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Social capital and digital transformation of startups in Vietnam: the mediating role of access to resources

1. Introduction

The main demands for digital transformation in the Fourth Industrial Revolution include the application of digital technologies such as artificial intelligence, blockchain, IoT, and big data to improve production efficiency and enhance business competitiveness, increase customer convenience and experience, and improve labor productivity. Vietnam's economy will have a challenging year in 2021 as a result of the negative effects of the Covid-19 outbreak. In 2021, the number of Vietnamese enterprises suspending operations is 79,700, the bankruptcy rate increased by 25.5% compared to 2020 (Nguyen Van, 2021). The Government of Vietnam has enacted a number of policies to modernize, revolutionize, and enhance the business environment in order to assist firms in emerging from the crisis. Faced with that circumstance, some firms reacted to the Covid-19 outbreak by educating staff members in digital competencies, using automation strategies, and identifying

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new supply networks. Startups aiming for digital transformation must first establish a foundation for it and then work towards developing a digital platform. According to a report by the World Bank (2020) on Vietnam, up to 58% of Vietnamese businesses have already made the transition to digital platforms (The Lam, 2021). The company administration, marketing, payment options, sales, and production planning are the areas of digital platforms that are most commonly employed in firms. Actually, Vietnamese businesses are still transforming digitally at a moderate pace in general. Lack of technological know-how, a lack of funding to invest in digital platforms, and managers' ignorance of the digital transition are just a few of the causes that might be cited. They are significant obstacles preventing Vietnamese firms from going digital. Moreover, in the initial stages of operation, startups lack operational resources and with the negative impact of Covid-19, startups face many challenges and are at high risk of bankruptcy. So, the research question is: how can startups digitally transform themselves to adapt to the challenges of the Covid-19 pandemic?

The topic of corporate digital transformation has garnered interest from scholars worldwide. Small and medium enterprises (SMEs) utilize digital transformation to drive business model innovation and enhance their operations (Bouwman, Nikou, & de Reuver, 2019). Information technology capabilities also play a crucial role in achieving operational outcomes through the mediating effect of digital transformation (Nwankpa & Roumani, 2016). Digital transformation presents opportunities for modernization and entrepreneurship (Nambisan, Wright, & Feldman, 2019). Entrepreneurial human capital contributes to business model innovation by facilitating access to resources (Tran Nha Ghi, Nguyen Thi Phuong Anh, Nguyen Quang Thu, & Ngo Quang Huan, 2021). SMEs undergo digital transformation through various means such as support from digital platforms, innovative management practices, development of managerial social capital, team building, and building organizational capacity (Li, Su, Zhang, & Mao, 2018). The analysis above demonstrates that startups have adopted digital transformation. Since most startups are understaffed and have few resources in the beginning, the network of manager relationships allows firms to undergo a digital transformation by providing resources that are easily accessible. There is, however, a dearth of studies that explain how entrepreneurs' social capital contributes to the digital transformation process. Furthermore, scholars have not yet paid sufficient attention to the function that social capital plays in facilitating access to resources in order to promote digital transformation.

Previous research has utilized theories such as human resource theory (Nwankpa & Roumani, 2016), dynamic capacity theory, and organizational capacity theory (Li, Su, Zhang, & Mao, 2018) to explain how firms' internal resources can support digital transformation. However, the theory of social capital has not been sufficiently emphasized in explaining the development of external resources that support digital transformation, particularly in transitional economies such as Vietnam. To address this research gap, the current investigation was conducted, which highlighted the importance of managers' social capital in accessing resources that facilitate digital transformation in startups. Two major contributions are made by this work. The first contribution looks at how social capital, resource availability, and digital transformation of entrepreneurs in Vietnam are now related. The second is to examine the mediating role of resources available to startups in Vietnam while they undergo a digital transition.

2. Theoretical basis and research model

2.1. Social capital

Social capital is the network of relationships that provide beneficial resources to people or groups (Dakhli & De Clercq, 2004). According to Nahapiet and Ghoshal (1998), social capital refers to the combined amount of real and potential resources that one can access through their network of relationships. Social capital has been explored at many levels such as individual (Burt, 1992), organizational (Nahapiet & Ghoshal, 1998), and social (Serageldin & Dasgupta, 2001). Social capital is discussed at the individual level in this study. Social capital is described at this level as the assets connected to one's relationships with others. Actual or potential benefits can be accrued from formal and informal networks of relationships with others (Burt, 1992). Businesses can access tangible and intangible resources through connections with others (Lin, 2002). Entrepreneurial social capital aids entrepreneurs in recognizing opportunities, efficiently utilizing resources, and making optimal decisions (Landry, Amara, & Lamari, 2002). Social capital is a limited social resource present within the network of entrepreneurial relationships. It is not static, but rather has a cumulative effect (Moran, 2005). Rahayu, Suwanto, Anantanyu, and Sugiharjo (2022) entrepreneurs' personal capital plays a crucial role in the survival and growth of enterprises.

2.2. Access to resources

The way individuals view resources varies based on their social capital. According to resource theory, resources encompass all types of tangible and intangible assets, including but not limited to finances, raw materials, labor, technology, and organizational resources (Barney, 1991). Accessible resources are obtained depending on the individual's position in the network. Ju, Zhou, and Wang (2019) have recognized that networks can provide access to various resources, such as finance, materials, technology, and human capital. As a result, new businesses often need to depend on external resources in order to establish themselves and expand successfully. Startup resources encompass a range of factors, including access to financial capital, knowledge, information, and potential partners (Semrau & Werner, 2014), information/knowledge, new partners and financial support (Nguyen Thi Thuy Quynh, Tran Nha Ghi, & Nguyen Tan Trung, 2023; Tran Nha Ghi, Nguyen Thi Phuong Anh, Nguyen Quang Thu, & Ngo Quang Huan, 2021).

2.3. Digital transformation

Digital technologies are changing business models and reinvesting in organizations (Pagani, 2013; Serageldin & Dasgupta, 2001). The term "digital transformation" describes the alterations and adjustments fueled by the basis of digital technology. To keep up with the evolving market, companies must undergo digital transformation. This involves transitioning their organization to effectively utilize big data, analytics, cloud computing, mobile technologies, and social media platforms. This transformation is built upon digital technology and includes changes to business operations, processes, and value creation (Libert, Beck, & Wind, 2016). According to Libert and colleagues (2016), the use of digital technology can enhance the effectiveness of business procedures within organizations. The digital transformation uses digital technology to revamp business operations, create value, and develop new digital products. By embracing digital transformation, companies can incorporate digital technology into various operations and use digital innovation to engage with customers effectively (Weill & Aral, 2007). Companies that have successfully undergone digital transformation are better equipped to generate revenue with their current resources (Westerman, Bonnet, & McAfee, 2014). According to Verhoef et al. (2021), digital transformation goes beyond just adding digital components to products or services. It involves fully embracing new business models and digital platforms.

2.4. Research hypothesis development

2.4.1. Social capital and digital transformation

In volatile business environments, businesses will rely on managers' social capital (Powell, Staw, & Cummings, 1990). In an economy that is going through a period of transition, characterized by weak institutions and laws, and limited public access to information, the social capital of managers becomes crucial. This is because managers with strong social networks and connections can use them to access resources and information that may not be available to the public (Peng & Luo, 2000). Thus, unincorporated startups are compelled to depend on connections with entities such as government authorities, corporate associates, and social networks (Peng & Luo, 2000), state-owned enterprises (Tsang, 1996). Nguyen, Weinstein, and Meyer (2005) argued that relationship networks play an important role in the transition economy. Relationship networks can provide a number of support resources to help businesses survive and develop (Adler, 2002; Hoang & Antoncic, 2003). Startups with strong linkages to government institutions will have easy access to data on strategies for improving digital skills, digital leadership for leaders, and IT capabilities. In order to ensure a fruitful digital transformation, it is imperative to have the appropriate information technology capabilities established (Aral & Weill, 2007; Mithas, Tafti, & Mitchell, 2013). Companies develop IT capabilities to enhance digital transformation across their products, services, and value chain activities (Galante, Moret, & Said, 2013). Enterprises build information technology capabilities that enable higher digital transformation in products, services, and other activities in the value chain (Galante, Moret, & Said, 2013). Businesses with outstanding IT capabilities can create digital transformation by redesigning existing business processes and transforming traditional products and customer services into technical digital services (Nwankpa & Roumani, 2016). Businesses need to have digital management staff, financial means to invest in digital platforms, and digital capabilities to successfully implement digital transformation. Businesses will easily access information and tools to help their digital transformation thanks to managers' social capital. On that basis, hypothesis H1, H2, H3 are proposed:

Hypothesis H1: "Social capital is positively related to digital transformation."

Hypothesis H2: Social capital is positively related to access to resources.

Hypothesis H3: Access to resources is positively related to digital transformation.

2.4.2. The mediating role of access to resources between social capital and digital transformation

In order to undergo digital transformation, startups often need significant support from external resources. In the early stages of their operation, startups typically don't have enough operational resources (Tran Nha Ghi et al., 2021). Moreover, startups' access to resources for digital transformation is much more constrained during the crisis time brought on by the effects of the Covid-19 outbreak. According to Li, Su, Zhang, and Mao (2018), small and medium enterprises face limitations in terms of resources and capacity when it comes to digital transformation. Therefore, having access to support resources through managers' relationships with key stakeholders including governmental bodies, nonprofits, and digital service providers is crucial. As a result, readily available resources enable digital transformation. There are various types of accessible resources, such as information, financial resources, and other resources that can be helpful (Le & Nguyen, 2009; Le, Venkatesh, & Nguyen, 2006; Semrau & Werner, 2014; Tran Nha Ghi et al., 2021). As a result, it is anticipated that access to resources will serve as a mediator between social capital and digital transformation. Hypothesis H4 is proposed:

Hypothesis H4: Access to resources mediates the positive relationship between social capital and digital transformation.

Based on the above point of view, the research model is suggested at figure 1.

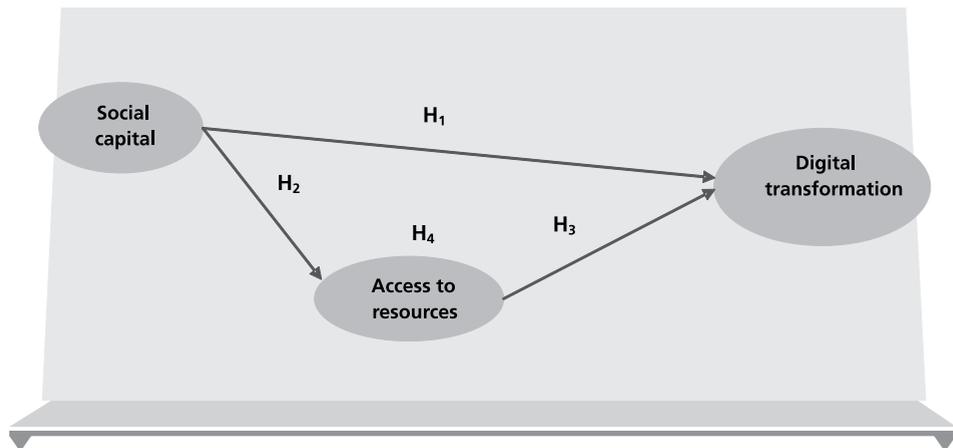


Figure 1. Proposed research model

Source: own study

3. Research methods

3.1. Research process

The research employed a combination of preliminary, qualitative, and quantitative techniques. Specifically, online interviews were conducted with a panel of nine experts who serve on the board of directors, enabling both qualitative and preliminary quantitative research to be carried out. Interviews with each expert were utilized to calibrate the scale employed in this study so that it was appropriate for the research environment. The scale is then put to the test with 115 directors from the companies to determine its validity and reliability.

The study utilized quantitative research methods to test its hypotheses, employing a bootstrapping procedure with a sample size of $N = 5000$. We evaluated both the measurement and structural models through various tests, including convergent validity, discriminant validity, scale and composite reliability. The structural model was also tested for the coefficient of determination (R^2), predictive relevance (Q^2), and effect size (f^2).

3.2. Scale measurement

In the research model, three key concepts are considered: social capital, resource access, and digital transformation. To measure social capital, we use a scale developed by Peng and Luo (2000) which consists of four observed variables. The scale for access to resources is based on previous studies by Semrau and Werner (2014) and Tran Nha Ghi et al. (2021). Digital transformation is measured through three observed variables derived from Weill and Aral (2007). To score the questionnaire items, we use a five-point scale ranging from strongly disagree (1) to strongly agree (5).

3.3. Research sample

The study examined various digital technologies, such as big data, analytics, cloud, mobile, and social media platforms, that were utilized by businesses. The observational units comprised the board of directors, including directors and deputy directors, of the corporations being investigated. Google forms were utilized to obtain the official research sample through online surveys conveniently. Before sending the survey questionnaire to a personal email

account, the author obtained consent from the board of directors through an aggressive approach. According to the online survey's findings, there are 230 genuine respondents overall. As a result, 230 observations were used as the study's official sample. To evaluate the data for the study, partial least squares structural model (PLS-SEM) was employed. Given its ability to handle small sample sizes and non-normally distributed data, this method should be employed in the current study (Hair, Hult, Ringle, & Sarstedt, 2016).

4. Results

4.1. Sample characteristics

The 230 observations that make up the research sample are from the boards of directors of companies in Vietnam. According to the kind of operation, there are 67 private businesses (29%) limited liability companies (58%) joint stock companies (71%) and 34 (15%) other types of businesses. There are 52 (29%) startups in the service industry, 81 (35%) in the manufacturing sector, and 97 (42% of all startups) functioning in the commercial sector. According to labor size, there are 15 companies that employ less than 10 people (7%), 65 that employ between 11 and 30, 105 that employ between 31 and 50, and 45 that employ between 54 and more. There are 118 female respondents (51%) and 112 male respondents (49%) to the study. 82 respondents (36%) have an undergraduate degree, 117 (51%) have a university degree, and 31 (13%) have a postgraduate degree.

4.2. Scale evaluation

The AVE values for all scales used in the model, along with the results of reliability tests using Cronbach's alpha and composite reliability (CR), can be found in the table 1. The scales demonstrated values of Cronbach's alpha (α) and composite reliability that exceeded the minimum threshold values: $\alpha_{AR} = 0.721$; $\alpha_{DT} = 0.839$; $\alpha_{SC} = 0.854 > 0.6$ and $CR_{AR} = 0.842$; $CR_{DT} = 0.903$; $CR_{SC} = 0.901 > 0.7$ (Hair Jr, Black, Babin, & Anderson, 2019). The scales' average extracted variances (AVE) are all greater than 0.5 ($AVE_{AR} = 0.640$; $AVE_{DT} = 0.755$; $AVE_{SC} = 0.695$). These findings confirm the validity of all scales using the criteria of Hair Jr et al. (2019). The findings also demonstrate that all items' factor loadings are higher than 0.7. Therefore, from the views of Hair Jr et al. (2019), all items satisfy the convergent validity.

Table 1. Measurement items

Constructs and items	Mean	SD	Standardized loading
Access to resources (AR): Cronbach's Alpha (CA): 0.721, composite reliability (CR): CR = 0.842; average variance extracted (AVE) = 0.640			
I have received financial support from start-up support organizations to invest in digital platforms (AR1)	2.578	0.845	0.845
I have received relevant information/knowledge about digital transformation from start-up support organizations (AR2)	2.617	0.919	0.819
I have been introduced to business partners providing digital services (AR3)	2.678	0.992	0.732
Digital Transformation: CA = 0.839; CR = 0.903; AVE = 0.755			
We are implementing new business processes that rely on digital technologies, including big data, analytics, cloud, mobile, and social media platforms (DT1)	3.517	0.959	0.887
We are incorporating digital technologies, such as social media, big data, analytics, cloud, and mobile technologies, to facilitate change within the organization (DT2)	3.465	1.003	0.851
Our business is moving to use digital technologies such as big data, analytics, cloud, mobile and social media platforms (DT3)	3.522	0.986	0.869
Social capital: CA = 0.854; CR = 0.901; AVE = 0.695			
We have built close relationships with buyers (SC1)	3.678	1.026	0.834
We have built close relationships with digital service providers (SC2)	3.683	0.932	0.824
We have built close relationships with our competitors (SC3)	3.548	0.985	0.835
We have built close relationships with levels of Government agencies (SC4)	3.470	0.917	0.841

Source: own study

Table 2 presents the results of the discriminant validity test conducted by Fornell and Larcker (1981) on the constructs. The test revealed that the square

root of the average variance extracted (AVE) for each construct was more significant than its correlations with other constructs, thereby confirming the validity of the measures.

Table 2. Fornell – Larcker criterion

	Mean	SD	Digital transformation	Access to resources	Social capital
Digital transformation	3.501	0.983	0.869		
Access to resources	2.624	0.919	0.340	0.800	
Social capital	3.595	0.965	0.523	0.321	0.834

Source: own study

Figure 2 displays the model estimation outcomes using the Bootstrapping approach with 5000 samples.

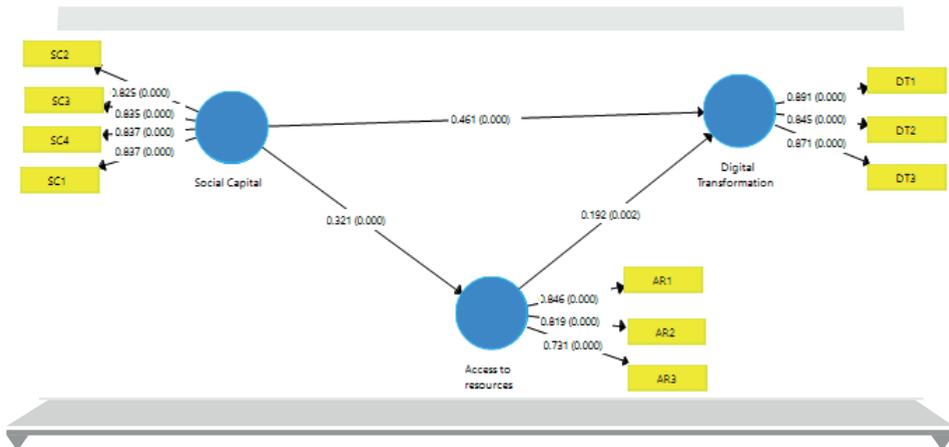


Figure 2. Model estimation results

Source: own study

The test results for the theoretical model are shown in Table 3. R^2 and Stone-Geisser (Q^2) values are used to assess the quality of the suggested model. The coefficient of determination ($R^2_{DT} = 0.30$) which is above 0.26 and according to Cohen (2013) is considered strong. The value for Stone-Geisser ($Q^2_{DT} = 0.221$) ranged between (0.02; 0.35), indicating that the model's prediction level is moderate (Chin, 2010). Additionally, Henseler, Ringle, and Sinkovics (2009) determined that the strength of impact (f^2) between the components, which varied between (0.02, 0.35), is moderate.

Table 3. Hypothesis testing

Hypothesis	Description of path	β	Bootstrapping	SD	t	Confidence Intervals	P-value	VIF	Conclusion
Direct effect									
H1	SC → DT	0.461	0.462	0.067	6.908	[0.321; 0.585]	0.000	1.115	Supported
H2	SC → AR	0.321	0.327	0.059	5.443	[0.207; 0.436]	0.000	1.000	Supported
H3	AR → DT	0.192	0.194	0.060	3.176	[0.074; 0.308]	0.002	1.115	Supported
Indirect effect									
H4	SC→AR→DT	0.062	0.063	0.022	2.742	[0.023; 0.111]	0.006		Supported
R^2_{DT}		0.103							
f^2		$f^2_{AR \rightarrow DT} = 0.048$; $f^2_{SC \rightarrow AR} = 0.275$; $f^2_{SC \rightarrow DT} = 0.275$							
Stone-Geisser's Q^2		$Q^2_{AR} = 0.063$; $Q^2_{DT} = 0.221$							

“ *** $p < 1\%$, ** $p < 5\%$, * $p < 10\%$ ”

Source: own study

The study found that hypothesis H1, which proposed a positive relationship between social capital and digital transformation, was supported by a statistically significant coefficient ($B = 0.462$; $p = 0.000 < 0.01$). Similarly, hypothesis H2, which suggested a positive correlation between social capital and access to resources, was also supported by a significant coefficient ($B = 0.327$; $p = 0.000 < 0.01$). Additionally, the study found a positive correlation between access to resources and digital transformation, supporting hypothesis H3 ($B = 0.194$; $p = 0.001 < 0.01$).

The study found that social capital has an indirect effect on digital transformation through the mediating channel of resources access, with a coefficient of 0.15 (SE = 0.022, $p < 0.01$). The results of the bootstrapping analysis revealed a 95% confidence interval (CI) ranging from 0.023 to 0.111, which did not include zero, thus providing further support for hypothesis H4 that proposed a mediating relationship between social capital and digital transformation through the path of resources access.

Past research has indicated that access to resources is primarily facilitated through social networks (Ju, Zhou, & Wang, 2019), as well as network size and relationship quality (Semrau & Werner, 2014). Additionally, the human capital of managers can also assist in obtaining external support resources for businesses, according to a recent study by Tran Nha Ghi et al. (2021). In this study, managers' social capital provides access to outside resources that assist startups in digitally transforming to be appropriate for the market setting during the Covid-19 epidemic's emergence. Startups must adapt their business strategies in the face of the Covid-19 epidemic's negative effects, and digital transformation is the best way for them to reach markets and customers when direct contact with partners and customers is difficult. However, with startups' limited resources and competencies, digital transformation is difficult to achieve. The social capital of managers is crucial to the digital revolution, meanwhile. Startups can easily acquire external assistance resources thanks to social capital. Project 844/QD-TTg states that new firms are qualified for assistance. Additionally, due to the effects of the Covid-19 pandemic, support is given to startups. In actuality, there are still few ways to access these auxiliary materials. Consequently, social capital is crucial for gaining access to resources and accelerating digital transformation.

5. Conclusion

The study used the social capital theory to explain how entrepreneurs might leverage outside resources to support their digital transformation. Startups have access to external resources through social capital, which is a significant factor in the digital change that has occurred since the Covid-19 epidemic started. The findings of the study demonstrate that in a market in transition like Vietnam, the test results support the theories put out in the theoretical model. Both theoretical and practical contributions have been made in this study.

5.1. For theoretical aspect

The primary aim of the study was to examine how social capital and access to resources affect the digital transformation of startups in a transitioning economy, with a focus on Vietnam. The relationships mentioned above are recognized and statistically significant. Research findings refute Li et al (2018) claim that digital transformation depends on managers building their social capital because small and medium-sized businesses have scarce capability and resources. Establishing relationships with various stakeholders can be an effective development strategy for start-up businesses in their early stages due to their limited operational resources and capacity. This is especially true in developing economies (Nguyen et al., 2005; Peng & Luo, 2000). Startups may readily obtain resources to create digital platforms for businesses thanks to social capital. Access to outside resources is crucial for firms undergoing a digital transformation.

The study presented a new angle by investigating how access to resources affects the relationship between social capital and digital transformation. This is an area that hasn't been studied much before. The study found that access to resources plays a crucial role in speeding up the digital transformation of startups. The mediating effect was significant, with a $B_{\text{indirect}} = 0.063$.

5.2. For practical aspect

The study's findings have applications for businesses and organizations. Startups must comprehend how social capital contributes to the development of a network of stakeholders and easy access to resources that enable digital transformation. Startups must establish strong networks of relationships with all relevant parties, including the government, consumers, rival businesses, and digital suppliers. Managers' social capital is increased as a result of this network of ties, facilitating simpler access to resources. Startups must actively watch and participate in various government-sponsored training programs for digital transformation in order to acquire training to advance their digital capabilities and skills. Business executives must also develop a digital transformation identity, test it, and be aware of and accountable for it if they want to see a robust digital transition. Businesses need to establish digital infrastructure like IoT, 5G network, electronic payment system, etc. on a platform filled with knowledge, skills in information technology, and resources from external supporting organizations. Startups must assess research projects, work together on them, and create and innovate in the digital business environment.

5.3. Research limitations and further research directions

The study's survey sample includes companies that work in a variety of industries, so it was unable to determine the specifics of each one. Each industry type will be affected by digital transformation, but the engineering, high technology, and information technology sectors will need it the most out of all. Therefore, additional research is required to confirm the aforementioned links for certain business sectors.

According to human capital theory, external resources are formed to support the development of human capital (Tran Nha Ghi et al., 2021). The theory of social capital is applied in the study to describe how external supporting resources are created, made accessible, and how to enhance human capital to enable digital transformation. Businesses also require personnel with information technology skills to support the digital transition (Nwankpa & Roumani, 2016). To help businesses adapt to the challenges posed by the Covid-19 outbreak, the most effective approach is through digital transformation. Therefore, it's essential to evaluate the impact of digital transformation on the creation of new business models and the progress of startups in developing economies in the studies that follow.

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Abstract

The purpose of this study is to use social capital theory to explain how startups in Vietnam undergo the digital transformation process. The study investigates the connection between social capital, resource access, and digital transformation in Vietnamese startups. 230 managers were analyzed using the Partial Least Squares Structural Model (PLS-SEM). The study found a positive correlation between social capital, resource access, and digital transformation. Additionally, the study looked at the role of resource access as a mediator between social capital and digital transformation. The findings of this study hold immense importance for managers seeking to establish social capital with stakeholders, including government agencies, customers,

competitors, and suppliers in the digital platform services industry. Leveraging social capital can increase managers' access to crucial resources, especially during the Covid-19 pandemic. The study acknowledges its limitations and identifies areas for future research.

Keywords: *Social capital, Access to resources, Digital transformation.*

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Classification: M13, M15.

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