

Corporate social responsibility and firm performance in the financial industry in Vietnam: The mediating role of digital transformation

 Luu Xuan Danh¹,  Nguyen Thanh Long^{2*},  Tran Dang Khoa³

^{1,2}Industrial University of Ho Chi Minh City, Ho Chi Minh City 700000, Vietnam.

³Institute of Business Research, University of Economics Ho Chi Minh City 700000, Vietnam.

*Corresponding author: Nguyen Thanh Long (Email: nguyenthlanhlong@iuh.edu.vn)

ABSTRACT

Purpose: This study evaluated the influence of corporate social responsibility (CSR) initiatives undertaken by banks in Vietnam on their overall performance. Additionally, it sought to examine the relationship between corporate social responsibility and digital transformation efforts within the framework of the ongoing Fourth Industrial Revolution.

Design/Methodology/Approach: The research uses a survey sample from Southeast Vietnam, specifically Binh Duong Province, Dong Nai Province, Tay Ninh Province, Ba Ria Vung Tau Province and Ho Chi Minh City. A total of 245 valid questionnaires were gathered from mid- and senior-level executives, senior employees and department heads who have implemented digital transformation strategies in banks.

Findings: This study explores the relationship between corporate social responsibility and firm performance in Vietnam's financial industry focusing on the banking sector. The study discovered a favourable relationship between corporate social responsibility (CSR) and enterprise digital transformation as well as a good relationship between CSR and digital transformation and Vietnamese banks' business success.

Conclusion: The digital economy has increasingly contributed to global economic development. Today's digital landscape is undergoing a widespread phenomenon known as digital transformation. Hence, it is crucial to examine the impact of digital transformation on business processes.

Practical Implications: The data also supports the idea that digital transformation serves as a mediator between corporate CSR and financial performance contributing to filling the gap when there is limited research in Vietnam on this relationship.

Contribution to the Literature: This research aims to help banks in Vietnam enhance operational efficiency when banks actively engage in CSR and digital transformation.

Keywords: Banking sector, CSR, Digital transformation, Financial industry, Firm performance, Mediating roles, Vietnam.

1. INTRODUCTION

The profound fusion of digital transformation (DT) with the present economy has emerged as a prominent and unavoidable tendency in the contemporary technological revolution. Digital transformation is a term used to describe the process by which firms use digital technology to enhance their value creation (Dehning, Richardson, & Zmud, 2003; Xie, Chen, Boadu, & Tang, 2022). Companies often undertake digital transformation to attain a competitive advantage as it can lead to increased profits, improved competitiveness, enhanced flexibility and better services provided. This has been supported by various studies (Ferreira, Fernandes, & Ferreira, 2019; Philippart, 2022; Singh, Sharma, & Dhir, 2021; Sultana, Akter, Kyriazis, & Wamba, 2021).

Prior research has determined that digital transformation generally yields favorable effects on firm performance (FP). However, there remain discrepancies arising from three primary concerns. Most studies on digital transformation have been carried out within the context of advanced economies. According to Chouaibi, Festa, Quaglia, and Rossi (2022) in-depth academic research is essential to fully understand how digital transformation

affects organizational performance in developing countries. The limited technological, organizational and resource capacities of enterprises in underdeveloped nations hinder their ability to generate value through digital transformation (Li et al., 2022). Hence, there is a growing demand for a more comprehensive and meticulous theoretical and empirical comprehension of enterprises in emerging economies like Vietnam. Furthermore, several studies have made a distinction between the immediate and prolonged effects on a company's performance when analyzing the influence of digital transformation. When examining the effects of various digital transformation projects, several researchers have stated that it is crucial to distinguish between immediate performance and long-term value because there are both immediate and prolonged periods. Collectively, these factors can provide contradictory outcomes with respect to digital transformation (García-Cabrera, García-Soto, & Nieves, 2021; García-García, García-Canal, & Guillén, 2017). There is still a lack of comprehensive understanding and implementation of this process despite the abundance of evidence supporting the necessity of digital transformation for organizations in today's digital era (Gavetti, Levinthal, & Rivkin, 2005; Vial, 2019; Volberda, Khanagha, Baden-Fuller, Mihalache, & Birkinshaw, 2021). Vial (2019) highlights the imperative of including ethical concerns in the process of digital transformation. Additional research should provide guidance to facilitate the advancement and execution of digital transformation while also ensuring that the pursuit of immediate objectives does not undermine the production of long-term value. Nevertheless, the precise influence of corporate social responsibility on the efficacy of digital transformation remains uncertain. Prior research acknowledges the impact of corporate social responsibility on enhancing company performance (Fiaschi, Giuliani, & Nieri, 2017; Hawn & Ioannou, 2016; Muller, 2020). However, there is currently a restricted quantity of research investigating the crucial role of CSR in digital transformation. We propose that CSR independently exerts a significant impact on companies, enabling them to generate greater value through digital transformation. Hence, we offer an in-depth and all-encompassing comprehension of how CSR contributes to the generation of value using targeted digital transformation strategy activities.

This research aims to enhance the existing literature on corporate social responsibility, particularly within the given framework of the ongoing digital transformation of the financial industry. Digital banking has emerged as a crucial component of numerous banking business strategies. Banking ecosystems are emerging. A typical banking ecosystem comprises three tiers of services: Core banking services encompass fundamental offerings such as payment processing, credit facilities, investment management and commercial finance. Banking ecosystems encompass a range of services, including expenditure management, education, discounts, accounting and tax administration. Non-banking ecosystems encompass several sectors such as healthcare, housing, telecommunications and securities. In Vietnam, the banking sector primarily emphasizes core banking services together with a variety of supplementary financial services from banking ecosystems. Notably, leading banks in digital transformation, including Vietcombank, Bank for Investment and Development of Vietnam (BIDV), VietinBank, VPBank, TechcomBank and TPBank have successfully established and continuously improved the financial environment. Banks have implemented changes to their organizational structure to facilitate the development of digital banking. These changes include: (i) Small-scale banks have shown a preference for adopting new business models or establishing pure digital banks. For example, VPBank established the digital lab and developed the timo model in 2017. LienVietPostBank introduced a pilot program for a smart digital trading room with digitized procedures in October 2021. (ii) Large-scale banks particularly state-owned stock commercial banks are focusing on model digital transformation on existing business platforms. This approach is being adopted by banks such as BIDV, Vietcombank, Asia Commercial Bank and others. Empirical investigations of the relationship between CSR and firm performance in Vietnam's financial industry are crucial. This research aims to fill the gap when there is limited research in Vietnam on this issue. We specifically explored this relationship by considering the mediating influence of digital transformation in the context of Vietnam had just signed the directive (Prime Minister, 2020b) which aimed at fostering the growth of domestic digital technology companies and approved the National Digital Transformation Programme by 2025 with a long-term vision until 2030 (Prime Minister, 2020a). We suggest that corporate social responsibility enhances the performance of a company by using digital transformation as an intermediary factor.

Thus, we examined the subsequent theoretical and empirical concerns:

- Does corporate social responsibility facilitate the advancement of digital transformation and enhance company performance within the financial sector in Vietnam?
- Does digital transformation act as a mediator in the relationship between corporate social responsibility and the performance of a company?

2. LITERATURE REVIEW

The resource-based view (RBV) suggests that a firm's competitive advantage is derived from the variety of its resources as emphasized by [Moreno, Pinheiro, and Joia \(2012\)](#) and [Cuthbertson and Furseth \(2022\)](#). The knowledge-based view (KBV) further reinforces this idea by contending that resources contribute to the generation of knowledge that significantly impacts a company's long-term performance as argued by [Grant \(1996\)](#). Moreover, resources act as a valuable reservoir of knowledge. [Kogut and Zander \(2009\)](#) highlight that the most critical element in any organization is power. According to stakeholder theory, an organization's capacity to generate value in a variety of contexts, including the economy, society, environment and government is greatly impacted by the needs of its stakeholders ([Donaldson & Preston, 1995](#); [Jones, 1995](#); [Jones & Wicks, 1999](#)). According to [Kang \(2013\)](#) and [Brower and Mahajan \(2013\)](#) since stakeholders influence strategic decision-making, organizations are under increased scrutiny and are paying more attention to the demands and expectations of stakeholders.

[Carroll \(1991\)](#) introduced a CSR model that outlines four key elements of CSR: economic, legal, ethical and philanthropic dimensions. Later, [Schwartz and Carroll \(2003\)](#) expanded this model by integrating philanthropy into the ethical dimension, thus creating a three-dimensional framework that includes economic, legal and ethical aspects. CSR initiatives involve improving product quality, nurturing employee relationships and advancing corporate governance.

Digital transformation refers to the deliberate and organized changes made to an organization's functioning, brought about by the influence of digital technology ([Hanelt, Bohnsack, Marz, & Antunes Marante, 2021](#); [Warner & Wäger, 2019](#)). It involves the systematic process of enhancing or refining an entity by implementing significant modifications to its characteristics through the integration of information, computation, interpersonal exchange, and interconnectedness. All businesses must undergo digital transformation to thrive regardless of their size or industry. This transformation entails strategically leveraging technology to streamline existing operations and enhance customer satisfaction with the ultimate goal of remaining competitive and relevant in today's consumer-centric economy. The progress and establishment of digital technology possess the capability to impact all types of businesses in the contemporary era. However, the process of digitalization varies in terms of its speed, scope and magnitude ([Porfírio, Carrilho, Felício, & Jardim, 2021](#); [Volberda et al., 2021](#)). Consequently, the adoption of digital transformation has become crucial for all organizations ([Matarazzo, Penco, Profumo, & Quaglia, 2021](#); [Warner & Wäger, 2019](#)). Numerous scholars have devoted substantial time and effort to investigating its influence on corporate performance recognizing the significance of digital transformation. Nevertheless, the relationship between digital transformation and firm performance lacks convincing evidence. Some scholars argue that digital transformation can enhance firm performance by improving efficiency and reducing costs ([Chen, Jaw, & Wu, 2016](#); [Chouaibi et al., 2022](#); [De Pelsmacker, Van Tilburg, & Holthof, 2018](#); [Eller, Alford, Kallmünzer, & Peters, 2020](#); [Ferreira et al., 2019](#)). However, certain studies have indicated that the impact of digital transformation on business performance is statistically insignificant ([Ukko, Nasiri, Saunila, & Rantala, 2019](#)) or potentially harmful ([Cappa, Oriani, Peruffo, & McCarthy, 2021](#)).

[Orbik and Zozul'aková \(2019\)](#) argue that corporate social responsibility and digital transformation play crucial roles in improving global competitiveness in contemporary society. Digital transformation minimizes the negative effects on the environment and enhances the variety of resources enabling corporations to fulfill their social obligations. Digital transformation enhances companies' ability to effectively communicate and engage with customers and partners, resulting in increased agility in identifying stakeholder requirements ([Kohtamäki, Parida, Patel, & Gebauer, 2020](#); [Paola & Gebauer, 2020](#)). Consequently, companies are better equipped to fulfill the needs of stakeholders ([Hadjielias, Christofi, Christou, & Drotarova, 2022](#); [Schiafone, Leone, Caporuscio, & Lan, 2022](#)). Simultaneously, the advancement of novel algorithms and artificial intelligence enables organizations to scrutinize, manipulate and evaluate vast quantities of data generating useful insights that aid in identifying societal and stakeholder requirements ([Cardinali & De Giovanni, 2022](#)). Identifying and enhancing these requirements will

encourage corporations to actively participate in corporate social responsibility (Brower & Mahajan, 2013). The utilization of digital media has experienced a substantial rise leading to a transformation in the manner in which firms engage with stakeholders about corporate social responsibility (Dunn & Harness, 2019; Illia, Romenti, Rodríguez-Cánovas, Murtarelli, & Carroll, 2017; Vogler & Eisenegger, 2021). Companies are progressively using digital media, such as blogs, websites, mobile applications and social media in conjunction with users to generate, distribute and use information. User-generated content refers to publicly available information concerning the range of products and services provided by companies. However, stakeholders have the ability to recognize the corporate social responsibility initiatives of the company, inquire about these initiatives, voice doubt, and assess the effectiveness of CSR endeavors using social media platforms (Dunn & Harness, 2019; Stohl, Etter, Banghart, & Woo, 2017). Thus, we contend that digital transformation encourages enterprises to prioritize inventive user content employ diverse channels for engaging in corporate social responsibility communication and maximize the effectiveness of communication (Illia et al., 2017). Consequently, they are more inclined to engage in corporate social responsibility initiatives to address the extensive scope and diverse array of society's expectations for CSR. Furthermore, the visibility of digital operations also leads corporations to confront mounting demands from consumers and communities to enhance their environmental and social responsibility. Adopting digital technologies like blockchain and wireless broadband enhances the transparency, traceability and accessibility of information regarding production, distribution, marketing and consumption (Ciampi, Faraoni, Ballerini, & Meli, 2022; Kouhizadeh & Sarkis, 2018). Consequently, organizations that have achieved higher degrees of digital transformation may face increased examination and regulation from stakeholders and may be motivated to participate in social connection efforts (Gilliland, Bello, & Gundlach, 2010; Orlitzky, Louche, Gond, & Chapple, 2017). Conversely, the proliferation of digital platforms like cloud computing, e-commerce and fundraising has led to the implementation of reciprocal monitoring mechanisms in numerous companies (Cenamor, Parida, & Wincent, 2019). Thus, firms actively participate in corporate social responsibility initiatives with the goal of enhancing stakeholder confidence for the purpose of cooperation with platform partners (Barnett, 2019; Cuyper, Koh, & Wang, 2016) because the illicit behaviors of a platform adopter also have an adverse impact on the reputation of their partners (Chou, Chen, & Liu, 2017).

Vietnam has seen swift industrialization, modernization and international integration in the last forty years. The government of Vietnam is highly concerned about the process of digital transformation. Vietnam's economy is undergoing a rapid transformation through the attainment of digital technology. The advent of digital technology is revolutionizing various economic sectors, including industry, agriculture, trade, payments, finance, transportation and education (Cameron et al., 2019). Vietnam's economy is currently experiencing a significant shift due to the adoption of cutting-edge digital technology. Various sectors in Vietnam are undergoing significant digital transformation, encompassing e-commerce, tourism, digital content and financial technology. Consumer survey results indicate that Vietnamese consumers readily adjust to and embrace novel products and services of the digital economy as industries transform. The process of attracting investment and growing Vietnam's digital economy has advantageous outcomes (Cameron et al., 2019). Enterprises in these sectors have acknowledged the importance of digital technology in their manufacturing procedures. However, they face challenges in implementing new technology due to financial and technical constraints. Vietnam's digital economy exhibits considerable untapped potential in specialized media systems and developing industries. The user survey results indicate that Vietnamese consumers are rapidly embracing new goods and services of the digital economy as industries transform.

Vietnamese consumers are increasingly adopting Internet banking especially the younger and more proficient technology generations. A significant proportion of the Vietnamese populace frequently establishes bank accounts. It engages in transactions with banks, resulting in banking and insurance becoming the primary industries driving digital transformation by using phone applications. Today, technology may be used to streamline and automate several manual operations in the banking and insurance industries. Today, numerous manual processes in the banking and insurance industries can be enhanced and streamlined through the utilization of technology. These processes include:

- Expand your customer base by offering mobile banking and insurance services.

- Utilize cutting-edge technology like Robotic Process Automation (RPA) and Artificial Intelligence (AI) to optimize and simplify a range of processes, including Know Your Customer (KYC) procedures, Anti-Money Laundering (AML) checks and ID verification.
- Obtain concealed insights with sophisticated data analytics techniques.
- Enhance fraud detection through the utilization of machine learning techniques.

Hence, it is crucial to evaluate the influence of the correlation between digital transformation and CSR performance on the operational effectiveness of companies in Vietnam's financial sector.

3. HYPOTHESES

3.1. Digital transformation and corporate social responsibility

Stakeholder theory asserts that the support and participation of stakeholders are essential to a company's expansion (Freeman, 2014; Waheed & Zhang, 2022). Consequently, we argue that corporate social responsibility (CSR) plays a role in mitigating the negative impacts of digital transformation on the immediate financial performance of companies in transitioning economies while simultaneously enhancing the long-term value of these companies by strengthening stakeholder recognition and support for digital transformation initiatives. Price and Sun (2017) attribute this to stakeholders' tendency to respond more promptly and effectively to CSR endeavors. It is asserted that the implementation of a company's digital technology (DT) will enhance its ability to initiate and oversee corporate social responsibility (CSR) activities. The application of digital technology has the potential to promote radical ecological developments and reduce negative environmental effects (Ciarli, Kenney, Massini, & Piscitello, 2021; Santoalha, Consoli, & Castellacci, 2021). Furthermore, the integration of digital technology across various sectors such as manufacturing, transportation, logistics and recycling can contribute to the reduction of energy consumption, carbon emissions and pollution (Cardinali & De Giovanni, 2022). Additionally, digital transformation has the potential to foster the generation of knowledge by transforming company culture influencing employee mindsets and actively promoting innovation (Sousa & Rocha, 2019). According to Cardinali and De Giovanni (2022) the adoption of Industry 4.0 technology can facilitate the establishment of circular economic systems and create new business opportunities to enhance corporate social responsibility. According to Newell and Marabelli (2015) and Vial (2019) digital applications play a crucial role in improving social security. The decentralized nature of blockchain technology addresses issues concerning information transparency and immutability effectively. Moreover, according to Kouhizadeh and Sarkis (2018) it aids in promoting supply chain sustainability, supporting organizations in meeting their corporate social responsibility (CSR) goals. Consequently, our recommendation is:

Hypothesis 1: A positive relationship between digital transformation and a firm's corporate social responsibility.

3.2. Corporate Social Responsibility and Firm Performance

Several scholars argue that companies can gain benefits from the competitive advantage created by Corporate Social Responsibility (CSR). It has been observed that consumers are more likely to have higher purchase intentions and are willing to pay premium prices for products and services offered by socially responsible companies (Kang, Stein, Heo, & Lee, 2012; Laroche, Bergeron, & Barbaro-Forleo, 2001; Mohr & Webb, 2005). The implementation of CSR can have a positive impact on a firm's performance by enhancing product recognition, motivating employees, fostering positive employee attitudes and improving the company's public image. Although numerous empirical studies have investigated the relationship between CSR and firm performance, there is a need for greater consistency in the findings. These studies have identified both positive, negative and neutral associations between CSR and firm performance using different research methodologies. Therefore, the following hypothesis was formulated:

Hypothesis 2: Corporate social responsibility has a positive impact on firm performance.

3.3. Digital Transformation and Firm Performance

The assessment of a company's performance is based on various metrics such as return on assets, net profit, revenue, and market share which serve as key indicators of the company's competitiveness (Ngo & O'Cass, 2013;

Ramaswami, Srivastava, & Bhargava, 2009). The advent of information technology has brought significant changes to businesses in the digital era, leading researchers to explore the factors influencing business performance in light of technological advancements (AlMulhim, 2021; Lal & Bharadwaj, 2020; Wang, Xu, & Ni, 2022). There is a growing emphasis on digital transformation in the contemporary technological landscape which has been defined by the need for strategic changes (Ferreira et al., 2019; Llopis-Albert, Rubio, & Valero, 2021). Digital transformation entails the integration of digital technology into business operational systems enabling organizations to harness digital resources to create unique value and gain a competitive advantage (Bharadwaj, El Sawy, Pavlou, & Venkatraman, 2013). This study suggests that the implementation of digital transformation can enhance a company's overall performance.

Digital transformation plays a crucial role in improving business performance by leveraging digital technologies to enhance the quality and efficiency of knowledge searches. Organizations may manage and engage with a wide range of external relationships more efficiently through digital tools, especially social media which makes it easier to collect data from a variety of sources. Moreover, the integration of digital analytics tools like big data analytics provides companies with a competitive edge by revealing valuable and comprehensive insights. Additionally, digital transformation promotes enhanced knowledge exchange among firms and their partners, resulting in stronger relationships and a more conducive business environment. This, in turn, contributes to improved performance outcomes. Furthermore, digital transformation boosts organizational agility by enhancing a company's intellectual capital. This enhancement in intellectual capital leads to improved management capabilities in areas such as knowledge management, data management and relationship management ultimately aiding companies in achieving superior performance levels. Digital transformation significantly enhances businesses' capacity to acquire, share and manage external knowledge, thereby driving substantial improvements in their overall performance. We proposed the following theory academically:

Hypothesis 3: The implementation of digital transformation has a beneficial influence on the overall firm's performance.

3.4. Mediating Roles of Digital Transformation

This study posits that corporate social responsibility has a direct impact on the efficacy of digital transformation. According to scholars, the attainment of digital transformation is contingent upon the perception and endorsement of this process by an organization's stakeholders (Solberg, Traavik, & Wong, 2020). Companies that actively engage in corporate social responsibility prioritize the interests of stakeholders (Zhong, Chen, & Ren, 2022) and strive to enhance the quality of relationships with stakeholders. This encompasses enhancing stakeholder knowledge and contentment with the organization. Additionally, it fosters the digital transformation of companies by providing more explicit backing from stakeholders (Carvalho, Muralidharan, & Bapuji, 2015; Jang, Kim, & Lee, 2022). Subsequently, organizations can overcome the challenges presented by digital transformation and accelerate the process of creating value from it. This increases the digital transformation's effectiveness and provides a significant increase in both short-term performance and long-term value.

Conversely, companies that adopt CSR initiatives often require assistance in their digital transformation endeavors due to skepticism or rejection from stakeholders resulting in diminished efficacy of digital transformation efforts. Concerns about the potential negative effects of digital transformation such as compromised privacy and limited benefits may be expressed by consumers who follow CSR practices. Consequently, they can decide to refuse to purchase products or services from these businesses which would hinder their efforts to embrace digital transformation.

Hypothesis 4: Digital transformation positively mediates the relationship between CSR and firm performance.

This study constructed the theoretical framework illustrated in [Figure 1](#) through a comprehensive review of relevant literature.

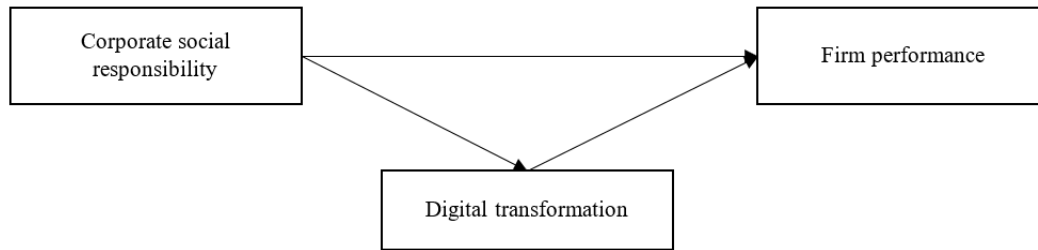


Figure 1. Research framework.

4. RESEARCH METHODOLOGY

We employed a survey sample derived from Vietnam's banking industry to evaluate the proposed conceptual framework. The financial industry, including the banking sector, in Vietnam is currently undergoing numerous digital transformations to align with the research context. An increasing number of Vietnamese banks view digital transformation strategies as a chance to sustain their operations and effectively execute digital transformation by adapting to alterations in the external environment. The survey primarily focused on banks that have branches situated in provinces within the Southeast region, specifically Binh Duong Province, Dong Nai Province, Tay Ninh Province, Ba Ria Vung Tau Province and Ho Chi Minh City. The questionnaires were disseminated through both email and face-to-face interview methods. The participants of the questionnaire consisted of mid- and senior-level executives, senior employees and department heads who have implemented digital transformation strategies in banks and possess knowledge about their bank's corporate social responsibility initiatives. The questionnaire was primarily distributed to respondents in an anonymous manner to enhance the rate at which they can remember and provide accurate information. In addition, it is necessary for respondents to have a minimum of three years of experience at the company and be knowledgeable about the bank's digital transformation strategies and CSR activities to ensure the survey results are unbiased.

The scale was derived from prior research and subsequently employed in our study. The assessment of CSR is conducted using a scale developed by [Freudenreich, Lüdeke-Freund and Schaltegger \(2020\)](#) and [Dmytriyev, Freeman, and Hörisch \(2021\)](#) which comprises nine factors that must be taken into account. [Jansen, Van Den Bosch, and Volberda \(2006\)](#) and [He and Wong \(2004\)](#) propose eight measurement categories to evaluate the process of digital transformation. These categories include: Digital technology can be used for various purposes, including enhancing products and services, delivering products and services more efficiently, expanding services for existing customers, reducing production costs of goods or services, creating new products, exploring new distribution channels, expanding into new markets, and reaching new customers in new markets.

The primary focus of this research is to evaluate the correlation between the company's performance and the performance of the market. Evaluating the company's market performance is based on two key factors: the growth target of its market share and the level of customer satisfaction with its products and services. The corporate efficiency scale used in this study is derived from the scales developed by [Keh, Nguyen, and Ng \(2007\)](#) and [Wu and Cavusgil \(2006\)](#). It comprises five observation variables that assess the extent to which business goals are accomplished. Additionally, we employ a five-point Likert scale that ranges from 1 (representing strong disagreement) to 5 (representing strong agreement).

Initially, a comprehensive examination of pertinent literature on corporate social responsibility, digital transformation and corporate performance was conducted. Subsequently, an English version of the measurement tool was formulated which was later translated into Vietnamese by scholars possessing international research expertise. We made necessary modifications to the relevant items in the questionnaire following the pre-testing of the questionnaire by 15 bank branch executives in Ho Chi Minh City.

The collection of questionnaires took place from March to December 2023 with an initial distribution of 250 questionnaires. A total of 247 questionnaires were ultimately gathered. We obtained 245 valid questionnaires after removing inconsistent, missing, and incomplete responses. [Table 1](#) provides demographic data.

Table 1. Respondents' demographic characteristics.

Demographics	Categories	Frequency	Percentage
Gender	Male	153	62.45%
	Female	92	37.55%
Age group	<25	28	11.43%
	25 - <35	79	32.24%
	35 - <50	113	46.12%
	≥ 50	25	10.20%
Education	PhD/M.Sc	56	22.86%
	Bachelor	182	74.29%
	Diploma	7	2.86%
Monthly salary	< 15 mil VND	22	8.98%
	15 – <30 mil VND	63	25.71%
	30 – <50 mil VND	128	52.24%
	≥ 50 mil VND	32	13.06%
Location of the bank	Ho Chi Minh city	180	73.47%
	Binh Duong	19	7.76%
	Binh Phuoc	6	2.45%
	Dong Nai	17	6.94%
	Ba Ria Vung Tau	16	6.53%
	Tay Ninh	7	2.86%

The PLS-SEM model was used to examine assumptions that deviate from those of prior research. Furthermore, Partial Least Squares Structural Equation Modeling (PLS-SEM) has been acknowledged for its efficacy in handling small sample sizes and does not necessitate the use of a standard distribution for the data (Dash & Paul, 2021). The research region exhibits a higher concentration of banks in Ho Chi Minh City compared to other provinces owing to the extensive scope of the study. Therefore, the study's findings have validated the effectiveness of the PLS-SEM analysis technique particularly in experimental research that necessitates strong connections while transitioning from a theoretical to a linear structural model.

5. RESULTS

Cronbach's alpha and composite reliability (Hair, Hult, Ringle, & Sarstedt, 2017; Nunnally & Bernstein, 1994) are statistical measures employed to evaluate the reliability of internal consistency. Examining convergent validity entails the outer loading of observed variables and calculating the average variance extracted (AVE). According to Hair et al. (2017), the measuring scale is considered appropriate if the AVE value is above 0.5 and the outer loading value is over 0.7. Use the Bootstrap process 5,000 times to determine the data's statistical significance (Hair et al., 2017).

Table 2. Reliability and validity test.

Latent variable	Items		Loadings	CA	CR	AVE
Digital transformation Jansen et al. (2006) and He and Wong (2004)	DT1	Digital technology makes minor improvements to existing banks' services.	0.784	0.887	0.908	0.701
	DT2	Digital technologies deliver banks' products and services more efficiently.	0.764			
	DT3	Digital technology extends the banks' services to existing customers.	0.826			
	DT4	Digital technology reduces expenses to reduce the cost of producing banks' services.	0.703			

Latent variable	Items		Loadings	CA	CR	AVE
	DT5	Digital technology invents new banks' products and services.	0.710			
	DT6	Adopting digital technology to discover new banks' distribution channels.	0.724			
	DT7	Digital technologies help to develop and enter new markets.	0.729			
	DT8	Using digital technology to find and reach new bank's customers in new markets.	0.713			
CSR Freudenreich et al. (2020) and Dmytriyeu et al. (2021)	CSR1	This bank cares about the environment.	0.875	0.946	0.956	0.555
	CSR2	This bank fulfils its social responsibilities.	0.839			
	CSR3	This bank gives back to society what it has received.	0.882			
	CSR4	This bank is concerned about improving the welfare of society.	0.864			
	CSR5	This bank is a socially responsible company.	0.889			
	CSR6	This bank makes philanthropic contributions.	0.921			
	CSR7	This bank makes an effort to create new jobs.	0.751			
	CSR8	It looks like an enjoyable place to work at this bank.	0.781			
	CSR9	This bank treats its employees well.	0.706			
Firm performance Keh et al. (2007) and Wu and Cavusgil (2006)	FP1	This bank has achieved the desired profits over the past three years.	0.840	0.887	0.894	0.688
	FP2	This bank has the desired growth rates over the past three years.	0.760			
	FP3	This bank has achieved the desired market shares over the past three years.	0.853			
	FP4	This bank has developed the desired markets over the past three years.	0.854			
	FP5	This bank has developed the desired new products and services over the past three years.	0.837			

Note: * CA: Cronbach's alpha, CR: Construct reliability, AVE: Average variance extracted, factor loading of all the items is greater than 0.7.

According to Table 2, the Cronbach's alpha coefficient of the concepts is in the range of 0.887 – 0.946. The composite reliability value is between 0.894 – 0.956 which indicates that the scales are reliable (Hair et al., 2017; Nunnally & Bernstein, 1994).

The discriminant validity of a scale is assessed using three factors: the cross loadings factor, the Fornell-Larker criterion and the HTMT (Heterotrait-monotrait ratio) (Hair et al., 2017; Henseler, Ringle, & Sarstedt, 2015). It was shown that the coefficient of cross load in this particular building is significantly greater compared to other structures. The square root of the average variance obtained for each structure in Table 3 of the Fornell-Larcker criterion results is higher than the correlation coefficient between the structures.

Table 3. Fornell-Larcker criterion.

Variables	CSR	DT	FP
CSR	0.837		
DT	0.558	0.745	
FP	0.649	0.612	0.829

Furthermore, the differential value is ensured if the HTMT value in [Table 4](#) is less than 0.9.

Table 4. Heterotrait-Monotrait Ratio (HTMT).

Path analysis	Original sample (O)	Sample mean (M)	2.5%	97.5%
DT <-> CSR	0.563	0.564	0.482	0.641
FP <-> CSR	0.688	0.688	0.606	0.760
FP <-> DT	0.654	0.653	0.574	0.723

Furthermore, the differential scale derived from conducting Bootstrap 5,000 iterations reveals that the confidence interval for the HTMT value spans from 2.5% to 97.5% except for the value of 1. The coefficient of determination R^2 quantifies the extent to which independent variables may accurately predict outcomes. The level of predictability of the digital transformation is deemed to be moderate (R^2 DT = 0.311) and the predictable level of firm performance is considered average (R^2 FP = 0.512), as shown in [Table 5](#).

Furthermore, the predictive ability of the model is evaluated using out-of-sample predictive relevance (Q^2). The results in [Table 5](#) further demonstrate that the model's predictive ability ([Hair et al., 2017](#)) is supported as indicated by the Q^2 coefficient of the dependent variables being greater than 0.

Table 5. Hypotheses testing results.

Examined relationships	Coefficient	t-value	p-value	Supported hypothesis
H ₁ : CSR → Digital transformation	0.558	16.635	0.000	Support
H ₂ : CSR → Firm performance	0.447	9.778	0.000	Support
H ₃ : Digital transformation → Firm performance	0.363	8.585	0.000	Support
R^2 Digital transformation = 0.311	Q^2 Digital transformation = 0.154			
R^2 Firm performance = 0.512	Q^2 Firm performance = 0.340			

According to [Hair et al. \(2017\)](#), the statistical significance of regression coefficients is determined by conducting the Bootstrap technique 5,000 times. [Table 5](#) demonstrates that the theoretical model's linkages which have a reliability greater than 95% include: H₁, H₂ and H₃ are statistically significant and have a reliability of 95%.

The PLS-SEM algorithm shows the structural model's estimate and validation in [Figure 2](#). This research aims to identify the mediating effect of digital transformation in the relationship between corporate social responsibility (CSR) and characteristics related to firm performance. Two factors can be used to measure intermediate impacts: the relationship between the CSR factors and the digital transformation intermediates and the relation between the digital transformation intermediates and firm performance ([Cheung & Lau, 2008](#)). [Table 6](#) illustrates the specific indirect effects of CSR on firm performance with a P value of 0.000 which is less than the significance level of 0.05. Consequently, the findings support the hypothesis that there exists an indirect relationship between CSR and firm performance.

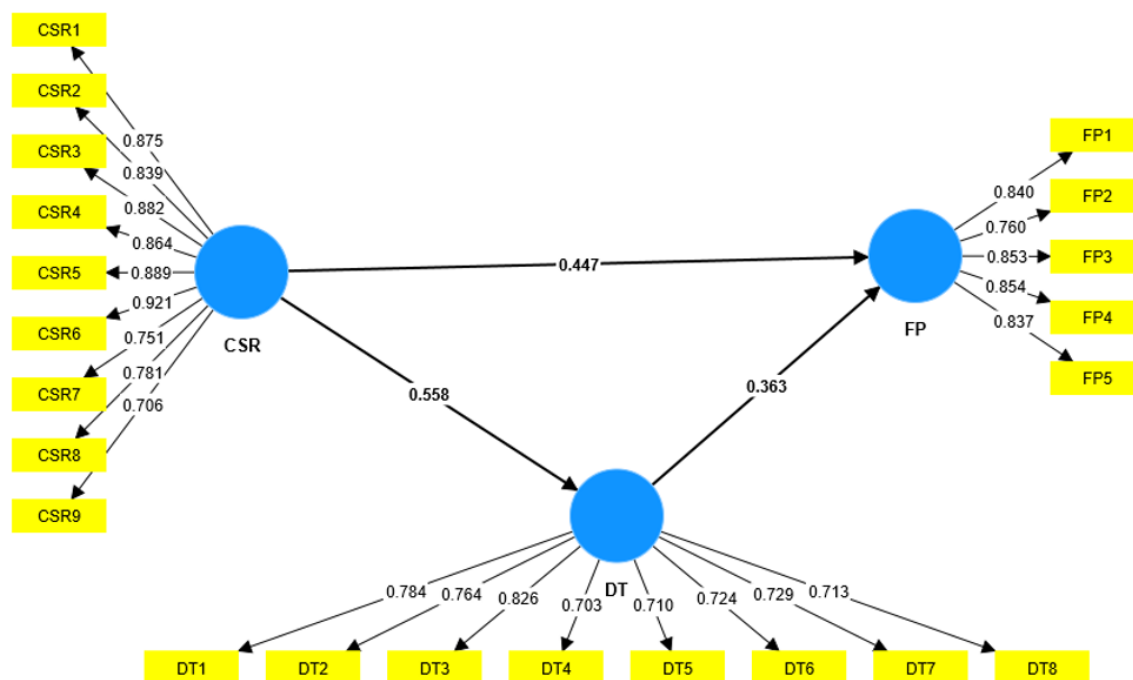


Figure 2. PLS-SEM analysis results of the research framework model.

Table 6. Assessing mediator effects through tests.

Examined relationships	Coefficient	t-value	p-value	Supported hypothesis
CSR → Digital transformation → Firm performance	0.202	7.889	0.000	Support

6. DISCUSSION

The results of our research are as follows: The digital economy has significantly contributed to global economic progress. The current digital landscape is experiencing a widespread trend referred to as digital transformation. Hence, it is crucial to explore the implications of digital transformation on business activities. Corporate governance plays a vital role in the strategy and sustainable growth of firms. However, the existing literature often neglects the importance of corporate governance in analyzing the societal impacts of companies' digital transformation. This study examines the influence of digital transformation on firms' corporate social responsibility by merging digitalization literature with stakeholder theory. It introduces an innovative conceptual framework that clarifies the relationship between corporate governance, digital transformation and corporate social responsibility. According to this framework, institutional ownership and board independence act as mediators in the process. The research also affirms that both digital transformation and corporate social responsibility have a positive effect on financial performance consistent with prior research (Ahmed, Bhatti, Gölgeci, & Arslan, 2022; Kang et al., 2012; Laroche et al., 2001; Mohr & Webb, 2005). Furthermore, the study sheds light on the role of digital transformation as an intermediary in the link between corporate social responsibility and financial performance in the Vietnamese market, a topic that has been scarcely explored previously. This study aimed to assess the effects of Corporate Social Responsibility (CSR) and Digital Transformation (DT) on the performance of banking institutions in the South-East region of Vietnam specifically in Binh Duong Province, Binh Phuoc Province, Dong Nai Province, Ba Ria Vung Tau Province, Tay Ninh Province and Ho Chi Minh City. Furthermore, this research provides fresh insights into the digital revolution within the banking sector. The investigation also explored the relationship between CSR and DT as well as the influence of both CSR and DT on firm performance. The findings of the study confirm three theories that demonstrate the positive impact of corporate social responsibility on enterprise digital transformation as well as the beneficial effects of both CSR and DT on the financial performance of Vietnamese banks. The information provides additional evidence supporting the idea that digital transformation plays a role as an intermediary

between corporate social responsibility and financial performance. The operational effectiveness of banks is improved when they actively participate in CSR activities and advocate for digital transformation.

7. IMPLICATION, LIMITATION AND SCOPE FOR FUTURE RESEARCH

7.1. Theoretical Implications

Since DT is becoming a more significant factor in modern society, the research has produced the following specific theories:

Initially, the research provides a written understanding of the role of DT in modern society and has contributed to previous studies in this area. Secondly, the research also builds on the knowledge of CSR especially throughout the current phase of digital transformation. There are also impacts on CSR activities of enterprises as well as the requirements of enterprise stakeholders when carrying out social responsibility activities which also affect the implementation of the digital transformation of enterprises with the development of the digital world.

7.2. Practical Implications

The continuous advancement of Digital Transformation (DT) in today's world impacts all professions. Researching the impacts of DT activities aids enterprises in adjusting to this new environment. This research offers valuable insights into the DT activities of enterprises, enabling them to develop operational strategies that address current challenges such as Corporate Social Responsibility (CSR) initiatives. The good performance of CSR and DT activities contributes to improve the efficiency of the business.

7.3. Limitations and Scope for Future Research

There are still gaps that can be filled in by further investigation and this work adds a lot to the body of knowledge already available. The study is limited by its geographical reach as it only examined banks in the Southeast area of Vietnam. It is necessary to consider expanding the study's scope to enhance the representativeness of the sample for the entire country. Another constraint is the present digital transformation (DT) strategy employed by banks. The lack of synchronization and uniformity among institutions might have varying consequences when assessing the total banking sector of Vietnam though the shift towards digitalization is a significant concern. We use a comprehensive gauge of digital transformation derived from companies' yearly reports. Subsequent studies could enhance our findings by examining distinct elements of digital transformation such as digital marketing, digital product experience, e-commerce, or Electronic Customer Relationship Management (e-CRM).

FUNDING

This study received no specific financial support.

INSTITUTIONAL REVIEW BOARD STATEMENT

The Ethical Committee of the Industrial University of Ho Chi Minh City, Vietnam has granted approval for this study on 22 January 2021 (Ref. No. 77/QD-DHCN).

TRANSPARENCY

The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

COMPETING INTERESTS

The authors declare that they have no competing interests.

AUTHORS' CONTRIBUTIONS

All authors contributed equally to the conception and design of the study. All authors have read and agreed to the published version of the manuscript.

ARTICLE HISTORY

Received: 29 January 2024/ Revised: 9 April 2024/ Accepted: 30 April 2024/ Published: 27 May 2024

Copyright: © 2024 by the authors. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

REFERENCES

- Ahmed, A., Bhatti, S. H., Gölgeci, I., & Arslan, A. (2022). Digital platform capability and organizational agility of emerging market manufacturing SMEs: The mediating role of intellectual capital and the moderating role of environmental dynamism. *Technological Forecasting and Social Change*, *177*, 121513. <https://doi.org/10.1016/j.techfore.2022.121513>
- AlMulhim, A. F. (2021). Smart supply chain and firm performance: The role of digital technologies. *Business Process Management Journal*, *27*(5), 1353–1372. <https://doi.org/10.1108/BPMJ-12-2020-0573>
- Barnett, M. L. (2019). The business case for corporate social responsibility: A critique and an indirect path forward. *Business and Society*, *58*(1), 167–190. <https://doi.org/10.1177/0007650316660044>
- Bharadwaj, A., El Sawy, O. A., Pavlou, P. A., & Venkatraman, N. V. (2013). Digital business strategy: Toward a next generation of insights. *MIS Quarterly*, *37*(2), 471–482. <https://doi.org/10.25300/misq/2013/37:2.3>
- Brower, J., & Mahajan, V. (2013). Driven to be good: A stakeholder theory perspective on the drivers of corporate social performance. *Journal of Business Ethics*, *117*(2), 313–331. <https://doi.org/10.1007/s10551-012-1523-z>
- Cameron, A., Pham, T. H., Atherton, J., Nguyen, D. H., Nguyen, T. P., Nguyen, T. N., . . . Hajkowics, S. (2019). *Vietnam's future digital economy – towards 2030 and 2045*. Retrieved from https://www.csiro.au/-/media/D61/Files/18-00566_DATA61_REPORT_VietnamsFutureDigitalEconomy2040_ENGLISH_Summary_WEB_195028.pdf
- Cappa, F., Oriani, R., Peruffo, E., & McCarthy, I. (2021). Big data for creating and capturing value in the digitalized environment: Unpacking the effects of volume, variety, and veracity on firm performance. *Journal of Product Innovation Management*, *38*(1), 49–67. <https://doi.org/10.1111/jpim.12545>
- Cardinali, P. G., & De Giovanni, P. (2022). Responsible digitalization through digital technologies and green practices. *Corporate Social Responsibility and Environmental Management*, *29*(4), 984–995. <https://doi.org/10.1002/csr.2249>
- Carroll, A. B. (1991). The pyramid of corporate social responsibility: Toward the moral management of organizational stakeholders. *Business Horizons*, *34*(4), 39–48. [https://doi.org/10.1016/0007-6813\(91\)90005-g](https://doi.org/10.1016/0007-6813(91)90005-g)
- Carvalho, S. W., Muralidharan, E., & Bapuji, H. (2015). Corporate social 'irresponsibility': Are consumers' biases in attribution of blame helping companies in product-harm crises involving hybrid products? *Journal of Business Ethics*, *130*(3), 651–663. <https://doi.org/10.1007/s10551-014-2258-9>
- Cenamor, J., Parida, V., & Wincent, J. (2019). How entrepreneurial SMEs compete through digital platforms: The roles of digital platform capability, network capability and ambidexterity. *Journal of Business Research*, *100*, 196–206. <https://doi.org/10.1016/j.jbusres.2019.03.035>
- Chen, Y. Y. K., Jaw, Y. L., & Wu, B. L. (2016). Effect of digital transformation on organisational performance of SMEs: Evidence from the Taiwanese textile industry's web portal. *Internet Research*, *26*(1), 186–212. <https://doi.org/10.1108/IntR-12-2013-0265>
- Cheung, G. W., & Lau, R. S. (2008). Testing mediation and suppression effects of latent variables: Bootstrapping with structural equation models *Organizational Research Methods*, *11*(2), 296–325. <https://doi.org/10.1177/1094428107300343>
- Chou, C. Y., Chen, J. S., & Liu, Y. P. (2017). Inter-firm relational resources in cloud service adoption and their effect on service innovation. *Service Industries Journal*, *37*(3-4), 256–276. <https://doi.org/10.1080/02642069.2017.1311869>
- Chouaibi, S., Festa, G., Quaglia, R., & Rossi, M. (2022). The risky impact of digital transformation on organizational performance—evidence from Tunisia. *Technological Forecasting and Social Change*, *178*, 121571. <https://doi.org/10.1016/j.techfore.2022.121571>
- Ciampi, F., Faraoni, M., Ballerini, J., & Meli, F. (2022). The co-evolutionary relationship between digitalization and organizational agility: Ongoing debates, theoretical developments and future research perspectives. *Technological Forecasting and Social Change*, *176*, 121383. <https://doi.org/10.1016/j.techfore.2021.121383>
- Ciarli, T., Kenney, M., Massini, S., & Piscitello, L. (2021). Digital technologies, innovation, and skills: Emerging trajectories and challenges. *Research Policy*, *50*(7), 104289. <https://doi.org/10.1016/j.respol.2021.104289>
- Cuthbertson, R. W., & Furseth, P. I. (2022). Digital services and competitive advantage: Strengthening the links between RBV, KBV, and innovation. *Journal of Business Research*, *152*, 168–176. <https://doi.org/10.1016/j.jbusres.2022.07.030>
- Cuyppers, I. R. P., Koh, P. S., & Wang, H. (2016). Sincerity in corporate philanthropy, stakeholder perceptions and firm value. *Organization Science*, *27*(1), 173–188. <https://doi.org/10.1287/orsc.2015.1030>
- Dash, G., & Paul, J. (2021). CB-SEM vs PLS-SEM methods for research in social sciences and technology forecasting. *Technological Forecasting and Social Change*, *173*, 121092. <https://doi.org/https://doi.org/10.1016/j.techfore.2021.121092>
- De Pelsmacker, P., Van Tilburg, S., & Holthof, C. (2018). Digital marketing strategies, online reviews and hotel performance. *International Journal of Hospitality Management*, *72*, 47–55. <https://doi.org/10.1016/j.ijhm.2018.01.003>
- Dehning, B., Richardson, V. J., & Zmud, R. W. (2003). The value relevance of announcements of transformational information technology investments. *MIS Quarterly*, *27*(4), 637–656. <https://doi.org/10.2307/30036551>

- Dmytriiev, S. D., Freeman, R. E., & Hörisch, J. (2021). The relationship between stakeholder theory and corporate social responsibility: Differences, similarities, and implications for social issues in management. *Journal of Management Studies*, 58(6), 1441–1470. <https://doi.org/10.1111/joms.12684>
- Donaldson, T., & Preston, L. E. (1995). The stakeholder theory of the corporation: Concepts, evidence, and implications. *Academy of Management Review*, 20(1), 65–91. <https://doi.org/10.5465/amr.1995.9503271992>
- Dunn, K., & Harness, D. (2019). Whose voice is heard? The influence of user-generated versus company-generated content on consumer scepticism towards CSR. *Journal of Marketing Management*, 35(9-10), 886–915. <https://doi.org/10.1080/0267257X.2019.1605401>
- Eller, R., Alford, P., Kallmünzer, A., & Peters, M. (2020). Antecedents, consequences, and challenges of small and medium-sized enterprise digitalization. *Journal of Business Research*, 112, 119–127. <https://doi.org/10.1016/j.jbusres.2020.03.004>
- Ferreira, J. J. M., Fernandes, C. I., & Ferreira, F. A. F. (2019). To be or not to be digital, that is the question: Firm innovation and performance. *Journal of Business Research*, 101, 583–590. <https://doi.org/10.1016/j.jbusres.2018.11.013>
- Fiaschi, D., Giuliani, E., & Nieri, F. (2017). Overcoming the liability of origin by doing no-harm: Emerging country firms' social irresponsibility as they go global. *Journal of World Business*, 52(4), 546–563. <https://doi.org/10.1016/j.jwb.2016.09.001>
- Freeman, R. E. (2014). *Strategic management: A stakeholder approach*. Cambridge, UK: Cambridge University Press. <https://doi.org/https://doi.org/10.1017/CBO9781139192675>.
- Freudenreich, B., Lüdeke-Freund, F., & Schaltegger, S. (2020). A stakeholder theory perspective on business models: Value creation for sustainability. *Journal of Business Ethics*, 166(1), 3–18. <https://doi.org/10.1007/s10551-019-04112-z>
- García-Cabrera, A. M., García-Soto, M. G., & Nieves, J. (2021). Knowledge, innovation and NTBF short-and long-term performance. *International Entrepreneurship and Management Journal*, 17(3), 1067–1089. <https://doi.org/10.1007/s11365-020-00656-z>
- García-García, R., García-Canal, E., & Guillén, M. F. (2017). Rapid internationalization and long-term performance: The knowledge link. *Journal of World Business*, 52(1), 97–110. <https://doi.org/10.1016/j.jwb.2016.09.005>
- Gavetti, G., Levinthal, D. A., & Rivkin, J. W. (2005). Strategy making in novel and complex worlds: The power of analogy. *In Strategic Management Journal*, 26(8), 691–712. <https://doi.org/10.1002/smj.475>
- Gilliland, D. I., Bello, D. C., & Gundlach, G. T. (2010). Control-based channel governance and relative dependence. *Journal of the Academy of Marketing Science*, 38(4), 441–455. <https://doi.org/10.1007/s11747-009-0183-8>
- Grant, R. M. (1996). Toward a knowledge-based theory of the firm. *Strategic Management Journal*, 17(S2), 109–122. <https://doi.org/10.1002/smj.4250171110>
- Hadjielias, E., Christofi, M., Christou, P., & Drotarova, M. H. (2022). Digitalization, agility, and customer value in tourism. *Technological Forecasting and Social Change*, 175, 121334. <https://doi.org/10.1016/j.techfore.2021.121334>
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2017). *A primer on partial least squares structural equation modeling* (2nd ed.). Thousand Oaks, CA: Sage Publications Inc.
- Hanelt, A., Bohnsack, R., Marz, D., & Antunes Marante, C. (2021). A Systematic review of the literature on digital transformation: Insights and implications for strategy and organizational change. *Journal of Management Studies*, 58(5), 1159–1197. <https://doi.org/10.1111/joms.12639>
- Hawn, O., & Ioannou, I. (2016). Mind the gap: The interplay between external and internal actions in the case of corporate social responsibility. *Strategic Management Journal*, 37(13), 2569–2588. <https://doi.org/10.1002/smj.2464>
- He, Z.-L., & Wong, P.-K. (2004). Exploration vs. exploitation: An empirical test of the ambidexterity hypothesis. *Organization Science*, 15(4), 481–494. <https://doi.org/10.1287/orsc.1040.0078>
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43(1), 115–135. <https://doi.org/10.1007/s11747-014-0403-8>
- Illia, L., Romenti, S., Rodríguez-Cánovas, B., Murtarelli, G., & Carroll, C. E. (2017). Exploring corporations' dialogue about csr in the digital era. *Journal of Business Ethics*, 146(1), 39–58. <https://doi.org/10.1007/s10551-015-2924-6>
- Jang, S., Kim, B., & Lee, S. (2022). Impact of corporate social (ir) responsibility on volume and valence of online employee reviews: Evidence from the tourism and hospitality industry. *Tourism Management*, 91, 104501. <https://doi.org/10.1016/j.tourman.2022.104501>
- Jansen, J. J. P., Van Den Bosch, F. A. J., & Volberda, H. W. (2006). Exploratory innovation, exploitative innovation, and performance: Effects of organizational antecedents and environmental moderators. *Management Science*, 52(11), 1661–1674. <https://doi.org/10.1287/mnsc.1060.0576>
- Jones, T. M. (1995). Instrumental stakeholder theory: A synthesis of ethics and economics. *The Academy of Management Review*, 20(2), 404–437. <https://doi.org/10.2307/258852>
- Jones, T. M., & Wicks, A. C. (1999). Convergent stakeholder theory. *The Academy of Management Review*, 24(2), 206–221. <https://doi.org/10.2307/259075>

- Kang, J. (2013). The relationship between corporate diversification and corporate social performance. *Strategic Management Journal*, 34(1), 94–109. <https://doi.org/10.1002/smj.2005>
- Kang, K. H., Stein, L., Heo, C. Y., & Lee, S. (2012). Consumers' willingness to pay for green initiatives of the hotel industry. *International Journal of Hospitality Management*, 31(2), 564–572. <https://doi.org/10.1016/j.ijhm.2011.08.001>
- Keh, H. T., Nguyen, T. T. M., & Ng, H. P. (2007). The effects of entrepreneurial orientation and marketing information on the performance of SMEs. *Journal of Business Venturing*, 22(4), 592–611. <https://doi.org/10.1016/j.jbusvent.2006.05.003>
- Kogut, B., & Zander, U. (2009). Knowledge of the firm combinative capabilities, and the replication of technology. In *Knowledge in Organisations Taylor and Francis*, 17–36. <https://doi.org/10.1287/orsc.3.3.383>
- Kohtamäki, M., Parida, V., Patel, P. C., & Gebauer, H. (2020). The relationship between digitalization and servitization: The role of servitization in capturing the financial potential of digitalization. *Technological Forecasting and Social Change*, 151, 119804. <https://doi.org/10.1016/j.techfore.2019.119804>
- Kouhizadeh, M., & Sarkis, J. (2018). Blockchain practices, potentials, and perspectives in greening supply chains. *Sustainability*, 10(10), 3652. <https://doi.org/10.3390/su10103652>
- Lal, P., & Bharadwaj, S. S. (2020). Understanding the drivers of cloud-based service adoption and their impact on the organizational performance: An Indian perspective. In *Journal of Global Information Management*, 28(1), 56–85. <https://doi.org/10.4018/JGIM.2020010104>
- Laroche, M., Bergeron, J., & Barbaro-Forleo, G. (2001). Targeting consumers who are willing to pay more for environmentally friendly products. *Journal of Consumer Marketing*, 18(6), 503–520. <https://doi.org/10.1108/EUM000000000006155>
- Li, L., Ye, F., Zhan, Y., Kumar, A., Schiavone, F., & Li, Y. (2022). Unraveling the performance puzzle of digitalization: Evidence from manufacturing firms. *Journal of Business Research*, 149, 54–64. <https://doi.org/10.1016/j.jbusres.2022.04.071>
- Llopis-Albert, C., Rubio, F., & Valero, F. (2021). Impact of digital transformation on the automotive industry. *Technological Forecasting and Social Change*, 162, 120343. <https://doi.org/10.1145/3487757.3490886>
- Matarazzo, M., Penco, L., Profumo, G., & Quaglia, R. (2021). Digital transformation and customer value creation in made in Italy SMEs: A dynamic capabilities perspective. *Journal of Business Research*, 123, 642–656. <https://doi.org/10.1016/j.jbusres.2020.10.033>
- Mohr, L. A., & Webb, D. J. (2005). The effects of corporate social responsibility and price on consumer responses. *Journal of Consumer Affairs*, 39(1), 121–147. <https://doi.org/10.1111/j.1745-6606.2005.00006.x>
- Moreno, V., Pinheiro, J. R. M., & Joia, L. A. (2012). Resource-based view, knowledge-based view and the performance of software development companies: A study of Brazilian SMEs. *Journal of Global Information Management*, 20(4), 27–53. <https://doi.org/10.4018/jgim.2012100102>
- Muller, A. (2020). When does corporate social performance pay for international firms? *Business and Society*, 59(8), 1554–1588. <https://doi.org/10.1177/0007650318816957>
- Newell, S., & Marabelli, M. (2015). Strategic opportunities (and challenges) of algorithmic decision-making: A call for action on the long-term societal effects of datification. *Journal of Strategic Information Systems*, 24(1), 3–14. <https://doi.org/10.1016/j.jsis.2015.02.001>
- Ngo, L. V., & O'Cass, A. (2013). Innovation and business success: The mediating role of customer participation. *Journal of Business Research*, 66(8), 1134–1142. <https://doi.org/10.1016/j.jbusres.2012.03.009>
- Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.). New York: McGraw-Hill.
- Orbik, Z., & Zozul'aková, V. (2019). Corporate social and digital responsibility. *Management Systems in Production Engineering*, 27(2), 79–83. <https://doi.org/10.1515/mspe-2019-0013>
- Orlitzky, M., Louche, C., Gond, J. P., & Chapple, W. (2017). Unpacking the drivers of corporate social performance: A multilevel, multistakeholder, and multimethod analysis. *Journal of Business Ethics*, 144(1), 21–40. <https://doi.org/10.1007/s10551-015-2822-y>
- Paiola, M., & Gebauer, H. (2020). Internet of things technologies, digital servitization and business model innovation in BtoB manufacturing firms. *Industrial Marketing Management*, 89, 245–264. <https://doi.org/10.1016/j.indmarman.2020.03.009>
- Philippart, M. (2022). Success factors to deliver organizational digital transformation: A framework for transformation leadership. *Journal of Global Information Management*, 30, 1–17. <https://doi.org/10.4018/JGIM.304068>
- Porfirio, J. A., Carrilho, T., Felício, J. A., & Jardim, J. (2021). Leadership characteristics and digital transformation. *Journal of Business Research*, 124, 610–619. <https://doi.org/10.1016/j.jbusres.2020.10.058>
- Price, J. M., & Sun, W. (2017). Doing good and doing bad: The impact of corporate social responsibility and irresponsibility on firm performance. *Journal of Business Research*, 80, 82–97. <https://doi.org/10.1016/j.jbusres.2017.07.007>
- Prime Minister. (2020a). *Decision no.749/QĐ-TTg: Approval of national digital transformation program to 2025, orientation to 2030. Hanoi, Vietnam*. Retrieved from <https://vanban.chinhphu.vn/?pageid=27160&docid=200163>
- Prime Minister. (2020b). *Directive No.01/CT-TTg: On promoting the development of Vietnamese digital technology enterprises. Hanoi, Vietnam*. Retrieved from <https://vanban.chinhphu.vn/default.aspx?pageid=27160&docid=198882>

- Ramaswami, S. N., Srivastava, R. K., & Bhargava, M. (2009). Market-based capabilities and financial performance of firms: Insights into marketing's contribution to firm value. *Journal of the Academy of Marketing Science*, 37(2), 97–116. <https://doi.org/10.1007/s11747-008-0120-2>
- Santoalha, A., Consoli, D., & Castellacci, F. (2021). Digital skills, relatedness and green diversification: A study of European regions. *Research Policy*, 50(9), 104340. <https://doi.org/10.1016/j.respol.2021.104340>
- Schiavone, F., Leone, D., Caporuscio, A., & Lan, S. (2022). Digital servitization and new sustainable configurations of manufacturing systems. *Technological Forecasting and Social Change*, 176, 121441. <https://doi.org/10.1016/j.techfore.2021.121441>
- Schwartz, M., & Caroll, A. (2003). Philosophy documentation center. *Philosophy*, 13(4), 503-530.
- Singh, S., Sharma, M., & Dhir, S. (2021). Modeling the effects of digital transformation in Indian manufacturing industry. *Technology in Society*, 67, 101763. <https://doi.org/10.1016/j.techsoc.2021.101763>
- Solberg, E., Traavik, L. E. M., & Wong, S. I. (2020). Digital mindsets: Recognizing and leveraging individual beliefs for digital transformation. *California Management Review*, 62(4), 105–124. <https://doi.org/10.1177/0008125620931839>
- Sousa, M. J., & Rocha, Á. (2019). Digital learning: Developing skills for digital transformation of organizations. *Future Generation Computer Systems*, 91, 327-334. <https://doi.org/10.1016/j.future.2018.08.048>
- Stohl, C., Etter, M., Banghart, S., & Woo, D. J. (2017). Social media policies: Implications for contemporary notions of corporate social responsibility. *Journal of Business Ethics*, 142(3), 413–436. <https://doi.org/10.1007/s10551-015-2743-9>
- Sultana, S., Akter, S., Kyriazis, E., & Wamba, S. F. (2021). Architecting and developing big data-driven innovation (DDI) in the digital economy. *Journal of Global Information Management*, 29(3), 165-187. <https://doi.org/10.4018/jgim.2021050107>
- Ukko, J., Nasiri, M., Saunila, M., & Rantala, T. (2019). Sustainability strategy as a moderator in the relationship between digital business strategy and financial performance. *Journal of Cleaner Production*, 236, 117626. <https://doi.org/10.1016/j.jclepro.2019.117626>
- Vial, G. (2019). Understanding digital transformation: A review and a research agenda. *Journal of Strategic Information Systems*, 19(3), 143–144. <https://doi.org/10.1016/j.jsis.2010.09.001>
- Vogler, D., & Eisenegger, M. (2021). CSR communication, corporate reputation, and the role of the news media as an agenda-setter in the digital age. *Business and Society*, 60(8), 1957–1986. <https://doi.org/10.1177/0007650320928969>
- Volberda, H. W., Khanagha, S., Baden-Fuller, C., Mihalache, O. R., & Birkinshaw, J. (2021). Strategizing in a digital world: Overcoming cognitive barriers, reconfiguring routines and introducing new organizational forms. *Long Range Planning*, 54(5), 102110. <https://doi.org/10.1016/j.lrp.2021.102110>
- Waheed, A., & Zhang, Q. (2022). Effect of CSR and ethical practices on sustainable competitive performance: A case of emerging markets from stakeholder theory perspective. *Journal of Business Ethics*, 175(4), 837–855. <https://doi.org/10.1007/s10551-020-04679-y>
- Wang, Y., Xu, Y. C., & Ni, X. (2022). The effect of facial resemblance on cooperative behavior in the sharing economy. *Journal of Global Information Management*, 30(1), 1–22. <https://doi.org/10.4018/jgim.315307>
- Warner, K. S. R., & Wäger, M. (2019). Building dynamic capabilities for digital transformation: An ongoing process of strategic renewal. *Long Range Planning*, 52(3), 326–349. <https://doi.org/10.1016/j.lrp.2018.12.001>
- Wu, F., & Cavusgil, S. T. (2006). Organizational learning, commitment, and joint value creation in interfirm relationships. *Journal of Business Research*, 59(1), 81–89. <https://doi.org/10.1016/j.jbusres.2005.03.005>
- Xie, Y., Chen, Z., Boadu, F., & Tang, H. (2022). How does digital transformation affect agricultural enterprises' pro-land behavior: The role of environmental protection cognition and cross-border search. *Technology in Society*, 70, 101991. <https://doi.org/10.1016/j.techsoc.2022.101991>
- Zhong, X., Chen, W., & Ren, G. (2022). The impact of corporate social irresponsibility on emerging-economy firms' long-term performance: An explanation based on signal theory. *Journal of Business Research*, 144, 345–357. <https://doi.org/10.1016/j.jbusres.2022.02.005>