the topic of project overfunding. The study of Cordova et al. (2015) suggests that despite the insignificance of the number of updates and comments for success in their study, successful projects with higher success rates still demonstrate an increasing number of these factors. Moreover, the authors point out that a higher funding goal lowers the overfunding rate and is the most important driver for overfunding (Cordova et al., 2015). A subsequent study by Koch (2016) picks up the results of Cordova et al. (2015) and provides an analysis on overfunding. Firstly, Koch (2016) criticizes the study of Cordova et al. (2015) for methodological weaknesses and therefore suggests adjusting the research concerning overfunding. Koch (2016) reveals that most factors mentioned in the previous section are also highly significant for overfunding, that is the funding goal, pictures, videos, updates, comments, friends, number of supported projects, number of previously created projects, duration of the funding period, and also the number of words used to describe the project. Koch (2016) only considers successful projects and uses the degree of success as the dependent variable. More specifically, because of the aforementioned funding patterns, the log transformation is used to smooth the skewness of the degree of success (Koch, 2016). However, as mentioned above, successful projects mainly reach their goals by small amounts, and hence the distribution of the degree of success is typically strongly right-skewed. By using the log transformation of the degree of success, it changes the very nature of the

phenomenon of overfunded projects, namely the specific funding pattern. This methodology implies a different distribution of the degree of success in order to fit a linear regression model, as in the case of Koch's (2016) study. Moreover, Koch (2016, p. 10) mentions that by using the original distribution of the degree of success, there are "surprisingly few significances."

In a further study, Adamska-Mieruszewska et al. (2019) apply a logit regression to explain project overfunding. The authors (Adamska-Mieruszewska et al., 2019) determine the level of overfunding at 110% of the initial funding goal, based on Mollick's (2014) finding that most crowdfunding campaigns only exceed their funding goal by very small amounts. Their results indicate that several factors impact overfunding probability, such as the funding goal itself, the number of comments, the number of updates, the number of supporters and the number of previously created crowdfunding projects by the founders. However, some crucial factors like social networks or the control of the project category are not included in their statistical analysis, and the overfunding threshold of 110% is set rather arbitrarily, such that enhancing the analysis with additional thresholds can provide additional insights concerning different levels of overfunding. Moreover, the number of comments is most likely strongly correlated with the number of backers, and both variables are subject to potential endogeneity.

This study will therefore enhance and complement the previously mentioned approaches to examine the phenomenon of overfunding and contribute to the understanding of this vastly unexplored topic in crowdfunding research. Since research on overfunding is scarce, this study pursues to apply an exploratory approach to project overfunding. Nonetheless, utilizing theoretical considerations stemming from Herzberg's (1968) Two-Factor Theory on success factors and overfunding factors serve to derive a central hypothesis. The Two-Factor Theory (Herzberg, 1968) was originally developed to explain employee motivation. The fundamental notion of the theory states that the factors that help to avoid dissatisfaction are not the same factors that lead to satisfaction. In other words, simply increasing or improving the factors that help to avoid dissatisfaction (hygiene factors) does not necessarily lead to an increase in satisfaction (motivators) (Herzberg, 1968). As this underlying notion is rather general, Herzberg's (1968) Two-Factor Theory is used by researchers in fields different from the original field of employee satisfaction. The interdisciplinary notion is hence used, for instance, in information systems research, such as online buying decisions (Lo et al., 2016) or customer behavior towards product adoption (Park & Ryoo, 2013). The idea of the existence of hygiene factors and motivators is also recently discussed among crowdfunding researchers (Alhammad et al., 2020; Yang & Lee, 2018). Applying the notion of the Two-

Factor Theory to the phenomenon of overfunding, the factors that enable project success in the first place are hygiene factors that should be fulfilled in order to attract a sufficiently large crowd willing to contribute financial resources. In contrast, these factors do not offer additional motivation to provide funds beyond the funding goal, meaning they do not impact the likelihood of project overfunding. Following this line of argument, the central hypothesis on project overfunding, based on the idea of the Two-Factor Theory, is stated as follows:

H1: Factors which increase the success probability of a crowdfunding project do not increase the probability of project overfunding.

METHODOLOGY

Data collection and sample

The data used in this study was gathered from the largest German reward-based crowdfunding platform StartNext (see https://www.startnext.com/) for projects in the years 2015 and 2016. StartNext is a reward-based platform, combining both reward- and donation-based crowdfunding projects, depending on the supporter's choice. As such, the sample includes projects from the same platform, which allows one to assume relatively similar external conditions. For instance, the crowd composition, popularity of reward crowdfunding in Germany, and overall funding volume in Germany (Klein & Pinkert, 2017) remain stable across the two years observed in the sample. The assessed projects were subject to the all-or-nothing principle. The raised money was only transferred to the project teams in case the projects exceeded their initially set funding goal. Otherwise, the money was transferred back to the supporters, and the project was considered unsuccessful.

A description of all collected variables is illustrated in Table 1. Data was collected on the category in which the single projects were started. In total, there are three main categories: creative and modern projects, artistical projects, and social projects. These project categories were included as control variables. As a second step, the level of the funding goal set by the project founders, the availability of at least one picture and video was observed and recorded as dummy variables. Beyond that, the number of updates until the end date of the funding period as well as the total amount of comments was observed, the number of rewards offered and the number of specified keywords. These factors are considered as a minimum preparation effort by the founding team (Mollick, 2014), hence called the *basic quality indicators*.

Table 1. Description of variables

Variable Name	**Explanation**
Success	Success of project (1=successful, 0=unsuccessful)
Overfunded	Project reached at least 110% / 130% / 150% of the funding goal (*1=yes, 0=no*, and *Success=1*)
Controls	
Cat1	Category 1: Includes projects of the following subcategories: Design, Invention, Technology, Science *(1=project in category 1, 0 otherwise)*
Cat2	Category 2: Includes projects of the following subcategories: Film / Video, Photography, Journalism, Art, Literature, Fashion, Music, Theatre *(1=project in category 2, 0 otherwise)*
Cat3	Category 3: Includes projects of the following subcategories: Education, Community, Event, Social Business, Environment (*1=project in category 3, 0 otherwise)*
Goal	Funding goal in €
Basic quality indicators	
Picture(s)	Picture(s) available on project page *(1=yes, 0=no)*
Video(s)	Video(s) available on project page *(1=yes, 0=no)*
# Updates	Number of updates until the end date of the funding period
# Comments	Number of comments on the project page
# Giveaways	Number of giveaways/rewards
Keywords	Keywords specified by project founders
Network	
# Founders	Number of project founders listed
Supported Projects	Number of other supported projects by all project founders
Social Media	Dedicated Social Media page available and linked *(1=yes, 0=no)*
Trust	
Surplus	Mentioned how funds above the funding goal will be used (*1=yes, 0=no)*
NoW Description	Number of words used to answer the question: ‚What is the project about?'
NoW Target	Number of words used to answer the question: ‚What are the goals and who is the target group?'
NoW Reasons	Number of words used to answer the question: ‚Why should someone support this project?'
NoW Usage	Number of words used to answer the question: ‚What happens with the money if the project was successful?'
NoW Biography	Number of words used to answer the question: ‚Who is behind the project?'
Founder Picture	Picture of the founders with visible face *(1=yes, 0=no)*
Company Imprint	Imprint with a company name provided *(1=yes, 0=no)*

Building on the results of the previous literature, the factors attributed to the group of *network factors* are the total number of founders registered on the individual StartNext crowdfunding campaigns, indicating the size of the personal network from the project founders, and the accumulated number of other crowdfunding projects that all project founders of one project supported. The number of supported crowdfunding projects indicates the activity of the founding team in the crowdfunding community itself. Beyond that, the availability of social media was observed. In particular, the availability of an artist Facebook page or a dedicated Twitter profile.

According to the provided definition of *trust*, there are several subcategories of trust which were covered by the following factors: the collected data contains information about the level of how detailed the description of the project was. A first step was the assessment of whether the founders provided a description of how the raised funds and funds exceeding the initial target will be used as a sign of transparency. This factor was recorded as a dummy variable and received the value 'yes,' if the founders provided a description on how the raised funds exceeding the funding goal will be spent upon successful funding. Another factor is the depth of the project description. More specifically, StartNext requires founders to answer six standardized questions about the project: What is the project about? What are the goals and who is the target group? Why should someone support this project? What happens with the money should the project be successful? Who is behind the project? The collected data contains the number of words used to answer each of these questions. Separating these categories allowed the clear assessment of several aspects of signals which aimed at creating trust, such as providing a detailed description of the project team and their experience or providing credible claims why the crowd should support a given project. In addition, the availability of a picture showing the face of at least one founder and the availability of a company imprint including an address were recorded. Both factors may contribute to increasing trust through decreasing possible fraud.

Methods

A hierarchical robust logistic regression approach was chosen to analyze the collected data. Overfunding was determined by three different thresholds: at 110%, 130%, and 150%, calculated by the ratio of acquired funding to the initial funding goal. The hierarchical approach followed the major themes on project success – *basic quality indicators, network,* and *trust* – which allowed a comparison of the individual effects of the three groups separately. In particular, the basic quality indicators served as a baseline model (Model 1),

and network- and trust-related variables were added subsequently in models 2 and 3, respectively. Regression model 4 included all variables across all three themes. In order to make the results as relatable as possible to previous research, a logistic regression on project success was conducted initially, which confirmed that the data in this study reflects and corroborates previous research findings on common success factors. As this step serves as validation of the data in this study towards the findings that have already been identified by extant literature, no hypotheses were developed towards crowdfunding success. Subsequently, the logistic regression for project overfunding allowed one to assess whether factors that significantly explained project success also explained project overfunding. Thereby, this study exclusively considered factors that can help founders reach the funding goal or reach the state of an overfunded project. All factors included in the regression models are factors that can be directly defined or influenced by the project founders. Since project overfunding constitutes a special case of successful projects, the goal of this study is to explain the occurrence of outliers. In order to avoid outliers to bias the regression estimates, robust regressions were conducted to weigh all observations based on their leverage.

In addition to regression analyses, the Blinder-Oaxaca decomposition was conducted using STATA (Jann, 2008), separating successful and overfunded projects according to the three defined funding thresholds of 110%, 130%, and 150%. The Blinder-Oaxaca decomposition was initially developed to investigate wage differences, but can serve to study group differences in any meaningful field of interest (Jann, 2008). The Blinder Oaxaca composition assumes a linear regression model, such that the degree of overfunding, determined as the total amount of funding raised in € divided by the funding goal, was used as the dependent variable in this case. The results of the Blinder-Oaxaca decomposition report (a) the individual regression models for successful and overfunded projects, (b) whether the difference between these two regression models is statistically significant, and (c) separates an *endowment* and a *coefficient* effect. The endowment effect explores whether and to what degree the difference in regression models originates from different characteristics among the groups of successful and overfunded projects. In other words, if successful projects had the same characteristics as overfunded projects, the endowment effect tests whether these projects would become overfunded as well. The coefficient effect indicates whether the independent variables have a different impact on the dependent variable, or in other words, it tests whether the investigated independent variables have a different impact on the group of overfunded projects than on the group of successful projects. Lastly, an interaction term of both the endowment and the coefficient effect is indicated.

RESULTS

Descriptive statistics

The descriptive statistics of the collected data is illustrated in Table 2. In total, 338 projects from 2015 and 2016 are included in the database, with a success rate of 51%, or 174 projects. Out of these 174 successful projects, 83 projects received more than 100% but less than 110% of the funding goal. 91 projects were able to raise at least 110%, 49 projects exceeded 130%, and 26 projects exceeded 150% of the targeted funding goal. The most successful project was able to get 9 times the amount of its projected funding goal. The average contribution per supporter was €89.14 and each project was supported by 102 backers on average. The vast majority of projects provided the basic quality indicators of pictures and videos, with 86% and 97%, respectively. The questions founders were asked to answer to describe their crowdfunding project were answered with 90-100 words on average. Only the description of the project itself demonstrates a higher mean average of number of words with 175. 36% of all projects mentioned the use of any funds above the funding goal.

Table 2. Descriptive statistics

Variable	n	Mean	Std. dev.	Min	Max	Frequency
Cat1	338	0.30	0.46	0	1	100
Cat2	338	0.41	0.49	0	1	137
Cat3	338	0.30	0.46	0	1	101
Goal (in €)	338	13,364.53	23,652.52	100	280,000	
Success	338	0.51	0.50	0	1	174
Overfunded 110%	174	0.52	0.50	0	1	91
Overfunded 130%	174	0.28	0.45	0	1	49
Overfunded 150%	174	0.15	0.37	0	1	26
Picture(s)	338	0.86	0.35	0	1	290
Video(s)	338	0.97	0.16	0	1	329
# Updates	338	4.98	5.35	0	36	-
# Comments	338	10.54	15.80	0	109	-
Keywords	338	4.63	0.91	0	5	-
Give	338	11.38	7.69	0	101	-
Supported Projects	338	2.49	4.46	0	31	-
Social Media	338	0.83	0.38	0	1	279
# Founders	338	2.47	2.38	1	21	-

Variable	n	Mean	Std. dev.	Min	Max	Frequency
Surplus	338	0.36	0.48	0	1	120
NoW Description	338	175.90	127.23	8	718	-
NoW Target	338	97.04	69.22	4	511	-
NoW Reasons	338	93.95	62.21	17	454	-
NoW Usage	338	90.14	75.24	8	511	-
NoW Biography	338	98.63	88.90	1	624	-
Founder Picture	338	0.94	0.23	0	1	319
Company Imprint	338	0.65	0.48	0	1	220

Note: The column "Frequency" indicates the total number of observations for dichotomous variables with the value "1".

Crowdfunding project success – analysis and results

The results for the logistic regression on crowdfunding success are illustrated in Table 3. The results vastly corroborate previous research findings, such that the collected data in this study reflects and confirms the results of previous studies. All models display an R-squared value around 0.40, and the Wald-test statistics indicate significant regression models. The funding goal negatively impacts crowdfunding success in all four models. Uploaded pictures to the crowdfunding page increase project success in two models (1 and 3), and videos do not significantly impact crowdfunding success at all.

Table 3. Logit regression on crowdfunding project success

Variable	(1)	(2)	(3)	(4)
Log Goal in €	-1.04***	-1.16***	-1.12***	-1.22***
Picture(s)	0.94**	0.70	0.86*	0.70
Video(s)	0.87	0.77	0.94	0.66
# Updates	0.24***	0.22***	0.24***	0.22***
# Comments	0.09***	0.09***	0.09***	0.09***
# Giveaways	0.08**	0.06*	0.08**	0.06*
Keywords	-0.06	-0.16	-0.05	-0.14
# Founders		0.30***		0.30***
Supported Projects		0.03		0.03
Social Media		1.25**		1.27**
Surplus			0.26	0.30
NoW Description			0.09	0.06
NoW Target			-0.00	-0.02
NoW Reasons			0.18	0.08

Variable	**(1)**	**(2)**	**(3)**	**(4)**
NoW Usage			-0.36	-0.48*
NoW Biography			0.18	0.12
Founder Picture			0.25	-0.22
Company Imprint			0.52*	0.39
Constant	5.56***	5.85***	5.54***	6.40***
Category control	Yes	Yes	Yes	Yes
N	338	338	338	338
Pseudo R-Sq.	0.38	0.43	0.39	0.44
Wald-Chi2	71.52***	88.37***	80.23***	94.16***

Note: Dependent variable: Project success; Wald-Chi2 = Wald χ^2-test statistic
* p < 0.1 ** p < 0.05 *** p < 0.01.

The number of updates and comments are both highly significant and positively impact project success. However, the specified keywords do not have any impact on project success. Overall, the results lend support for the impact of basic quality indicators having an impact on project success. Concerning network-related factors, the number of founders and the availability of social media are both found to be significant for success. In contrast to previous research, the support of other crowdfunding projects by the founders was not found to increase the probability of success with their own project. For trust-related factors, there are barely any significant findings. Only the number of words used to describe the usage of the acquired funds in model (4) and the availability of a company imprint in model (3) are significant at the 10%-level.

Crowdfunding project overfunding – analysis and results

The results for the logistic regression on project overfunding at the overfunding threshold of 110% are illustrated in Table 4, which includes 83 projects between 100-110% of the funding goal, and 91 projects above 110%. All regression models suffer from low R-squared values and insignificant Wald Chi-squared statistics for the regression coefficients. The variable *Video(s)* is omitted from the regression results, since only one successful project did not upload at least one video. With the two exceptions of the number of founders and the number of words used to describe the target of the project, no other independent variable is near statistical significance. Due to the low explanatory power and the insignificant Wald-test statistics, the validity of the two (partially) significant variables, however, is questionable, and thus the results lend support for H1.

Table 4. Logit regression on project overfunding: Comparing projects with an overfunding threshold of 110% to projects with 100%-110% of the funding goal

Variable	(1)	(2)	(3)	(4)
Log Goal in €	-0.07	-0.14	-0.13	-0.16
Picture(s)	0.36	0.24	0.27	0.14
Video(s)	-	-	-	-
# Updates	0.01	0.01	0.01	0.02
# Comments	0.01	0.01	0.01	0.01
# Giveaways	0.01	0.01	0.01	0.01
Keywords	-0.09	-0.16	-0.11	-0.18
# Founders		0.14*		0.15
Supported Projects		0.01		0.02
Social Media		0.16		-0.05
Surplus			0.53	0.58
NoW Description			-0.05	-0.05
NoW Target			0.78***	0.83***
NoW Reasons			0.10	-0.03
NoW Usage			-0.38	-0.44
NoW Biography			-0.02	-0.06
Founder Picture			-1.01	-1.34
Company Imprint			0.48	0.39
Constant	0.31	0.71	0.72	1.50
Category control	Yes	Yes	Yes	Yes
N	174	174	174	174
Pseudo R-Sq.	0.01	0.04	0.07	0.10
Wald-Chi2	3.17(n.s.)	9.22(n.s.)	17.53(n.s.)	21.05(n.s.)

Note: Dependent variable: Project overfunding; Wald-Chi2 = Wald χ^2-test statistic; n.s. = not significant
* $p < 0.1$ ** $p < 0.05$ *** $p < 0.01$.

Table 5 illustrates the regression results for project overfunding at the 130% threshold, which includes 125 projects between 100-130% of the funding goal, and 49 projects above 130%. Similar to the 110% threshold-level, the R-squared values indicate low explanatory power of all regression models. However, the number of comments is now the only significant independent variable, whereas all other estimates are not significant at all, further supporting H1.

Table 5. Logit regression on project overfunding: Comparing projects with an overfunding threshold of 130% to projects with 100%-130% of the funding goal

Variable	**(1)**	**(2)**	**(3)**	**(4)**
Log Goal in €	-0.10	-0.19	-0.26	-0.29
Picture(s)	1.01	1.06	1.05	1.07
Video(s)	-	-	-	-
# Updates	-0.04	-0.05	-0.05	-0.05
# Comments	0.03***	0.04***	0.04***	0.04***
# Giveaways	-0.01	-0.01	-0.01	-0.01
Keywords	0.14	0.05	0.14	0.08
# Founders		0.11		0.09
Supported Projects		0.05		0.05
Social Media		0.47		0.44
Surplus			0.19	0.25
NoW Description			0.01	0.02
NoW Target			0.06	0.03
NoW Reasons			0.34	0.27
NoW Usage			0.06	-0.00
NoW Biography			0.02	-0.03
Founder Picture			0.52	0.21
Company Imprint			0.46	0.37
Constant	-2.11	-2.00	-2.23	-2.16
Category control	Yes	Yes	Yes	Yes
N	174	174	174	174
Pseudo R-Sq.	0.08	0.11	0.10	0.12
Wald-Chi2	15.17*	20.24**	17.46(n.s.)	20.28(n.s.)

Note: Dependent variable: Project overfunding; Wald-Chi2 = Wald χ^2-test statistic; n.s. = not significant
* $p < 0.1$ ** $p < 0.05$ *** $p < 0.01$.

The results for overfunding at the 150% threshold are illustrated in Table 6, including 148 projects between 100-150% of the funding goal, and 26 projects with more than 150%. The results are almost identical to the previous results reported in Table 5, with rather low explanatory power expressed by the R-squared values compared to the regression results for project success. The number of comments is again significant, at the 5%-level, and the number of words used to describe the reasons why individuals should support a given project is significant at the 10%-level. Given the very few significant results, the results from Table 6 further vastly support H1.

Table 6. Logit regression on project overfunding: Comparing projects with an overfunding threshold of 150% to projects with 100%-150% of the funding goal

Variable	(1)	(2)	(3)	(4)
Log Goal in €	0.05	-0.00	-0.23	-0.24
Picture(s)	1.03	0.95	0.83	0.92
Video(s)	-	-	-	-
# Updates	-0.04	-0.04	-0.04	-0.04
# Comments	0.03**	0.03**	0.03**	0.03**
# Giveaways	-0.01	-0.01	-0.01	-0.01
Keywords	0.37	0.28	0.36	0.32
# Founders		0.07		0.02
Supported Projects		0.06		0.07
Social Media		0.14		0.14
Surplus			0.35	0.41
NoW Description			0.13	0.12
NoW Target			-0.36	-0.36
NoW Reasons			0.66*	0.64*
NoW Usage			0.04	-0.03
NoW Biography			0.12	0.09
Founder Picture			-0.42	-0.70
Company Imprint			0.87	0.90
Constant	-5.38**	-5.15*	-4.08	-4.16
Category control	Yes	Yes	Yes	Yes
N	174	174	174	174
Pseudo R-Sq.	0.09	0.12	0.14	0.16
Wald-Chi2	14.16*	19.34*	25.05*	32.24**

Note: Dependent variable: Project overfunding; Wald-Chi2 = Wald χ^2-test statistic; n.s. = not significant
* p < 0.1 ** p < 0.05 *** p < 0.01.

Crowdfunding project overfunding – Blinder-Oaxaca decomposition

The results for the three Blinder-Oaxaca decompositions, separated by the three thresholds which were used to separate successful from overfunded projects and using the same independent variables, are illustrated in Table 7.

Table 7. Results for the Blinder-Oaxaca decomposition for different levels of project overfunding

Blinder-Oaxaca Decomposition	Overfunded > 110% (n = 174)	Overfunded > 130% (n = 174)	Overfunded > 150% (n = 174)
Differential			
Prediction Overfunded Project	1.63***	2.00***	2.43***
Prediction Successful Project	1.05***	1.10***	1.14***
Difference	0.58***	0.90***	1.28***
Decomposition			
Endowment	0.00	-0.01	0.01
Coefficient	0.50***	0.78***	1.53***
Interaction	0.08	0.13	-0.26

Note: Dependent variable: Degree of success,* p < 0.1 ** p < 0.05 *** p < 0.01.

The average degree of overfunding is 163% for projects applying the 110% threshold, 200% applying the 130% threshold, and 243% applying the 150% threshold. The degree of success for projects considered successful but not overfunded is 105%, 110% and 114%, respectively. The differences are statistically significant at the 1%-level for all three decompositions. Assessing the endowment effect, all three Blinder-Oaxaca decompositions indicate a value close or equal to zero, such that these results support H1. In other words, assuming the successful but not overfunded projects had the same characteristics as the projects considered overfunded, their degree of success or overfunding would not increase at all. However, the coefficient effect indicates that the difference between success and overfunding completely originates from the independent variables having a different impact on the degree of success or overfunding, respectively. Since the endowment effect and the interaction term are completely insignificant, this indicates that factors not included in this analysis account for the differences in the degree of success and overfunding, and the true characteristics determining overfunding remain unexplained by the applied regression models. Hence, factors not included in the regression models account for the discrimination between successful and overfunded projects, as expected in H1.

DISCUSSION

The central goal of this study is to identify factors explaining the occurrence of overfunding in reward-based crowdfunding projects. Intuitively, factors contributing to crowdfunding success, a necessary precondition of

overfunding, might constitute a potential source for overfunding. Yet, there is little empirical evidence on overfunding and the potential relationship between success factors and funding once a project achieves its initial funding goal. Hence, this study sheds light on the explanatory power that success factors for reward-based crowdfunding projects may have on project overfunding. While the findings corroborate the relevance of the examined factors for project success, there is no evidence, however, that the very same factors contribute to project overfunding, and therefore the central hypothesis (H1) is supported.

The basic quality indicators, such as posting updates, providing pictures and a pitch video, and offering a range of different rewards, are the fundamental basics when setting up and running a crowdfunding campaign. Considering a more subjective dimension concerning the implied signals involved in these factors, the entrepreneurial passion demonstrated by the founders, for instance, in their pitch videos or through the project description (Li et al., 2017), or even displays of narcissism (Anglin et al., 2018), have been shown to motivate potential backers to support a project and increase crowdfunding performance. Moreover, a recent review on personality characteristics of project teams emphasizes the importance of personality traits for crowdfunding performance (Neuhaus et al., 2021), which might be perceived through the pitch video and the project description and taken into account by the crowd. These factors can thus constitute elements of different subsets of signals, as they can be employed through the pitch video, a basic quality indicator, or the project description, which can be assigned to signals referring to trust-building measures. A further consideration addressing the project description is that not only the length of the description of projects can matter, as investigated in this study, but also its content and the used wording (Isaak & Selasinsky, 2020). Specific topical features can help founders to increase the probability to succeed, for example, by mentioning which consequences the project yields, like environmental protection (Yuan et al., 2016). In addition, the linguistic style (Parhankangas & Renko, 2017) needs to be considered in this context, such as the ability to clearly articulate issue-relevant information (Allison et al., 2017) or a positive wording (Anglin, Short, et al., 2018). Hence, to explain overfunding, a more fine-grained examination of potential determinants might be necessary. This study provides evidence that the pure means to convey signals, such as available videos and provide a more extensive project description, are insufficient to encourage overfunding. Breaking down these means into the actual signals as perceived by the crowd, as illustrated above, can extend the findings of this study in the context of project overfunding.

Additional factors that may impact overfunding are the individual motivations of backers to receive rewards. Rewards are central motivators to the crowd, yet the availability of more rewards does not impact overfunding, according to the findings of this study. Extant research provides further evidence that may provide insights enhancing this study. For instance, the number of rewards is shown to have a curvilinear relationship with project success (Du et al., 2019), and the attractiveness of rewards is equally important (Steigenberger, 2017), such that some projects might be 'self-runners' due to the idea itself (Kraus et al., 2016). In line with Wheat et al. (2013), the type of reward might play a role for backers, and it is easier to provide physical rewards for projects which aim at developing a product, whereas science-based projects must use other kinds of rewards, as the projects' results are often immaterial. Therefore, the types of rewards offered might play a role for overfunding. The attractiveness of rewards is evaluated individually by each supporter based on individual preferences. Rewards are supposed to satisfy and convince as many potential supporters as possible; the individual appeal to each supporter is, however, based on his or her subjective perception. When the attractiveness of some rewards is sufficiently high, backers might still contribute to a project that has already achieved its funding goal to secure the reward as early as possible. Thereby, the perception that their own contribution matters to the project might be subordinate to the desire to receive a specific reward, which might constitute a central determinant of overfunding.

Although network-related factors are shown not to predict overfunding in this study, previous research dedicated to social networks may help to assess these factors in more detail. The particular use of social media, such as creating a 'buzz' in social networks (Thies et al., 2014), and the individual interaction with the backers through comments (Wang et al., 2018), in terms of reply speed or maintaining a positive sentiment, positively relate to project success. Moreover, instead of randomly posting irrelevant content, strategically using social media is an important factor to be considered (Datta et al., 2018). As such, good timing of employing specific measures to boost backer motivation might be necessary, that is, a dynamic perspective on social media could provide further insights. For instance, it is more likely that backers contribute to a project when the funding goal is almost reached (Li & Wang, 2019), relating to the finding that the perception of backers that their contribution matters positively relates to their funding decision (Kuppuswamy & Bayus, 2017). Therefore, creating a social buzz seems undoubtedly useful to increase the probability to succeed with a crowdfunding project. However, the nature of how a social buzz is created, in terms of content and timing, might play a role to separate its effect on project success and project overfunding. When a project achieves its targeted funding goal, the momentum could be

used to create additional attention to the project, and the strategy of utilizing social media must be adapted to stimulate new motivation for backers to further support the project even beyond its funding goal. Research dedicated to the use of social media before and after a project has reached its funding goal could allow further insights into this dynamic. As already illustrated by Song et al. (2020), the strengths of certain signals vary over the funding period, such that studying the dynamic nature of individual signals, such as a dedicated social media strategy, can provide valuable insights into potential determinants of project overfunding.

CONCLUSION

This article addresses the yet vastly unexplored phenomenon of project overfunding in reward-based crowdfunding. Rooted in the Two-Factor Theory, the central claim of this study is that the factors contributing to project success (hygiene factors) are different from the factors contributing to project overfunding (motivators). In fact, the findings lend support for this claim, as common success factors do not indicate a significant contribution to explain project overfunding. Hence, for future crowdfunding project teams, this study suggests that once a project turns successful, the team must consider different factors and thus adapt their actions to further encourage funding beyond the initial funding goal.

Theoretical implications

While project success and project overfunding are inevitably related, they are distinct occurrences in reward-based crowdfunding. For instance, the crowd's motivation to provide financial resources is shaped by the perception of whether an individual contribution matters (Kuppuswamy & Bayus, 2017). As such, projects that have already achieved the funding goal constitute less attractive projects to provide additional financial resources, in terms of that any additional contribution does not matter for success anymore (Kuppuswamy & Bayus, 2017). Mollick's (2014) seminal study on crowdfunding provides evidence that only a few projects exceed their funding goal by large margins, invigorating the assumption that motivating factors for providing financial resources differ among projects that still pursue to achieve their funding goal, and projects that have already reached their goal. Hence, a rational assumption based on these findings is that in order to further shape the crowd's intention to provide funding, the factors motivating the crowd may change. Against this backdrop, this study suggests that the underlying notion of the Two-

Factor Theory (Herzberg, 1968) provides valuable guidance for overfunding of reward-based crowdfunding projects. In particular, applying the Two-Factor Theory to reward crowdfunding suggests that the factors required for success are hygiene factors and, as such, are basic requirements that should be fulfilled in order to succeed with a crowdfunding project. However, to further stimulate funding, other factors – motivating factors according to the Two-Factor Theory – must be considered for explaining overfunding. This study contributes to this theoretical consideration and provides empirical evidence. Supported by the regression analyses and the Blinder-Oaxaca decomposition, the results lend support for the applicability of the notion of the Two-Factor Theory in a reward-based crowdfunding context.

Beyond proposing a theoretical framing rooted in the Two-Factor Theory, the results of this study further complement and enhance extant research on project overfunding in two ways. First, this study enhances the consideration of the level of project overfunding. Previous studies define a single threshold, for instance, total funding of at least 110% of the initial funding goal (e.g., Adamska-Mieruszewska et al., 2019), or include all projects equally that achieved their funding goal in their analyses (e.g., Cordova et al., 2015; Koch, 2016), which results in projects receiving only a few percentages above the funding goal being considered overfunded. This study enhances these approaches to study overfunding and examines three levels of overfunding, at 110%, 130%, and 150% relative to the initial funding goal.

Second, the results of this study contrast with the results of Cordova et al. (2015) and Koch (2016), who identify significant relationships between success factors and project overfunding. The contrasting results might originate from the varying methodological approaches to determine overfunding, as pointed out above. As a result, it is indicated that the operationalization of overfunding plays a central role in achieving a more uniform understanding of the determinants of project overfunding.

Practical implications

For entrepreneurs considering reward-based crowdfunding as a possibility to acquire funding, this study offers important guidance. First, this study corroborates previous research and supports the findings that project teams can influence the success probability by utilizing the basic tools crowdfunding platforms offer, such as posting updates, or connecting social media profiles to their crowdfunding page. These tools, however, do not encourage the crowd to provide further financial resources once the initially set funding goal is reached. Hence, project teams that are in the fortunate situation of achieving their funding goal prior to the deadline of the funding period must

apply different strategies to motivate the crowd to provide further funding. According to the findings of this study, simply continuing with the strategy that led to success does not seem to be a fruitful approach.

Limitations and avenues for future research

The methods used to examine the phenomenon of overfunding are to some extent limited by the nature of the goal of this study, as regression analyses are subject to be biased by outliers. However, the phenomenon of overfunding is about finding an explanation for outliers, considering overfunding a subset of successful crowdfunding projects. Thus, statistical methods must be applied accordingly, since any statistical or mathematical transformations of the dependent variable, such as project success or the degree of success, change the very nature of interest, namely the pattern of project overfunding. This study utilized multiple perspectives provided through robust logit regression models and the Blinder-Oaxaca decomposition, in combination with multiple thresholds for project overfunding that jointly addressed this methodological flaw. However, not indicated in this study is the comparison of extreme cases, such as projects that exceed the initial target by multiple times to projects that are 'only' successful. Purposively gathering data on projects that exceeded their funding goal by very large margins and comparing them to projects exceeding the funding goal by small margins could constitute a promising approach for further studies.

A further methodological limitation is the role of endogeneity related to project success. The number of comments and updates is most likely higher for successful projects since success provides a reason for project founders to post updates or for backers to congratulate the project founders on their success in the comment section. However, a vast majority of previous studies include these independent variables in regression analyses without discussing endogeneity issues. This especially renders regression analyses that aim to determine factors differentiating successful from unsuccessful projects a rather unprecise and potentially biased approach. However, considering overfunded crowdfunding projects, the underlying assumption of a potential endogenous relationship between the mentioned independent variables and the dependent variable, overfunding, diminishes. Overfunded projects are a subset of successful projects, such that there is a comparable incentive by the project founders to provide updates, or that a higher number of backers leads to a higher number of comments. Thus, for this study's focal subject of interest, project overfunding, endogeneity issues are most likely strongly reduced compared to studies investigating success factors.

Beyond methodological limitations, this study is limited by the explanatory power of the collected data, which primarily includes factors that are determined by the project team. Hence, this study covers two central constituents in the context of the signaling theory – the project team as a signaller and selected signals. Yet, the third key constituent, the crowd, is not observed in this study. Therefore, not only the perspective of the project founders but also the perspective of the crowd has to be taken into account, constituting a subset in a signaling environment addressing the receiving end of the signals. Complementarily to the psychological perspective of the project team, as introduced in the discussion, also psychological aspects of the backers may be further investigated to explore project overfunding. Zhang and Chen (2019) find that both egoistic and altruistic motivations play a role in the backers' decision to support a project, with egoistic motivation prevailing. Some projects might be able to stimulate altruistic motivation that contributes to overfunding, for instance, those that are considered to be turning a project into reality that is a 'dream' of backers (Ahrens et al., 2019) and projects that are perceived as more creative (Davis et al., 2017). For these projects, the motivation to support can be driven by the desire to 'make the product happen' (Zvilichovsky et al., 2018). Thereby, backers might assume that more financial resources for the project team increase the chance that their 'dream' is successfully implemented and thus are motivated to support the project even beyond the funding goal. Colistra and Duvall (2017) find that being part of the project, which is a perception relevant to the project's implementation, motivates backers to provide funding. This may invigorate the desire to make the product happen and contribute to the motivation to provide funding even once the initial funding goal has been reached.

A further topic that is often neglected is the characteristics of the crowd, for instance, of the core target group of a given project, such as the individual composition of the crowd. For the related concept of crowdsourcing, the characteristics of the crowd are already subject to broad and thorough research (e.g., Afuah & Tucci, 2012; Frey et al., 2011), but the relationship between crowd characteristics and project success is not yet investigated by thorough crowdfunding research, let alone the potential relationship to project overfunding. For instance, it can be argued that if projects succeed in attracting backers with a high purchasing power due to available financial resources, and if these backers are able to more precisely assess the project quality due to their experience or familiarity with the project domain, they could provide more funding and thus ultimately contribute to project overfunding. A promising avenue for further research is thus to assess whether and which crowd compositions impact project overfunding.

Further, related to the perspective of the crowd, the vast majority of studies in the field of crowdfunding focus on data available on individual crowdfunding project websites, which results in data that is available *after* the supporters contributed to a project. A novel perspective on crowdfunding could be gained by conducting a survey or interviews among potential supporters, addressing their decision *before* supporting a project, thereby differentiating projects that have not yet reached their funding goals and others that already received more funding than initially targeted. This approach could deliver new insights about the relative importance of factors contributing to both project success and overfunding, and furthermore, unveil yet neglected factors.

To conclude, a central limitation of this study concerns the nature of the factors considered in the presented analyses, which is that the studied factors are rather objectively measurable. However, this limitation offers guidance for avenues of future research. As such, considering factors on a more fine-grained level and delineating more specific signals, in particular taking into account a more subjective perspective on the perception of these signals, may provide evidence for factors determining project overfunding. In view of the signaling theory, future research is encouraged to define sets of signals, such as in this study the basic quality indicators, signals to create trust, and signals that relate to network-related aspects, and define subsets within these sets which (i) are necessary basics for project success, and (ii) may contribute not only to success but in addition to overfunding, or exclusively to overfunding.

An appendix summarizes the discussion of the results and the indicated factors for future research that may have an impact on project overfunding. Thereby, this study offers both a theoretical and empirical groundwork for future research to build upon in order to identify the determinants of overfunding in reward-based crowdfunding projects.

Appendix: Project success factors and suggested factors with a potential impact on project overfunding

Signal sets	Project success	Potential impact on project overfunding	Sources
Signaller (Project Founders) Perspective			
Basic quality indicators			
Visual Cues (Availability of Videos / Pictures)	n.s. / +	• Picture and video quality • Content of pitch video (e.g., demonstrating entrepreneurial passion) • Communicate level of innovativeness/creativity of the project idea	Chan and Parhankangas (2017), Davis et al. (2017), Jiang et al. (2019), J. J. Li et al. (2017)

Signal sets	Project success	Potential impact on project overfunding	Sources
Number of Updates	+	• Content, quality, and sentiment of updates	Block, Hornuf, and Moritz (2018), Xu et al. (2014)
Number of Comments	+	• Sentiment, length, reply speed	Wang et al. (2018)
Number of Rewards	+	• Attractiveness of rewards • Pricing decision for different rewards (price discrimination)	Bender et al. (2019), Hu et al. (2015), Lin et al. (2016)
Network			
Number of Founders	+	• Size of the personal network of founders (friends, strong or weak ties)	Borst et al. (2018), Mollick (2014)
Availability of Social Media	+	• Creating social media hype ('buzz') • Size of social and personal network • Strategic use of social media	Datta et al. (2018), Kromidha and Robson (2016), Thies et al. (2014), Summers et al. (2016)
Trust			
Number of Words in Project Description	n.s.	• Linguistic Style • Narrative of the project (e.g., realizing a 'dream')	Ahrens et al. (2019), Allison et al. (2017), Mitra and Gilbert (2014), Parhankangas and Renko (2017), Zhou et al. (2018)
Founder characteristics	n.o.	• Experience of project founders (crowdfunding or professional experience) • Internal social capital, positive psychological capital • Team composition (e.g., gender) • Personality characteristics	Allison et al. (2017), Anglin, Short, et al. (2018), Anglin, Wolfe, et al. (2018), Davies and Giovannetti (2018), Neuhaus et al. (2021), Ullah and Zhou (2020)
		Receiver (Crowd) Perspective	
Perception of project and of own contribution	n.o.	• Desire for project realization • Individual contribution matters • Altruism • Perception of product newness, attractiveness and/or usefulness • Be part of a community	Kraus et al. (2016), Kuppuswamy and Bayus (2017), Gerber et al. (2012), Y. Li et al. (2019), Rose et al. (2020), Steigenberger (2017), Zvilichovsky et al. (2018)
Crowd characteristics	n.o.	• Crowdfunding experience • Familiarity with the project or the project domain • Availability of financial resources (e.g., age and employment status)	Gerber and Hui (2013)

Note: The column "Project Success" illustrates the findings of this study; Abbreviations refer to the following: n.s. = not significant, n.o. = not observed, + = positive impact observed.

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Abstrakt

CEL: *Chociaż istnieje bogata literatura na temat kluczowych czynników warunkujących sukces finansowania społecznościowego opartego na nagrodach, niewiele badań poświęcono projektom finansowania społecznościowego, które nie tylko odnoszą sukces, ale otrzymują znacznie więcej środków niż początkowo zakładano w określonym celu finansowania. Niniejsze badanie ma na celu rzucenie światła na ten bardzo zaniedbany temat w badaniach finansowania społecznościowego.* ***METODYKA:*** *Opierając się na bogatym zbiorze danych 338 projektów crowdfundingowych opartych na nagrodach, w badaniu zastosowano dwuetapową analizę statystyczną. Po pierwsze, przeprowadzono analizy regresji w celu określenia odpowiednich czynników sukcesu finansowania społecznościowego, aby potwierdzić istniejącą literaturę i podkreślić, że dane właściwie odzwierciedlają już zidentyfikowane kluczowe ustalenia dotyczące sukcesu finansowania społecznościowego. W drugim kroku te same czynniki zostały zbadane w przypadku projektów nadmiernie finansowanych, wykorzystując analizy regresji logistycznej i dekompozycję Blindera-Oaxaca.* ***WYNIKI:*** *Chociaż to badanie potwierdziło wyniki wcześniejszych badań dotyczących czynników zwiększających prawdopodobieństwo sukcesu projektów crowdfundingowych, te same czynniki okazały się nie wyjaśniać pojawienia się nadmiernego finansowania projektów. Na przykład, chociaż twórcy projektów mogą dostarczać aktualizacje, większą liczbę różnych nagród lub wykorzystywać strony mediów społecznościowych w celu zwiększenia prawdopodobieństwa sukcesu, to czynniki te nie przyczyniają się do wyjaśnienia zjawiska nadmiernego finansowania projektów.* ***IMPLIKACJE:*** *Wyniki tego badania podkreślają, że aby zrozumieć nadmierne finansowanie projektów crowdfundingowych, przyszłe badania muszą wykraczać poza podstawowe czynniki sukcesu finansowania społecznościowego. Opierając się na koncepcji teorii dwóch czynników, odkrycia sugerują, że czynniki przyczyniające się do sukcesu można uznać za czynniki higieny, które są niezbędne do odniesienia sukcesu w pierwszej kolejności. Jednak te czynniki nie motywują tłumu do dalszego finansowania już udanego projektu. Stąd czynniki motywujące pozostają niezauważone w zachowanej literaturze. W praktyce oznacza to, że zespoły projektowe osiągające swój cel finansowania nie mogą polegać na tych samych czynnikach, które pomogły w zachęceniu tłumu do dalszego finansowania. Zróżnicowanie czynników higienicznych i motywujących do nadmiernego finansowania w finansowaniu społecznościowym opartym na nagrodach oferuje bogate możliwości dla przyszłych badań. Sugeruje się, że istotną rolę w przypadku nadmiernego finansowania projektów odgrywają bardziej subiektywne czynniki, takie jak indywidualne postrzeganie przez członków społeczności projektów crowdfundingowych.* ***ORYGINALNOŚĆ/WARTOŚĆ:*** *Badając nadmierne finansowanie projektów, niniejsze badanie uwzględnia lukę badawczą dotyczącą czynników przyczyniających się do pojawienia się nadmiernego finansowania projektów. Niewiele jest dowodów na charakterystykę nadmiernie finansowanych projektów crowdfundingowych, a zatem niniejsze badanie dostarcza niezbędnych podstaw teoretycznych i empirycznych dla przyszłych badań, które będą opierać się na wynikach tego badania.*

Słowa kluczowe: *crowdfunding oparty na nagrodach, overfunding, przedsięwzięcia biznesowe, przedsiębiorczość, czynniki sukcesu, teoria dwóch czynników.*

Biographical note

Felix Pinkow holds a Master of Science in Management from University of Mannheim. Since 2018, he works as a Research Associate and Ph.D. candidate at the Chair of Technology and Innovation Management, Technische Universität Berlin. His primary research interests concern creativity and creative thinking processes, in particular the relationship between affect and creativity. Further research topics include open innovation, crowdsourcing, and crowdfunding. His work was presented at international conferences, such as the Innovation and Product Development Management Conference, the JPIM Research Forum, and the Open and User Innovation Conference.

Conflicts of interest

The author declares no conflict of interest.

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COVID-19 impact and firm reactions towards crisis: Evidence from a transition economy

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Abstract

PURPOSE: *The new situation arising from the COVID-19 pandemic has brought many difficulties for companies worldwide. To combat the pandemic, governments have enforced lockdown and closure of businesses, and in response, companies have developed various reactive strategies to ensure their survival. The purpose of this study is twofold: to examine the impact of COVID-19 on firms and examine firm reactions towards the COVID-19 crisis. The study analyses the impact of COVID-19 on firm size, ownership type, and industry characteristics. Secondly, to analyze firm reactions based on four components: technological preferences, strategic behavior, management practices, and social networks.* ***METHODOLOGY:*** *This study employs a quantitative method, using a survey of 320 firm owners and managers conducted in Kosovo by the Institute of Entrepreneurship and Small Business.* ***FINDINGS:*** *Findings suggest that income dropped significantly for SMEs based on the firm size. Based on industry characteristics, findings show that all industries have been influenced negatively. Regarding the ownership type, findings suggest that family firms are more affected by COVID-19 than non-family firms. Factor analysis suggests that the*

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technological preferences, managerial practices and strategic behavior, and social networks effectively responded to the crisis derived from COVID-19. Findings also suggest that firms did not employ a single reaction (e.g., technological change) but combined several reactions where one reaction led to another reaction that proved effective and led to firm survival during the crisis. ***IMPLICATIONS:*** *The implications of this study are as follows: firstly, this study examines the impact of COVID-19 and, at the same time, firm reactions to the crisis; secondly, contrary to previous studies, this study shows that all industries have been influenced negatively, including all SMEs; thirdly, this study shows that ownership type was an important factor concerning the impact of COVID-19, where family firms were influenced more than non-family firms; this is due to the distinct characteristic of organizational structure that family firms have, including the involvement of members of family firms. Last, this study shows that a single reaction of firms does not lead to survival, but the chain of reactions combined with dimensions shown above.* ***ORIGINALITY/VALUE:*** *Despite growing theoretical and empirical literature about COVID-19 and firms, this study shows the impact and firm responses towards the crisis of COVID-19. Furthermore, focusing on the context of Kosovo, the study contributes to the challenges that firms face in different cultural and institutional settings.*

Keywords: *COVID-19 impact, firm reactions, technological preferences, strategic behavior, management practices, social networks, Kosovo.*

INTRODUCTION

The outbreak of COVID-19 in early 2020 has influenced the global economy, leading many countries into recession. Governments around the globe responded by introducing a 'lockdown of economies' to stop the spread of the virus, leading to the deepest global recession since the last world war (World Bank, 2020). The enforced lockdown and closure of businesses in response to the COVID-19 pandemic has resulted in economic crises, bringing attention to entrepreneurship and its importance to economic recovery (Krasniqi et al., 2021). As a result, many governments took radical policies and responded to the crisis by introducing more than 1,600 policy responses to stimulate the private sector (Cirera et al., 2021). According to estimates, the global economic output for 2021 will be 4 percent higher despite these policy measures, but it will be 5 percent below pre-pandemic projections. Based on these projections, the pandemic impact will have a long-lasting negative impact on the economy, with a growth rate projected at 3.8 percent in 2022. In addition, low-income countries will face uncertain growth outcomes as these countries face several challenges, and the recovery from the pandemic will be slow, where the output is estimated to be 5.2 percent below pre-pandemic projections 2021 (World Bank, 2021).

Governments during the crisis supported the economy through various incentive schemes to lower the short, medium, and long-term consequences. In comparison to the global financial-economic crisis of 2008 that influenced firms and industries negatively (Roper & Turner, 2020; Cowling et al., 2015; Bartz & Winkler, 2016; Burger et al., 2017), the current crisis differs in many aspects from the previous crisis, as firms faced a shortage of supply, uncertainty, and the lockdown of the economy to respond to increased cases of COVID-19 (Donthu & Gustafsson, 2020; Belhadi et al., 2021). Studies show that COVID-19 has hampered firms and industries negatively and they face liquidity challenges (De Nicola et al., 2021; Shen et al., 2020; Ahmad et al., 2021), particularly threatening the survival of small and medium-sized enterprises (SMEs), which comprise 90% of businesses worldwide and contribute to 70% of total employment worldwide (Stephan et al., 2020). SMEs play a significant role in generating innovation, especially growth-oriented firms, and should be the focus of policymakers (Hashi & Krasniqi, 2011; Krasniqi & Desai, 2016). In this vein, policymakers, owners and managers must understand how firms respond to the crisis (Ebersberger & Kuckertz, 2021). Emerging entrepreneurship literature suggests that firms build immediate response strategies to mitigate the risk and ensure survival. Studies maintain that common firm responses during the COVID-19 were: digitalization (Guo et al., 2020; Ahmad et al., 2021) and a focus on innovation to respond to the emerging needs of customers (Hanisch & Rake, 2021; Liu et al., 2021; Ferrigno & Cucino, 2021).

Despite the growing body of literature, there is a gap on the impact of COVID-19 and firm responses in different contexts worldwide. Cirera et al. (2021) argue that lessons learned from the previous crisis (e.g., the financial crisis in 2008) are essential sources of evidence for policymakers and practitioners to respond to the first response phase. Drawing on data from in-depth research based on multiple case studies, Domi and Krasniqi (2019) showed that small firms had successfully chosen to diversify and expand into new business areas to compensate for low demand during the previous financial crisis. However, policymakers and practitioners lack data and evidence regarding the design of policies and responses to the pandemic. In addition, the impact and firm responses may vary depending on the context in which firms face the challenges in low-income countries.

Based on the discussion above and the gap in the literature, the purpose of this study is twofold: Firstly, to examine the impact of COVID-19 on firms and, secondly, to examine firm responses to the crisis caused by the pandemic situation of COVID-19. For this purpose, the study utilized the recent SME survey conducted with 320 entrepreneurs by the Institute for

Entrepreneurship and Small Businesses in Kosovo in the first half of 2021. This study addresses the following research questions:

RQ1) What are the effects of COVID-19 on firms?
RQ2) What reactions did firms show against COVID-19?

The aim of this study is twofold: first is to analyze the impact of COVID-19 on firm incomes based on firm size, ownership type, and industry characteristics; second is to examine firm responses divided into four components: technological preferences (acceleration of the use of digital technologies, forcing to use e-commerce, selecting employees with high technological skills); strategic behavior (organizational learning and efficiency; firm responses to the crisis and analyzing the future potential challenges, changing strategies based on customer preferences; changing investment strategies); management practice (communication preferences, managerial changes, decision-making processes); social networks (social networks helped firms overcome the challenges; inefficient supplier relations during the pandemic).

This study contributes to the literature and an ongoing discussion on the impact of COVID-19 and firm responses to COVID-19. Regarding the impact of COVID-19, this study shows that besides firm size and industry characteristics, there is a varying impact of COVID-19 based on ownership type. Furthermore, this study contributes to the literature on firm reactions and shows that the combination of various reactions is more effective than a single firm reaction strategy to COVID-19.

The structure of this article is as follows: The first section reviews the literature on the impact of COVID-19 and firm responses; the second part presents the research method, and the third part the results of the research. The last section presents the discussion of the study, managerial and policy implications, limitations, and future research suggestions.

LITERATURE REVIEW

The impact of COVID-19 on firms

The uncertainty derived from the economic crisis directly negatively affects the national economy and firms. The survival of SMEs and large firms is crucial for economic recovery (Pedauga et al., 2021). Studies show that crises negatively influence firms of all sizes and industries (Shen et al., 2020) but are most vulnerable for SMEs where millions of jobs are at risk (Stephan et

al., 2020). COVID-19 had a significant negative impact on SMEs and firms that operated in industries that were most vulnerable to the pandemic (Belhadi et al., 2021; Eggers, 2020; Castro & Zermeño, 2020; Guo et al., 2020; Stephan et al., 2020). Specific industries, such as transportation, hotels and restaurants, are amongst the most vulnerable due to COVID-19.

COVID-19 had a considerable impact on firms' sales resulting in firm liquidity constraints and putting firms' survival at risk (Kuckertz et al., 2020). This negative impact on firms is related to several factors: disconnected supply chain, the challenges that firms face regarding logistics, the lack of critical resources, price distortions, customer pessimism, the lack of trust in global trade, and government restrictions (Morgan et al., 2020). Apedo-Amah et al.'s (2020) study shows that the impact of COVID-19 on firms was on sales as the virus continued spreading, financial instability due to the decrease in income, employment adjustment, and an increased reliance on digital platforms as a response to COVID-19.

The impact of COVID-19 differed among firm and industry characteristics. For example, firms operating in vulnerable industries that were influenced negatively by pandemic situations had lower cumulative abnormal returns characterized by fixed assets and a high percentage of institutional investments (Rapaccini et al., 2020). Industries such as tourism, catering, transportation, and food and beverage experienced a pronounced decline in production, operations, and sales (Chowdhury et al., 2020; Shen et al., 2020). Industries such as construction, information transfer, computer service and software, and health care did not experience adverse effects COVID-19 (Guo et al., 2020). This study also shows that larger firms experienced a lesser decline in their sales than private, state-owned, and foreign-owned firms. In addition, Kuckertz et al. (2020) report that the crisis did not influence some firms, as the relevance of their way of doing business remained resilient and already took measures to respond to the crisis.

Due to the uncertainty that the pandemic produced around the world, firms adopted various reaction strategies to respond to the negative impact of COVID-19 and ensure their survival. The following section reviews the literature on firm reactions based on four components: technological preferences, strategic behavior, management practices, and social networks.

Firm responses as a source of survival towards COVID-19

As soon as the crisis of COVID-19 emerged, firms employed various response strategies to ensure their survival and attempt to leverage from the crisis. Although COVID-19 did not have a uniform impact across industries and firm sizes, it caused uncertainty for all firms and industries in the world. The

uncertainty derived from the crisis may hinder the ability of entrepreneurs to discover new opportunities (Bartz & Winkler, 2016; Nguyen et al., 2021) even though these exogenous shocks like COVID-19 may have an impact on entrepreneurial opportunities (Morgan et al., 2020; Kuckertz et al., 2020), the resilience of entrepreneurs and the skills they have shown lead firms to adopt and build strategies to face the challenges (Castro & Zermeño, 2020).

Due to the restrictions implemented to avoid increasing COVID-19 cases, namely social distancing, firms employed digital technologies as a source of their competitive advantage (Guo et al., 2020; Ahmad et al., 2021). At an industry level, findings show the automobile industry's mitigating strategy was to develop localized supply and take advantage of advanced 4.0 technologies. The airline industry responded to the crisis by defining their operations within the airports and flights. For these two industries, Big Data Analytics played an essential role in offering information regarding supply chains and overcoming the challenges derived from COVID-19. In addition, the cooperation among supply chain stakeholders and employing advanced technologies were critical factors in managing the risks of pandemics (Belhadi et al., 2021). However, firm responses through digitalization and building resilience need adequate elasticity and IT infrastructure, ensuring enough human resources to manage wide-range interruptions (Rapaccini et al., 2020).

There was some common strategic behavior that firms employed to cope with uncertainty, leverage from the crisis, and ensure survival and competitive advantages. Among these were focusing on learning and increasing firm efficiency, responding to the situation by analyzing the potential future challenges, changing strategies according to customer needs, and changing their investment strategies. Analyzing the crisis and the potential challenges that could derive in the near future is crucial for the firm. During COVID-19, firms face financial crises resulting from the negative impact that may reflect in their survival (Cowling et al., 2020). Even if start-ups take advantage of the current crisis and focus on innovation in the long term, they may be exposed to risks. Therefore, a combination of policy measures and providing (removing) cash flow, in the long run, can create a friendly ecosystem for beginners (Kuckertz et al., 2020). This is related to the uncertainty that the COVID-19 outbreak has brought, creating a new situation where the short-term consequences are somehow known, but in the long term, uncertainty is evident. Nagarajan and Sharma (2021) show that COVID-19 has a cross-industry and cross-economic impact, and firms with a higher proportion of foreign assets may experience more significant long-term losses.

Firms focused on strategic behavior by changing their strategies and adapting them according to customer needs, created by urgent circumstances derived from COVID-19. The emergence of COVID-19 leads to new innovative

solutions, significantly as the changing environment changes the innovation environment and other challenges it brings to the world economy and people worldwide (Ebersberger & Kuckertz, 2021). Introducing new products, new services, and new ways of doing business will be crucial to overcoming the pandemic crisis (Roper & Turner, 2020). During COVID-19, firms used various coping strategies, and one mechanism when the crisis began (Kraus et al., 2020) was to focus on innovation by introducing new products among these strategies. The focus on innovation was a necessary response to the pandemic, followed by firms in the health sector (Hanisch & Rake, 2021). During this period, new opportunities emerged for firms that produced hygiene products and developing digital work solutions (Kuckertz et al., 2020). The innovation trends highlighted during this period include the intersection of health, data, urbanization, and connecting the world through online or offline and commerce (Ebersberger & Kuckertz, 2021).

Firms changed their investment strategies to maximize the crisis by introducing new products. For example, the purpose-led actions by firms in the short-term may focus on fighting the crisis by producing products for the benefit of society in the short term. In contrast, these short-term, purpose-led actions may influence firms positively, where firms connecting their short term activities may focus on medium-term R&D innovation and manufacturing strategies (Ferrigno & Cucino, 2021). Another study shows that start-ups responded faster to opportunities derived from the crisis than more established firms or research institutions (Ebersberger & Kuckertz, 2021).

Regarding communication preferences, and depending on firm size, findings suggest that digitalization positively influenced SME's performance (Guo et al., 2020). This communication preference enables firms to respond more quickly to changes in the market and customers' needs and demands. Managerial changes in changing the managerial team or changing decision-making process practices are essential reaction strategies for firms. The emergence of COVID-19 influenced the firm's innovation management and decision-making process. Building resilience and decision-makers' ability to take risks is crucial when designing response strategies (Guderian et al., 2021). Studies show that senior management and the ability of firms to diffuse technological infrastructure had a positive impact on firms' digital transformation and organization performance (Ahmad et al., 2021). Another study shows that in contrast to openness to change and proactiveness of firms, creativity, the ability of a firm to take risks, and the orientation towards the future had a positive impact on firm performance (Zainal, 2020).

In this vein, the way in which firms saw the crisis and built crisis management was an essential coping strategic reaction. Kraus et al.'s (2020) study shows that for strategic reflections, family firms employed

retrenchment in the short term during the lockdown, which were valuable and focused on process streamlining. Preserving in the short term was used as a reactive strategy to operative crisis management, and in the long term, reflection. Innovation in the short term was mainly used to temporarily adjust the business model. These strategies depended on situations, and in some cases, firms followed a crisis management strategy despite the low impact of crisis which went beyond preserving. Hence, the entrepreneurial orientation of the management team was of crucial importance to help the firm see the crisis as an entrepreneurial opportunity.

Rapaccini et al. (2020) proposed a four-stage model for crisis management to respond to the crisis derived from COVID-19. The first stage is 'Calamity,' which consists of understanding the phenomenon, increasing awareness inside the firm, and responding accordingly. The second stage is 'Quick and Dirty' and the key here is agility, during which phase the firm aims to increase the safety protocol inside the firm. The third stage is 'Restart,' which is related to elasticity and the firm is organized to restart the business and respond to customer needs during this phase. The last phase is 'Adopt to Next Normal,' which is related to redundancy, during which phase the firm aims to adapt its strategies to new circumstances and enter into a normality phase.

Leveraging from social networks was an important factor for firms to cope with the crisis derived from COVID-19. Social networks are crucial for survival during and post COVID-19 by managing their relations with buyers and suppliers (Sharma et al., 2020). The relational capabilities to mobilize internal resources and combine them with external resources through their networks, including the goodwill of partners, joint support of the start-up community, and using brokers to access social capital, were crucial for firms to overcome the crisis (Kuckertz et al., 2020). The support of social networks depended on the characteristic of their relations before COVID-19. For example, during the crisis, weak ties had little or no impact, which then forced the firms to seek new relationships. In contrast, strong ties increased their resilience, supported each other by developing new relationships. At the same time, they could be an essential factor to build new business model transformations for the firm (Fath et al., 2021). Another important factor for firms was co-opetition, which played a crucial role for retailers through the sharing of information about stock levels, or pharmaceutical firms cooperating to develop vaccines, technological firms cooperating on food production, and the alliances built by charities for a joint cause to fight the virus, were other examples of networks (Crick & Crick, 2020).

METHODOLOGY

In line with the aim and research questions, this study employs a quantitative methodology strategy to analyze the impact of COVID-19 on firms and firm reactions towards the crisis caused by COVID-19. The study uses firm survey data collected by Institute for Entrepreneurship and Small Business (IESB) with 320 business owners/managers in January-March 2021 in ten major cities in Kosovo. The purpose of the survey is to examine the impact of COVID-19 on business activities, identify company reactions, and make policy and managerial recommendations. The questionnaire consists of 32 questions divided into six main topics. Besides the demographic questions, the questionnaire was designed to measure the impact of COVID-19 on firm managerial practices, human resources, technology, strategic behavior and social networks. Within these dimensions, the study focuses on the types of reactions adapted by a firm based on the impact of COVID-19. Thirty-two questionnaire items are used for factor analysis. The items with a factor load of less than 0.45 were excluded as a result of the factor analysis.

Sample

This selected sample was randomly drawn from the electronic database of active taxpayers kept at the Kosovo Tax Administration. Google form questionnaire is used to send an electronic questionnaire to companies that are active taxpayers. The number of active taxpayers during 2020 was 52,839, whereas the number of passive taxpayers was 49,142. Based on active taxpayers, the percentage of selected firms in this study was 0.61 percent in the total population of active taxpayers. The questionnaire was sent to 553 firms, of which 320 completed the questionnaires, leading to a response rate of 57.87.

Before designing the survey, we conducted a detailed literature review analyzing various country-level reports on the impact of COVID-19 on the economy. The purpose of searching the literature and analyzing the reports was to design the questionnaire and use the questionnaires used by other studies, but always consider the Kosovo context. After reviewing the reports and detailed literature, we asked for the opinions of local experts regarding the designed questionnaire. In this study, we designed it by considering the time the survey took place and the crisis faced by the companies. After the questionnaire design, the Institute of Entrepreneurship and Small Business and Business Support Center Kosovo provided experts' support and opinions for topics raised in the survey. The survey instrument is based on a Likert scale, taking a minimum value of 1 and a maximum of 5. Before conducting

field research, a research team first implemented a pilot project and sent the questionnaire to 30 companies to ensure the structural validity of the research questions. The results obtained from the pilot project showed that the questionnaire is sufficient in terms of content and structural validity, except for the human resources management dimension. The Cronbach alpha, which determines the reliability values of the questionnaires, is expected to be at least 0.600 or above. The alpha values of the four sub-dimensions of the questionnaire are between 0.624-0.736. These data show that the survey is reliable (see Table 4 for the Cronbach alpha values).

Data analysis

In this study, the R-based Jamovi Program and SPSS 21 software were used to analyze the data, produce the frequency tables, and then examine whether the data fulfilled normal distribution criteria. We checked the normal distribution of data usage in arithmetic mean, mode, median, skewness, and kurtosis coefficients (Hair et al., 2013). The skewness and kurtosis coefficients of the data being in the range of ± 1.5 indicated that the data were distributed normally (Tabachnick et al., 2007). Then we performed other analyses such as frequency analysis, difference analysis (t-test and One-Way ANOVA), correlation analysis, factor analysis, and reliability analysis.

RESULTS

Descriptive statistics

Based on the data from 320 firms, this selected sample based on firm size is as follows: 56.9% of the firms have 0-49, 35.3% 50-249, 6.6% 250-499, 4% have 500-1000 employees. Hence, based on the distribution of these data, 92.2% of firms consist of SMEs, and 7.8% consist of large firms. Concerning the ownership structure, 65.3% are family firms, and 34.7% are non-family firms. The distribution of firms is based on industries where they operate, 34.1% of the firms are in manufacturing, 47.8% are in services, and 18.1% are in retail industries. In addition, 52.5% of our sample operate in urban areas, whereas 47.5% in rural areas.

Table 1. Demographic indicators (N 320)

Number of employees	**Number of employees**	**Firms incomes during 2020 (in Euro)**	**Firms incomes during 2020 (in Euro)**
0-49	0-49	0-50,000	0-50,000
50-249	50-249	50,001-249,000	50,001-249,000
250-499	250-499	250,001-500,000	250,001-500,000
500-1000	500-1000	500,001-1,000,000	500,001-1,000,000
Ownership type	**Ownership type**	1.000.001 and over	1.000.001 and over
Family firm	Family firm	**COVID-19 influenced our firm (%)**	**COVID-19 influenced our firm (%)**
Non-family firm	Non-family firm	**Income decrease**	**Income decrease**
Industry type	**Industry type**	0-20 %	0-20 %
Manufacturing	Manufacturing	21-40 %	21-40 %
Services	Services	41-60 %	41-60 %
Retail / Wholesale	Retail / Wholesale	61-80 %	61-80 %
Location of firm	**Location of firm**	**Does your firm export?**	**Does your firm export?**
Urban	Urban	No	No
Rural	Rural	Yes	Yes
Year of firm establishment (Mean year)	**Year of firm establishment (Mean year)**	**Do you plan to export?**	**Do you plan to export?**
		No	No
		Yes	Yes

As shown in Table 1, the incomes that firms declared during 2020 are as follows: 26.6% of the companies are between 0-50,000 Euro, 43.1% are between 50,001-249,000 Euro, 22.8%, are between 250,001-500,000 Euro, 6.6% are between 500,001-1,000,000 Euro and 0.9% declared over 1,000,001 Euro. Findings also show that the vast majority of firms (85.9%) declared that COVID-19 influenced their finances negatively. Based on income decrease, findings show that 42.5% declared that their incomes decreased by 0-20%, 30.0% declared their incomes decreased by 21-40%, 23.4% of firms declared their incomes decreased by 41-60%, and 4.1% stated that their incomes decreased by 61-80%. In addition, findings also show that 19.1% are exporting firms while 20.9% of firms plan to export in the near future. However, 80.9% of firms stated that their main market is the domestic market.

Difference analysis of variables

Table 2 shows the difference analysis, and findings suggest that variables that differ significantly in the degree of exposure to COVID-19 are ownership type and income decrease. Findings also show that family firms were affected more than non-family firms ($p < 0.026$) by COVID-19. Based on firm incomes, firms that declared a decrease of incomes of 21-40% during COVID-19 ($p < 0.000$) were the most affected by COVID-19. In addition, findings show no difference between the degrees of exposure of different groups to COVID-19 based on variables such as the exporting firms or firms that plan to export, location, the industry where firms operate, and the number of employees ($p > 0.05$).

Table 2. Difference analysis of variables

Number of employees	**Results (n, %)**	**P-value**
0-49	182 (56.9)	0.293
50-249	113 (35.3)	
250-499	21 (6.6)	
500-1000	4 (1.2)	
Ownership type		
Family firm	209 (65.3)	**0.026**
Non-family firm	111 (34.7)	
Industry type		
Manufacturing	109 (34.1)	0.0526
Services	153(47.8)	
Retail/Wholesale	58 (18.1)	
Location of firm		
Urban	168 (52.5)	0.658
Rural	152 (47.5)	
Does your firm export?		
No	259 (80.9)	0.547
Yes	61 (19.1)	
Do you plan to export?		
No	253 (79.1)	0.447
Yes	67 (20.9)	
How much was your firm incomes during 2020?		
0-50,000 Euro	85 (26.6)	0.326
50,001-250,000 Euro	138 (43.1)	
250.001-500.000 Euro	73 (22.8)	
500.001-1.000.000 Euro	21 (6.6)	
1,000,001 and over Euro	3 (0.9)	

Income decrease		
0-20%	136 (42.5)	**0.000**
21-40%	96 (30.0)	
41-60%	75 (23.4)	
61-80%	13 (4.1)	

Correlation analysis

The factors included in the correlation analysis are management practice, technological preferences, strategic behavior and social network (Table 3). Findings show that there is a weak positive relationship between management practices and firm technological preferences. These findings show that during COVID-19, firms changed their management practices using digitalization to respond to the crisis of COVID-19. Findings also suggest that there is a weak positive relationship between management practices and strategic behavior. A stronger positive relationship is found between technological preferences and strategic behavior. This result shows that firm strategic behavior moved towards employing new technologies as a strategic response to the crisis. In addition, findings show that there is a negative relationship between social networks and management practices.

Table 3. Correlation analysis

		MP	TP	SB	SN
Management practices	Pearson's r	—			
	p-value	—			
Technological preferences	Pearson's r	0.257***	—		
	p-value	< 0.001	—		
Strategic behavior	Pearson's r	0.247***	0.348***	—	
	p-value	< 0.001	< 0.001	—	
Social network	Pearson's r	-0.17**	-0.057	0.013	—
	p-value	0.002	0.31	0.819	—

Note: * p < 0.05, ** p < 0.01, *** p < 0.001; MC: Management Practices, TP: Technological Preferences, SB: Strategic Behavior, SN: Social Network.

Factor analysis

We performed the Kaiser-Meyer-Olkin Measure (KMO) of Sampling Adequacy test and examined p-values to find whether the questionnaire consisting of 29 items was suitable for factor analysis (Table 4). The results show an

acceptable KMO value of 0.732 (Barlett test; and Sig. 000), suggesting the use of explanatory factor analysis. The main components in the questionnaire were analyzed, and items were returned with the varimax method. After this process, four dimensions were obtained with an eigenvalue of 1 or above. These dimensions are named: technological preferences, management practice, strategic behaviour and social network. The total variance extracted from the scale is 57.432%. In social sciences, the range of 40% to 60% is accepted as adequate for total variance extracted (Karagöz, 2017). In this regard also, the scale can be said to satisfy the necessary conditions to be used.

Moreover, factors are determined based on eigenvalue, too. According to the Joliffe criterion, an eigenvalue of not less than 0.7 is acceptable (Karagöz, 2014). In this study, the smallest eigenvalue was found to be 1.254. This shows that the scale has an appropriate factor distribution. 16 statements with factor loadings below 0.45 were eliminated.

Table 4. Factor analysis and explained variance

Kaiser–Meyer–Olkin measure of sampling adequacy			0.732
Bartlett's test of sphericity	Approx. chi-square		961,84
	df		78
	p		0.00
Total variance explained (% 57,432)	Cronbach's alpha		0.737
	Factor load	**Explained variance**	**Cronbach's Alpha**
Technological Preferences (Eigenvalue 3.352)		**24.698**	**0.736**
Accelerated use of digital technologies	0.713		
Forced use of e-commerce	0.645		
Hiring employees with high technological skills	0.548		
Technological choices of the firm	0.547		
Strategic Behavior (Eigenvalue 1.727)		**11.977**	**0.707**
Organizational learning and efficiency	0.694		
The firm responded to the crisis and analyzed the potential challenges in the near future	0.657		
Changing strategies based on customer preferences	0.510		
Changing investment strategies	0.502		
Management Practice (Eigenvalue 1.607)		**11.606**	**0.695**
Communication preferences	0.903		
Managerial changes	0.685		
Decision-making processes	0.459		

Social Network (Eigenvalue 1.254)		9.15	0.624
Social networks helped the firm overcome the challenges	0.991		
Inefficiency of the supplier relations during the pandemic	0.472		

Note: Extraction Method: Maximum Likelihood; Rotation Method: Varimax with Kaiser Normalization; A Rotation converged in five iterations.

The first factor was defined as technological preferences, and accelerated use of digital technologies, forced use of e-commerce, selecting employees with high technological skills, and technological choices of the firm, were the items gathered under this factor. The second factor is identified as strategic behavior (firm-level). Evaluated under this factor were organizational learning and efficiency, the firm responded to the crisis and analyzed the potential challenges in the near future, changing strategies based on customer preferences, and changing investment strategies. The third factor was management practices, including communication preferences, managerial changes, and decision-making processes. Finally, the fourth factor was defined as social networks, which included social networks helped the firm overcome the challenges and inefficient supplier relations during the pandemic items. The first factor explains 24.70% of the variance, the second factor explains 11.98%, the third factor explains 11.61%, and the fourth factor explains 9.15% of the variance. The announced variance with four dimensions was 57.432%. After the results of the factor analysis, 16 items were extracted from the questionnaire.

DISCUSSION

The purpose of this study was twofold; firstly, to examine the impact of COVID-19 on firms in Kosovo, focusing on firm size, industry characteristics and ownership type. Secondly, to examine firm responses to the crisis based on four dimensions: technological preferences, strategic behavior, management practices, and social networks. This study employed a questionnaire, using data from 320 firms in the case of Kosovo.

Regarding the impact of COVID-19 on firms, we analyzed the impact of COVID-19 based on the firm size, industry characteristics, and ownership type. The impact of COVID-19 based on firm size suggests that 92.2% of SMEs reported that their incomes decreased. These findings are in line with previous studies (Pedauga et al., 2021; Stephan et al., 2020; Shen et al., 2020; Krasniqi et al., 2021; Nguyen et al., 2021), suggesting that SMEs are vulnerable to COVID-19 and face challenges to ensure firm survival and sustainability due

to decreased incomes and low performance. It is important to emphasize that SMEs in Kosovo faced constant growth challenges even during the pandemic situation (Krasniqi, 2007) due to the failed attempt of the government to ensure a stable institutional and business environment (Kryeziu & Coşkun, 2018). The pandemic situation has worsened the situation of SMEs and firms from all industries. Findings suggest that, based on the characteristic of industries, all industries have been influenced negatively by the crisis of COVID-19. These findings are not in line with Shen et al. (2020) and Chowdhury et al. (2020), who suggest that COVID-19 influenced particular industries that were more vulnerable to the pandemic situation. The possible explanation on why all industries in the case of Kosovo have been negatively influenced is that industries are not as developed due to the lack of technological capabilities and focus on becoming more competitive in international markets, due to uncertainty in the business environment and a lack of consistent pro-market reforms (Kryeziu & Coşkun, 2018; Krasniqi, 2007).

Based on ownership type, findings suggest that family-owned firms were more negatively influenced by COVID-19 than non-family firms. The explanation is possibly down to the distinct organizational structures that family firms have, family members' decision-making, and control of the family firm (see: Astrachan, 2010; Zahra & Sharma, 2004). As a result, family firms may have found it more challenging to respond to the negative impact of COVID-19 and adapt to new circumstances derived from COVID-19. Furthermore, another explanation may be that the current situation derived from COVID-19 may reinforce the resource constraints of family firms and the danger of losing family socio-emotional wealth. They also suggest that, as a result, family firms may display behavioral changes that may impact their organizational level, such as building new alliances, adopting digital platforms, and increasing the firm's adaptive capacity. These findings also are in line with the current discussion in family business literature (Soluk et al.,2021; De Massis & Rondi, 2020) and support previous studies and show that firm characteristics may be important factors during the recession (Cowling et al., 2015; Bartz & Winkler, 2016).

The second purpose of this study was to examine firm reactions to the crisis derived from the COVID-19 pandemic situation. Findings suggest that the first firm reaction focused on changing technological preferences, accelerating digital technologies, using e-commerce, selecting employees with high technological literacy, and using other technology choices. The use of technologies was typical for all firms, as the social distancing imposed by government restrictions forced firms to react accordingly and respond to customer needs and the source of their survival. These findings support previous studies that suggest that employing technology was the primary

response strategy to the crisis and had positive outcomes (Ahmad et al., 2021; Guo et al., 2020; Kraus et al., 2020; Rapaccini et al., 2020) as firms could respond more quickly to the crisis, and was employed as an exit strategy from the crisis (Guo et al., 2020). Findings also support the study from Rapaccini et al. (2020) that suggests that firms' sales decreased during COVID-19, and in response, firms focused on e-commerce to increase their sales. These findings align with Alves et al. (2020), who suggest that small firms' strategic responses, such as reducing costs, increasing efficiency, and increasing communication with customers, are essential strategic responses of companies in responding to the COVID-19 outbreak situation. In addition, these findings support Foss's (2020) claim that the use of technologies shapes organizational design.

The second firm reaction was strategic behavior as a response to the crisis. Findings suggest that firms focused on organizational learning and efficiency, analyzing the potential challenges in the near future, and changing strategies according to customer preferences combined with changing investment strategies. The possible explanation regarding organizational learning and efficiency, including analyzing challenges in the near future, is related to technological preferences, where firms focus on the digitalization of firms and increasing their efficiency. These responses lead firms to change strategies according to customer needs and change investment strategies. These findings contribute to the literature and show which strategic behavior firms employed to respond to the crisis and supports the literature that the speed of firm reaction was crucial for firm survival during COVID-19 (Castro & Zermeño, 2020; Roper & Turner, 2020). These findings align with Tortorella et al. (2021), who suggest the importance of organizational learning as an essential component of strategic behavior during COVID-19. It is important to emphasize that the change of investment strategies is not directly related to investing in innovation as previous studies suggest (Hanisch & Rake, 2021; Ebersberger & Kuckertz, 2021; Ferrigno & Cucino, 2021), but firms focusing on investing in technological preferences, hence, integrating technological preferences with firm strategic behaviour. Furthermore, another possible explanation of why firms in Kosovo focused on these strategies is that they may lack internal capabilities, financial stability, the lack of internal intellectual capital, and the experience to respond to opportunities in the market.

The response to the crisis through technological preferences and strategic behavior was also reflected in firm management practices, which was the third response to the COVID-19 crisis. Findings suggest that management practices changed by focusing on communication preferences, managerial changes, and decision-making processes. These responses are combined with reactions, as mentioned earlier. For example, digitalization

leads to a change of communication preferences within and outside the firm, the managerial changes needed to build a more effective reactive strategy, and last, this influenced the decision-making process. These findings support previous studies suggesting the importance of change in managerial practices as a firm response to the crisis (Zainal, 2020; Guderian et al., 2021; Kraus et al., 2020). However, although significant, the change in managerial practices was not at an advanced level, such as building a crisis management team and developing plans in detail, as other studies suggest (see Kraus et al., 2020; Rapaccini et al., 2020). The possible explanation is inexperience and the size of firms, namely SMEs, the mindset of doing business, and most importantly, the context where these firms operate.

The last firm reaction was maximizing social networks. Findings suggest that social networks were an essential factor in the response to the crisis. During the crisis, evaluating the extent suppliers was effective and, as a result, old suppliers were replaced with new ones to respond more effectively to the crisis. These findings contribute to the literature and show the vital role of social networks during COVID-19 (Kuckertz et al., 2020; Sharma et al., 2020; Fath et al., 2021). These findings align with scholars suggesting that firms restructured their relationship with suppliers (Chowdhury et al., 2020; Sharma et al., 2020), and these relations may help the firm build new business transformations (Fath et al., 2021).

CONCLUSION

Policy implications

Several policy implications derive from this study. The policy implication is related to the negative impact that the COVID-19 crisis had on family firms compared to non-family firms and SMEs in general. Family firms comprise a vital contribution to the world's economy (La Porta et al., 1999; Rovelli et al., 2021), including SMEs. A drastic decrease in income in family firms and SMEs directly influences their cash flow, which influences their relations with their suppliers. Therefore, when designing policies, policymakers need to focus on firms' liquidity problems and provide policies such as tax delays, incentives, grants, and loans favorable for firms.

The ability of firms to react to the crisis through new management practices, employing new technologies, and strategic behavior is promising that firms could cooperate with relevant institutions and coordinate their activities to overcome the impact of the COVID-19 crisis. Hence, the government needs to build effective communication with the private sector,

analyze their current situation, focus on the latest data, and recommend policies accordingly. In addition, according to this study's findings, the use of digital technologies in firms has increased due to the COVID-19 crisis. Therefore, policymakers can support these firms through policies to increase advanced technologies and help firms change their business models.

Another policy implication is related to lessons learned and how firms changed their behavior accordingly. The communication between policymakers and the private sector may increase the speed of overcoming the crisis and offer more tailor-made policies for SMEs in the post-pandemic world. This cooperation between policymakers and the private sector is crucial as 80.9% of firms in our study depend on the domestic market. Therefore, designing policies to promote exports on the one hand, and increase the buying power of customers on the other, may help the country lower the negative impact of the pandemic in the national economy in the shorter term.

Managerial implications

Three primary common responses characterize firms: changing investment strategy, focusing on digitalization, and the inadequacy or inefficiency of existing supplier relationships. The first managerial implication concerns investment strategies. An essential reaction in the short term may prove to be a 'backlash' for firms in the medium and long term. For this reason, managers need to focus on the medium and long term and make decisions accordingly. The second managerial implication is the digitalization of firms. We advise managers to use the company's digitalization as the first step and increase their efforts towards innovation, considering the demand in the domestic and foreign markets by developing existing products or designing new ones after the pandemic. The third managerial implication concerns social networks. In addition to developing supplier relationships that will increase their innovation capabilities after the pandemic, managers should focus on developing crisis-resistant, trust-based and efficient supplier relationships in the medium and long term.

Limitations and future suggestions

The study contributes to the entrepreneurship and SME literature by investigating the entrepreneurial reaction during the COVID-19. However, it has several limitations. The first limitation is related to the survival bias. The study does not capture the bankrupt firms during the crisis or due to the crisis (Lajqi & Krasniqi, 2017; Krasniqi, 2010). Second one, given that the pandemic is lasting, we still do not know the overall effect on firms and the economy.

The third limitation, methodologically, stems from the use of a cross-sectional study method. Cross-sectional studies reveal the current status of the investigated phenomenon by collecting data on research variables at once (Jap & Anderson, 2004; Podsakoff et al., 2003). This data collection technique does not examine the longitudinal changes and developments in the cases studied (Rindfleisch et al., 2008). However, the uncertainty and problems in the COVID-19 process make a longitudinal study especially difficult. The closures that businesses experienced in specific periods made the data collection process very limited. Therefore, it was preferred to conduct cross-sectional research to reveal the current situation and present a roadmap to policymakers and businesses.

Despite limitations, the study stimulates the discussion and opens the way for future studies. Future studies should consider examining the impact of the pandemic in other contexts, allowing heterogeneity of institutional settings and policy responses to crises to be brought into the discussion. A second, future suggestion is related to the digitalization of firms and how firms changed their organizational structures and management practices accordingly. This is particularly important in family firms with family members' involvement and the extent to which family members are willing to change previous managerial practices and organizational structure. A third, future suggestion is related to social networks where, as shown in this study, firms did not expect suppliers support and, hence, searched for new suppliers to adapt to the crisis of COVID-19. Therefore, it would be interesting to expand on this and investigate whether firms changed their logic of selecting social networks and focusing on knowledgeable and experiential networks to help the firm become innovative. Our last, future suggestion relates to methodology, in that we would recommend the examination of case studies to show firm reactions longitudinally.

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Abstrakt

CEL: *Nowa sytuacja wynikająca z pandemii COVID-19 przyniosła firmom na całym świecie wiele trudności. Aby zwalczyć pandemię, rządy wprowadziły blokadę i zamykanie przedsiębiorstw, a w odpowiedzi firmy opracowały różne strategie reagowania, aby zapewnić sobie przetrwanie. Cel tego badania jest dwojaki: zbadanie wpływu COVID-19 na firmy i zbadanie ich reakcji na kryzys COVID-19. Ponadto analiza wpływu COVID-19 na wielkość firmy, rodzaj własności i charakterystykę branży oraz reakcje firm w oparciu o cztery elementy: preferencje technologiczne, zachowania strategiczne, praktyki zarządzania i sieci społeczne.* ***METODYKA:*** *Niniejsze badanie wykorzystuje metodę ilościową z wykorzystaniem ankiety przeprowadzonej w Kosowie przez Instytut Przedsiębiorczości i Małego Biznesu wśród 320 właścicieli i menedżerów firm.* ***WYNIKI:*** *Ustalenia sugerują, że w oparciu o wielkość firmy dochód w przypadku MŚP znacznie spadł. Na podstawie cech branżowych wyniki pokazują, że wszystkie branże zostały dotknięte negatywnym wpływem. Jeśli chodzi o rodzaj własności, ustalenia sugerują, że firmy rodzinne są bardziej dotknięte przez COVID-19 niż firmy nierodzinne. Analiza czynnikowa sugeruje, że preferencje technologiczne, praktyki menedżerskie i zachowania strategiczne oraz sieci społeczne skutecznie zareagowały na kryzys wywołany przez COVID-19. Wyniki sugerują również, że firmy nie zastosowały jednej reakcji (np. zmiany technologicznej), ale połączyły kilka reakcji, w których jedna reakcja doprowadziła do innej, która okazała się skuteczna i doprowadziła do przetrwania firmy podczas kryzysu.* ***IMPLIKACJE:*** *Po pierwsze, badanie to analizuje wpływ COVID-19 i jednocześnie stanowcze reakcje na kryzys. Po drugie, w przeciwieństwie do poprzednich badań, niniejsze badanie pokazuje, że wszystkie branże zostały dotknięte negatywnym wpływem, w tym wszystkie MŚP. Po trzecie, badanie to pokazuje, że rodzaj własności był ważnym czynnikiem wpływu COVID-19, gdzie firmy rodzinne były pod większym wpływem niż firmy nierodzinne; wynika to z wyraźnej charakterystyki struktury organizacyjnej firm rodzinnych, w tym zaangażowania członków firm rodzinnych. Wreszcie, badanie to pokazuje, że pojedyncza reakcja firm nie prowadzi do przetrwania, ale łańcuch reakcji w połączeniu z przedstawionymi powyżej wymiarami.* ***ORYGINALNOŚĆ/ WARTOŚĆ:*** *Pomimo rosnącej literatury teoretycznej i empirycznej na temat COVID-19 i firm, badanie to pokazuje wpływ i stanowczą reakcję na kryzys związany z COVID-19. Ponadto, koncentrując się na kontekście Kosowa, badanie przyczynia się do wyzwań, przed jakimi stają firmy w różnych kontekstach kulturowych i instytucjonalnych.*

Słowa kluczowe: *wpływ COVID-19, reakcje firm, preferencje technologiczne, zachowania strategiczne, praktyki zarządzania, sieci społeczne.*

Biographical notes

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Conflicts of interest

The authors declare no conflict of interest.

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