



Research Article

Business model innovation, digital organizational culture, and bank performance: The role of digital technologies and top management mindfulness

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ABSTRACT

Digital technologies have changed our lives. This digital move is not limited to a particular area or a sector. It has also changed the way of doing business, but the opportunities associated with this digitalization are not yet appropriately identified. Appropriate action to respond to new avenues can substantially change business performance. This research presents a framework that suggests that the development of digital organizational culture and innovation in business models support digital technology value development and digitization, ultimately improving business performance. The collected data from banks working in Pakistan were analyzed with smart PLS. The results revealed that business model innovation, business digitization, and top management mindfulness boost the banks' performance. In contrast, digital organizational culture and digital technologies value development have no association with bank performance. Further, top management mindfulness has no moderating effect on studied relationships. By adopting innovation and necessary developments, banks can improve their performance significantly.

Keywords: *Business Model Innovation; Organizational Culture; Digitization; Digital Technology; Management Mindfulness; Firm Performance*

1. INTRODUCTION

Good performance of a business is the wish of all businessmen, but rapid technological changes are a severe concern for the organizations of the current era. In this scenario, business entities can bring innovation into their BM (Business Model) (Latifi et al., 2021). Referring to Teece (2010), BM is the source that explains the business's layout plan. It is based on developing strategic plans to accomplish organizational goals (Nunes & Pereira, 2021). It is compulsory in the early stage of business but to remain competitive; a firm should reform it over time (Zott & Amit, 2010).

In contrast, BMI (Business Model Innovation) is the means to bring innovation to conventional BM (Sorescu, 2017). BMI is the compulsion for the competitiveness of business entities (Nunes & Pereira, 2021). According to Trapp et al. (2018), the process of conducting business in an organization to capitalize on future opportunities and enhance corporate

profit is called BMI. By using BMI, companies discover new avenues of revenue generation and value addition for the company and its stakeholders (Casadesus-Masanell & Zhu, 2013). Uber in transport, Walit in retail, southwest in airlines, and Dell in computers are the best examples of BMI. They brought novelty to their BM and gained the best performance (Latifi et al., 2021).

In recent times, BMI has gained significant importance in academics (Nunes & Pereira, 2021; Pedersen et al., 2018; Schneider & Spieth, 2013). It has been studied as a novel concept in the domain of marketing (Storbacka et al., 2012), innovation and entrepreneurship (George & Bock, 2011), and management (Zott & Amit, 2008). Besides academics, BM and BMI grabbed the industries' attention (Aspara et al., 2010; Foss & Saebi, 2017; Latifi et al., 2021). As BMI is a new concept compared to BM, fewer studies are available on it. Numerous studies have been conducted on BM (Bhatti et al., 2021). Further, BMI is a critical phenomenon; therefore, it is essential to conduct studies on it to answer its hindrances, antecedents, and facilitators (Foss & Saebi, 2017). Moreover, it is not a well-developed domain, and numerous gaps demand academics' consideration (Nunes & Pereira, 2021). Furthermore, Silva et al. (2019), underlined that less research is available, especially in developing countries. This research tries to cover the gap in the existing literature by empirically testing the moderated mediated model linked with BMI in the banking industry of Pakistan.

The trend of digitalization is increasing day by day, and the connection of organizations through ICT (Information & communication technologies) is a new development in the industry. This advancement aims to create end-to-end digitalization in a new digital ecosystem. 3D printing, augmented reality, advanced algorithms, mobile phones, and cloud computing are examples of this emerging trend (Martínez-Caro et al., 2020). No doubt, recognition of ICT is increasing while considering it a vital source of innovation; companies are using it to introduce new working styles and products to boost their revenues. ICT is essential for internal and external innovation processes. Further there are three components of the ICT value-added process, i.e., embracing the ICT (digitization), ICT development, and effect on FP (Firm Performance). There are noticeable changes in the organizational environment and working style after the induction of DT (Digital Technologies) (Martínez-Caro et al., 2020).

Moreover, digitization became the cause of the emergence of new BM. On the other hand, several questions arise regarding the adaption of the digital economy by organizations and their people (Kane et al., 2015). Culture is the most influential factor in implementing new digital technology. For instance, companies having flexible cultures can get an advantage over inflexible cultures (McDermott & Stock, 1999). In order to support digitization, DC (digital culture) must be used in an organization to promote transformation. DC needs to be studied for effective and practical digitization management (Martínez-Caro et al., 2020).

TMM (Top Management Mindfulness) is the organizational capability involved in all management functions such as planning, organizing, controlling, technological change management, etc. Digital transformation brings a significant technological change and directly impacts concerned persons (McAvoy et al., 2013). Attentiveness and awareness are considered mindfulness (Langer, 1989). These activities become the behaviours that show

particular responses, so it is essential to know and study mindfulness (Dernbecher & Beck, 2017) and its impact on performance (Bhatti et al., 2021). In literature, the concept of mindfulness has not yet been discussed (Dernbecher & Beck, 2017).

This study has four notable contributions. First, to cover the gap in the literature, this study investigates the mediating role of business digitization (BD) and digital technologies value development (DTVVD) between the relationship of BMI and digital organizational culture (DOC) with bank performance (BP) while taking the moderating role of TMM. Second, the findings of the current study have provided notable insights which are helpful for managers as well as policymakers to devise their future strategies. Third, this study has provided statistical proof of the insignificant role of TMM between BMI and BP, a notable and motivating factor for future researchers to study these phenomena in more depth. Fourth, in this study, researchers made a considerable addition to the body of literature by examining the less focused area, which will help the managers to adapt technologies rationally for reduction of their cost, enhancement of their performance, and optimal use of firm recourses.

2. LITERATURE REVIEW

2.1. BUSINESS MODEL INNOVATION (BMI)

BM has emerged as a viable topic in management sciences despite conceptual multiplication (Foss & Saebi, 2017). George and Bock (2011), said It had been defined in several ways, especially in organizational studies (Magretta, 2002), the procedure for turning an invention into values (Chesbrough, 2010), informational and resource-sharing networks (Timmers, 1998), in organizational operations, designs and strategies are integrated (Slywotzky & Wise, 2003). But research community has a different view on BMI (Martínez-Caro et al., 2020). For instance, Khanagha et al. (2014), considered it a procedure or transformation. Whereas Berman (2012) said BMI is an outcome. Volberda et al. (2018), proposed four dimensions of BMI based on their characteristics: renewal, replication, customer, and strategy-driven. It is evident from the research that novelty in one element, like value proposition, brings transformation in other aspects of BM (Demil & Lecocq, 2010). Therefore, it is concluded that change in a single unit can affect the entire BM (Futterer et al., 2018).

BMI is a transformational organizational process requiring suitable learning mechanisms, leadership, and organizational capabilities (Foss & Saebi, 2017). This study used the definition presented by Osterwalder and Pigneur (2010), as BMI is a spectrum of modification from basic to broader level in several components of BM. Finally, scholars categorized the BMI as an innovation in their current BM. Spieth and Schneider (2016) suggested that BMI only impacts a specific element of BM, i.e., value creation. However, Lindgardt et al. (2012), said its effect on more than one component of BM which are interrelated. In this regard, Osterwalder and Pigneur (2010), presented the framework which shows that BMI is the mixture of nine elements that provide clear directions by following an organization to innovate and operate their existing BM.

2.2. BUSINESS DIGITIZATION (BD), DIGITAL TECHNOLOGIES VALUE DEVELOPMENT (DTVD), AND DIGITAL ORGANIZATIONAL CULTURE (DOC)

In the age of technology, DT is necessary to run the business smoothly and to get a competitive edge, which is mandatory for existence in high competition (Martínez-Caro et al., 2020). According to Salo (2006), the term digitizing refers to the process of converting data and keeping it in digital format. The modification in DT changes a firm's BM, especially its core elements. Thus, digitization allows excellent reliability and flexibility and saves costs in various tasks (Breeding, 1989). Due to this, many businesses, regardless of industry and sector, have shifted their infrastructure to the digital platform for better interrelationships among procedures (Bhatti et al., 2021), services, processes, products, firm capabilities, and networks (Bharadwaj et al., 2013). In the history of technological advancement, especially in the business sector, only a few entities were focused on technology. They ignored the investment in the most impacting factor, i.e., organizational capabilities (Martínez-Caro et al., 2020).

However, the introduction of DT does not ensure its fruitful application (Martínez-Caro et al., 2020). In case of a collision between the technology system and organizational culture (OC), the system will be modified according to the current scenario or rejected (Cooper, 1994). Whereas many researchers believe that culture can be created and managed actively (Block, 2003), experts refer to the DC, mandatory for digitization, as an acceptable OC (Duerr et al., 2018). As a result, DC is a mode by which a firm embarks on planning for digital policies in a dynamic environment. OC must be motivational enough to accept the challenges as the first step in digitization (Martínez-Caro et al., 2020). Firms should recognize and remove the hurdles in their culture that hamper the progress of BD and pave the way for success for BD. Due to the failure of technology deployment, several organizations could not meet the exceptions because they did not develop the culture, processes, and mindset to adopt change (Martínez-Caro et al., 2020). Managers usually underestimate or sometimes ignore the importance of OC in evaluating failure or success in adapting emerging technologies (Klepper & Hoffman, 2000). It is hard to examine the influence of OC in the acceptance of new technology successfully, but there is no doubt about the impact of OC on technology adaption (Martínez-Caro et al., 2020). Previous research recommended that compatibility between OC and new technologies is essential for the firm to get a prospective advantage associated with the new system (Büschgens et al., 2013; Cooper, 1994). Referring to Martinsons and Chong (1999), a superior technology could be undermined if it conflicts with the existing setup. In the subject of digitalization, Martínez-Caro et al. (2020), considered the OC a vital element for digital transformation. Thus, DC is a prerequisite for the progress of a successful BD (Martínez-Caro et al., 2020).

Previous researchers studied the relationship of OC with performance Gordon and DiTomaso (1992), innovation (Büschgens et al., 2013), leadership (Bass & Avolio, 1993), job satisfaction (Belias & Koustelios, 2014) and information technology (Klepper & Hoffman, 2000). Moreover, Hortinha et al. (2011), and Yang et al. (2012), found a positive relationship between innovation and performance. Further, they found the same relationship between technology orientation and product innovation. In contrast Spanjol et al. (2011), and Zhou et

al. (2005), found this relationship conditional. Further existing literature suggests that the fit between OC and the new technological system is vital for potential benefits (Büschgens et al., 2013; Cooper, 1994). As the DC develops, the behavior of the members working in an organization ultimately adds value to DT and becomes a vital source for an organization (Hartmann, 2006). Based on the above argument and the interconnected relationships of BMI, DOC, BD, and DTVD in the literature, we propose the hypothesis below:

H1: Business-model innovation has a positive relationship with business digitization

H2: Business-model innovation positively relates to digital technologies value development.

H3: Digital organizational culture has a positive relationship with business digitization.

H4: Digital organizational culture has a positive relation with digital technologies value development.

2.3. BMI AND PERFORMANCE

Organizational outcomes are linked with innovation in several positive ways, including adaptability to uncertain conditions Bhatti et al. (2020), and better relationships with stakeholders (Christofi et al., 2018). Recently, scholars researched the relationship between BMI and FP (Bouwman et al., 2018). According to the public and corporate sector survey, firms with outclassed financial performance are more conscious about BMI than underperforming firms (Pohle & Chapman, 2006). Giesen et al. (2007), also studied the relationship of BMI with FP and concluded that industry players pay double attention to BMI as others.

In contrast, Aspara et al. (2010), commented that BMI may be associated with R&D expense, staff turnover, product failure risk, and other factors that may require a company to pursue different approaches, adversely impacting their performance. As a result, the link between BMI and FP is more complicated than often imagined (Pedersen et al., 2018). Based on the results drawn from most studies conducted on BMI and FP, a positive association is supposed between them. Because a firm can enhance performance by changing strategy, policies, and procedures, increasing revenue streams, and reducing costs (Pedersen et al., 2018). Based on these arguments, we supposed that BMI and other study variables directly correlate with BP.

H5: Business-model innovation has a positive relation with bank performance

H6: Digital organizational culture has a positive relation with bank performance

H7: Digitization has a positive relation with bank performance.

2.4. DIGITAL ORGANIZATIONAL CULTURE (DOC) AND PERFORMANCE

The notion of OC was promoted in the 1980s. OC means how people think and their behaviour under the influence of their thinking (Ke & Wei, 2008). According to Barney (1991), a combination of beliefs, assumptions, symbols, and values following these firms performing their business is known as OC. Further, Deshpande and Webster Jr (1989), said

OC is the complete set of understating and assumptions regarding the functioning of firms. Langan-Fox and Tan (1997), mentioned a few issues of OC. First, it is fixed and has resisted change. Second, it is usually considered for granted. Third, members of the organization generate it. Fourth, it combines collective understanding. Despite it, OC is valued because it gives the foundation of competitive advantage over the rivals (Barney, 1991). Moreover, due to organizational changes, OC plays a vital role in the project's success, Ke & Wei (2008), especially in developing novel DT in an organization (Martínez-Caro et al., 2020).

If it incorporated OC with the digital field, in that case, it is commented that in the age of the digital labour force, every organization should promote and expand digital practices at workplaces respectively (Duerr et al., 2018). Based on these thoughts, this study conceptualized the DOC as the set of shared beliefs and exceptions regarding organizational functions in the digital framework by following the definition proposed by (Deshpande & Webster Jr, 1989). Collecting artifacts is the primary belief; a newcomer can feel, hear and witness these traits. Moreover, moral values, beliefs, standards, and norms can be understood by conversation. Furthermore, unconscious behaviours can be noticed by observations (Gordon & DiTomaso, 1992).

Duerr et al. (2018), recommended implementing the same approach in the digital framework. Artifacts turned into a manifesto by change of structures because of internal and external collaboration, sharing responsibilities among different units for the success of digital innovation, and employees' involvement in getting innovative ideas in digital transformation. Generally, it is assumed that OC is stable and gives a foundation to its employee to identify the change and ensure implementation of adapting behaviours according to the situation of that specific firm. Further, no organization can change its culture; it can motivate its employees to adopt digitization. OC can be developed gradually rather than through a complete change, which is nearly impossible.

Moreover, a firm can utilize its current cultural strength for change. The existing behaviours of employees in favour of a new digital approach can be used to develop DC. Establishing a collaborative environment, appreciation for innovation and creativity, and support to meet challenges promote DC in an organization at all levels (Kane et al., 2015).

In literature, OC has been studied in different ways. For instance, Gordon and DiTomaso (1992) found a positive relationship with performance. Limited investigations on DOC, such as work done by Martínez-Caro et al. (2020), are available. To fill the gap in the literature, we propose the following hypotheses.

H8: Digital technologies value development has a positive relation with bank performance

H9: Top management mindfulness has a positive relation with bank performance

H10: Business digitization is a mediator between business-model innovation and bank performance.

H11: Digital technologies value development acts as a mediator between business-model innovation and bank performance

H12: Business digitization mediates between digital organizational culture and bank performance.

H13: Digital technologies value development is a mediator between digital organizational culture and bank performance.

2.5. TOP MANAGEMENT MINDFULNESS (TMM)

In psychology, a person's cognitive capabilities are referred as mindfulness (Langer & Moldoveanu, 2000). Referring to Langer (1989), mindfulness is the quality of being vigilant, open to new ideas, aware of the live environment, and thoughtful. Therefore, they create an innovative procedure or modify an existing one by responding to environmental change quickly (Langer & Moldoveanu, 2000). A timely and appropriate response can become the foundation of innovative steps (Van de Ven, 1993). So, mindfulness is essential in improving performance while recognizing circumstances that require innovation and execution (Swanson & Ramiller, 2004). Ray et al. (2011), related mindfulness to market innovation. Schuh et al. (2019), considered it employee performance. Although the relationship of mindfulness with performance has grabbed the attention of researchers, literature is scarce on it (King & Haar, 2017). The banking industry is an important sector of the economy. Like all other sectors, this industry is also linked with DT. Based on the above argument, mindfulness also affects digital innovation (Swanson & Ramiller, 2004). Mindfully, management functions help achieve accurate and reliable operations output (Butler & Gray, 2006). So mindful organizations can get the advantage of technologies in digital transformation (Li et al., 2021). According to the upper-echelon theory, a firm's outputs are based on the cognitive structure of the firm's management (Christofi et al., 2019). It also claimed that TMM is involved in the opportunity identification and decision-making process. So, keeping in view the above arguments, this study proposes the following hypothesis. Moreover based on the above literature review, this study proposes the following research model in Fig. 1.

H14: Top management mindfulness moderates between business-model innovation and bank performance.

H15: Top management mindfulness acts as a moderator between business digitization and bank performance

H16: Top management mindfulness acts as a moderator between digital organizational culture and bank performance.

H17: Top management mindfulness acts as a moderator between digital technologies value development and bank performance.

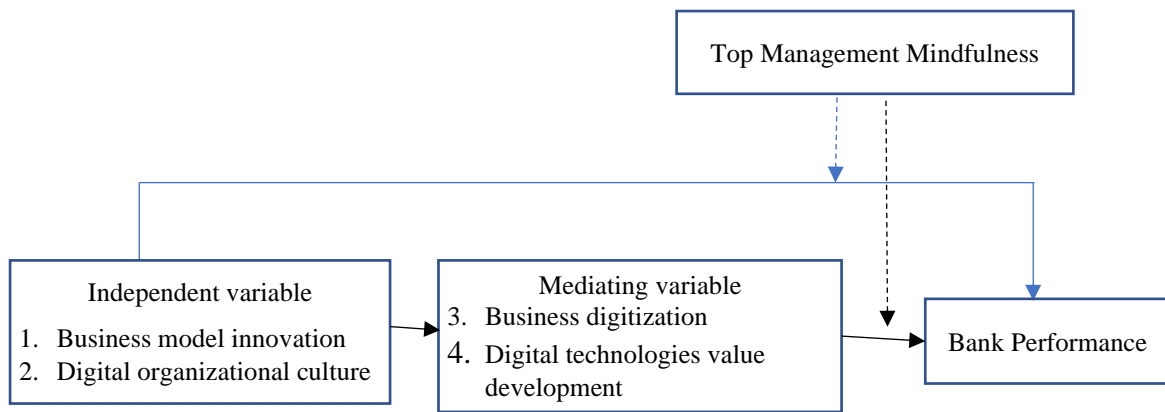


Fig. 1. Proposed Research Models.

3. METHODOLOGY

3.1. SAMPLE DESIGN AND DATA COLLECTION

For this research, twenty-two commercial banks operational in two major cities (Lahore and Faisalabad) of Pakistan were taken as the target sample. The purpose of this study was to collect quantitative data for statistical analysis and to test hypotheses. By simple random sampling, cross-sectional data were collected for the respondents from October 2021 to November 2021. All the respondents participated willingly. In this regard, returned responses were 515 out of 1000 distributed. In scrutiny, additional 17 questionnaires were eliminated due to incomplete information. Finally, 498 responses were considered valid and used for data analysis. The overall response and valid response rate was 51.5% and 49.8%, respectively. That is good enough (Farouk et al., 2016).

3.2. MEASURES

Constructs were measured with scales adapted from existing studies after thoroughly reviewing relevant literature. DOC was measured with four items which were adapted from Denison and Mishra (1995), Büschgens et al. (2013), and Martínez-Caro et al. (2020). Three items were taken from Salo (2006) and Bowersox et al. (2005), to measure the BD. A scale based on three items given by Martínez-Caro et al. (2020), and Leischnig et al. (2016), for the assessment of DTVD was adapted for this study. The measurement of the seven-item BMI scale was adapted from Latifi et al. (2021). Further, TMM was measured using a scale taken from Bhatti et al. (2021), having three items. Moreover, the measurement of FP was based on nine items adapted from Wamba et al. (2017). Five-point Likert scales were used to measure the constructs, i.e., “strongly agree” (5) and “strongly disagree” (1).

In order to check the content validity, the questionnaire was sent to five experts. Among these experts, three were assistant professors specialized in banking and finance, and two were executives of two banks. To ensure clarity, the researcher conducted the pilot study before the final data collection. In this regard, data were obtained from fifty respondents working in different banks. The researchers applied the reliability analysis to check the internal consistency of the scales. The entire process confirmed that the adapted scale is satisfactory without any amendment.

4. FINDINGS

For data analysis, smart PLS 3 was used due to its popularity and advanced calculation methods. It is a flexible approach to model building as compared to other methods and it also exempts the assumption of normal distribution of data (Hair et al., 2016). Further, the researcher applied the PLS algorithm and bootstrapping to estimate the factor loading, coefficient, and significance level. The conceptual model was evaluated with the measurement & structural model.

4.1. DATA NORMALITY

Data normality is not essential for analysis with PLS-SEM as it is a nonparametric technique. However, according to Hair et al. (2007), data normality must be considered before inferential statistics. Therefore, the researchers followed the guidelines of (Munro, 2005), checked the data normality through histogram plots, kurtosis, and skewness, and found the values of kurtosis and skewness between the recommended range, i.e., -2 and +2. Thus, it is confirmed that our study has no data normality issue.

4.2. COMMON METHOD BIAS (CMB)

The researchers collected the primary data from one source, i.e., bank employees; thus, there may be chances of CMB in the data set due to the research design. Kock (2015) suggested that the collinearity test can determine CMB while employing PLS-SEM. While following (Kock, 2015), the researchers tested the CMB through VIF (Variance inflation factors). The analysis revealed that the VIF values of all the studied variables were less than the highest recommended value of VIF, i.e., 3.3. thus, our data is free from CMB.

4.3. DEMOGRAPHIC

This study section represents the participants' demographics, as shown in Table 1.

Table 1. Demographics

Demographic Variables	Categories	Frequency (N = 498)	Percentage
Gender	Male	324	65.06%
	Female	174	34.94%
Age	Up to 25 Year	118	23.69%
	26 - 45 Year	300	60.24%
	46 - 55 Year	70	14.06%
	56 + Year	10	2.01%
Education	Bachelor's	130	26.10%
	Master's	342	68.67%
	PhD	20	4.02%
	Others	6	1.20%
Nature of employment	Contractual	92	18.47%
	Permanent	406	81.53%
Length of service	Up to 1Year	108	21.69%
	02 - 05 Year	148	29.72%
	05 - 10 Year	150	30.12%
	10 + Year	92	18.47%

4.4. MEASUREMENT MODEL ASSESSMENT

In measurement model assessment, values of loading, average variance extract (AVE), and composite reliability (C.R.) were used to assess the convergent validity. The measurement model assessment presented in Fig. 2. Moreover, Table 2 shows that all the values of factor loadings, C.R., and AVE are higher than the suggested values, i.e., 0.60, 0.70, and 0.50, respectively (Hair et al., 2019). Further, the instruments' reliability was assessed using Cronbach's alpha value. The alpha coefficient for all study variables was larger than 0.700, which fulfilled the acceptance criteria. Because Hair et al. (2019), said reliability is poor if the value is smaller than 0.600, but it is acceptable if its value is equal to or above 0.700, and if the value increases from 0.800, it is considered good.

Table 2. Convergent Validity

Constructs (Cronbach α)	Items	Loadings	CR	AVE
Business Digitization ($\alpha = 0.715$)	BD-1	0.699	0.770	0.528
	BD-2	0.724		
	BD-3	0.755		
Business model innovation ($\alpha = 0.758$)	BMI-1	0.663	0.806	0.509
	BMI-2	0.702		
	BMI-3	0.741		
	BMI-4	0.746		
Bank Performance ($\alpha = 0.802$)	BP-1	0.716	0.897	0.522
	BP-2	0.736		
	BP-3	0.723		
	BP-4	0.767		
	BP-5	0.780		
	BP-6	0.697		
	BP-7	0.724		
	BP-8	0.626		
Digital technologies value development ($\alpha = 0.756$)	DTVD-1	0.754	0.795	0.565
	DTVD-2	0.762		
	DTVD-3			
Digital organizational culture ($\alpha = 0.727$)	DOC-1	0.691	0.777	0.538
	DOC-2	0.763		
	DOC-3	0.745		
Top management mindfulness ($\alpha = 0.764$)	TMM-1	0.698	0.805	0.580
	TMM-2	0.758		
	TMM-3	0.824		

4.5. DISCRIMINANT-VALIDITY (D-V)

D-V describes the level at which variables are truly unique (Hair et al., 2019). This study applied the two approaches for the evaluation of discriminant validity. The first FLC (Fornell-Larcker Criterion) was introduced by (Fornell & Larcker, 1981), and the second HTMT (Heterotrait-Monotrait Ratio) was given by (Henseler et al., 2015).

4.6. THE FLC

D-V was checked with FLC. For all variables, the square of AVE was used and contrasted with the correlation coefficient of other variables (Fornell & Larcker, 1981). The diagonal line

and square of the AVE were presented along with a correlation matrix. Hair et al. (2019) stated that for the establishment of D-V, the correlation squared should be smaller than AVE². The analysis showed that for all the variables, AVE² was more than the other variables correlation. The off-diagonal values were smaller than the diagonal values in their respective rows and columns, which confirmed that all constructs have sufficient discriminant validity.

In addition to FLC, cross-loading analysis for all items was also performed. According to J. Hair et al. (2019), loading should be equal to or greater than 0.500; preferably, it should be 0.700 or more. Therefore, items with small values should remove. Further, Hair et al. (2016), suggest that items of a particular construct must have significance to their respective construct. In this research, there was no issue of cross-loading because the value of items loading was greater than the cross-loading of other variables.

4.7. THE HTMT

Henseler et al. (2015), suggested an advanced technique to check D-V. Further, Henseler et al. (2015), endorsed the FLC as an effective approach in determining D-V, but in several research problems, FLC does not work. Therefore, this study also used the HTMT ratio to assess D-V for all study variables, as shown in Table 3. Entire values are below 0.900, as suggested by (Gold et al., 2001). Therefore, D-V for all variables has been established.

Table 3. HTMT Ratio

Variable	Business Digitization	Business Model Innovation	Bank Performance	Digital Technologies Value Development	Digital Organizational Culture	Top Management Mindfulness
Business Digitization						
Business Model Innovation	0.717					
Bank Performance	0.566	0.695				
Digital Technologies Value Development	0.705	0.625	0.512			
Digital Organizational Culture	0.790	0.762	0.543	0.815		
Top Management Mindfulness	0.779	0.557	0.546	0.738	0.830	

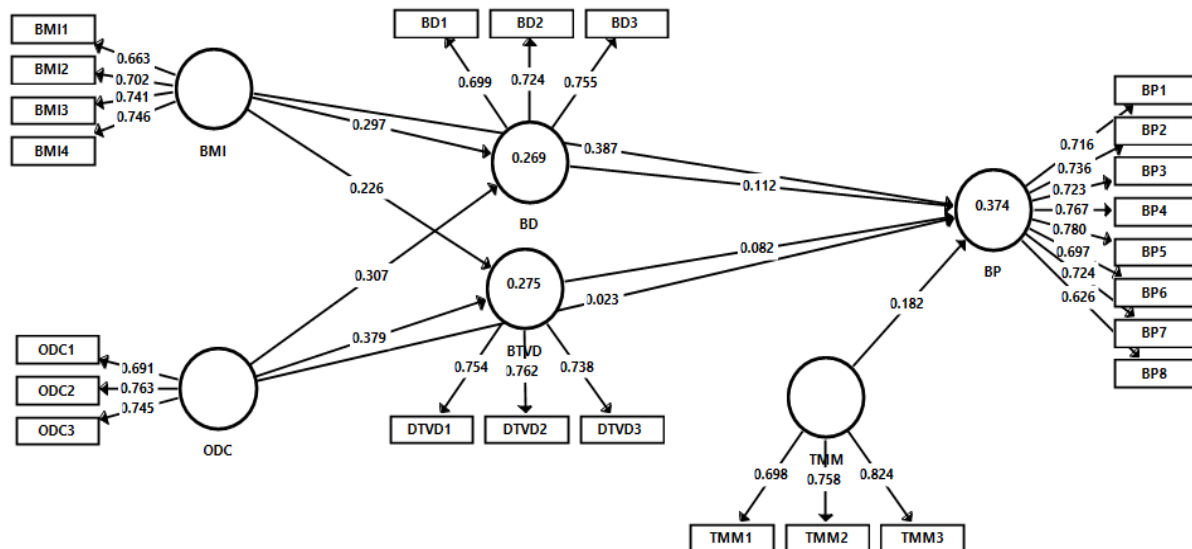


Fig. 2. Measurement Model Assessment

4.8. STRUCTURAL MODEL ASSESSMENT

After the measurement model assessment, the next step was to carry out PLS-SEM. The model's significance was determined using the *t* value, S.E, and path coefficients. The bootstrapping approach in smart-PLS-3 was used to check the direct and indirect effects in hypothesis testing (Hair et al., 2013). The structural model assessment presented in Fig. 3.

Further, as shown in Table 4, BMI had a positive relationship with BD ($\beta = 0.297$, $t = 6.095$, $LL = 0.198$, $UL = 0.387$), with DTVD ($\beta = 0.226$, $t = 4.139$, $LL = 0.127$, $UL = 0.326$) and BP ($\beta = 0.387$, $t = 6.730$, $LL = 0.272$, $UL = 0.492$). Therefore, H1, H2, and H5 were supported. Moreover, DOC has a positive association with BD ($\beta = 0.307$, $t = 7.272$, $LL = 0.205$, $UL = 0.389$) and DTVD ($\beta = 0.379$, $t = 8.411$, $LL = 0.287$, $UL = 0.448$) but had an insignificant relationship with BP ($\beta = 0.023$, $t = 0.191$, $LL = -0.080$, $UL = 0.131$) due to existence of zero between lower and upper limit. So H3 and H4 were supported, whereas H6 was not supported. Furthermore, BD ($\beta = 0.112$, $t = 2.289$, $LL = 0.011$, $UL = 0.201$) and TMM ($\beta = 0.182$, $t = 3.283$, $LL = -0.076$, $UL = 0.274$) had positive relationship with BP. DTVD ($\beta = 0.082$, $t = 1.535$, $LL = -0.025$, $UL = 0.176$) had an insignificant relationship with BP due to zero between LL and UP, which indicates an insignificant relationship. Hence, H7 and H9 were supported, but H8 was not supported.

As shown in Table 5, BD significantly mediated between BMI and BP ($\beta = 0.033$, $t = 2.044$; $LL = 0.004$, $UL = 0.071$) and the association between DOC and BP ($\beta = 0.034$, $t = 2.254$; $LL = 0.005$, $UL = 0.068$). Therefore, H10 & H12 were supported. Furthermore, DTVD had no mediation between BMI and BP ($\beta = 0.018$, $t = 2.254$; $LL = -0.005$, $UL = 0.048$) and DOC and BP ($\beta = 0.031$, $t = 1.531$; $LL = -0.009$, $UL = 0.071$). Thus, H11 and H13 were rejected.

Table 6 displays the moderation of TMM on BMI ($\beta = -0.035$, $t = 0.377$; $LL = -0.183$, $UL = 0.221$), BD ($\beta = 0.016$, $t = 0.268$; $LL = -0.124$, $UL = 0.122$), DOC ($\beta = -0.004$, $t = 0.070$; $LL = -0.103$, $UL = 0.098$) and DTVD ($\beta = -0.066$, $t = 1.168$; $LL = -0.176$, $UL = 0.060$) with BP. The results showed that H14, H15, H16, and H17 were rejected. Further, Tables 7 and 8 show the value of f^2 , R^2 , $Ajd-R^2$, and

Q2, the exogenous variables contributed to 26.9% of BD and 27.5% of DTVD. Moreover, 37.4% of the variance in BP was also explained by all predictors jointly.

Table 4. Path Analysis

Hyp	Relationships	B	S. E	T	L.L	U. L	Result
H1	Business Model Innovation -> Business Digitization	0.297	0.050	6.095**	0.198	0.387	Supported
H2	Business Model Innovation -> Digital Technologies Value Development	0.226	0.050	4.139**	0.127	0.326	Supported
H3	Digital Organizational Culture -> Business Digitization	0.307	0.046	7.272**	0.205	0.389	Supported
H4	Digital Organizational Culture -> Digital Technologies Value Development	0.379	0.042	8.411**	0.287	0.448	Supported
H5	Business Model Innovation -> Bank Performance	0.387	0.057	6.730**	0.272	0.492	Supported
H6	Digital Organizational Culture -> Bank Performance	0.023	0.054	0.191	-0.080	0.131	Not-supported
H7	Business Digitization -> Bank Performance	0.112	0.048	2.289*	0.011	0.201	Supported
H8	Digital Technologies Value Development -> Bank Performance	0.082	0.052	1.535	-0.025	0.176	Not-supported
H9	Top Management Mindfulness -> Bank Performance	0.182	0.050	3.283**	0.076	0.274	Supported

Note: (* $p < 0.05$); (** $p < 0.01$)

Table 5. Indirect-Effects

Hyp	Relationships	B	S. E	t	L.L	U. L	Result
H10	Business Model Innovation -> Business Digitization -> Bank Performance	0.033	0.016	2.044*	0.004	0.071	Supported
H11	Business Model Innovation -> Digital Technologies Value Development -> Bank Performance	0.018	0.013	1.392	-0.005	0.048	Not-supported
H12	Digital Organizational Culture -> Business Digitization -> Bank Performance	0.034	0.015	2.254*	0.005	0.068	Supported
H13	Digital Organizational Culture -> Digital Technologies Value Development -> Bank Performance	0.031	0.02	1.531	-0.009	0.071	Not-supported

Table 6. Interaction term

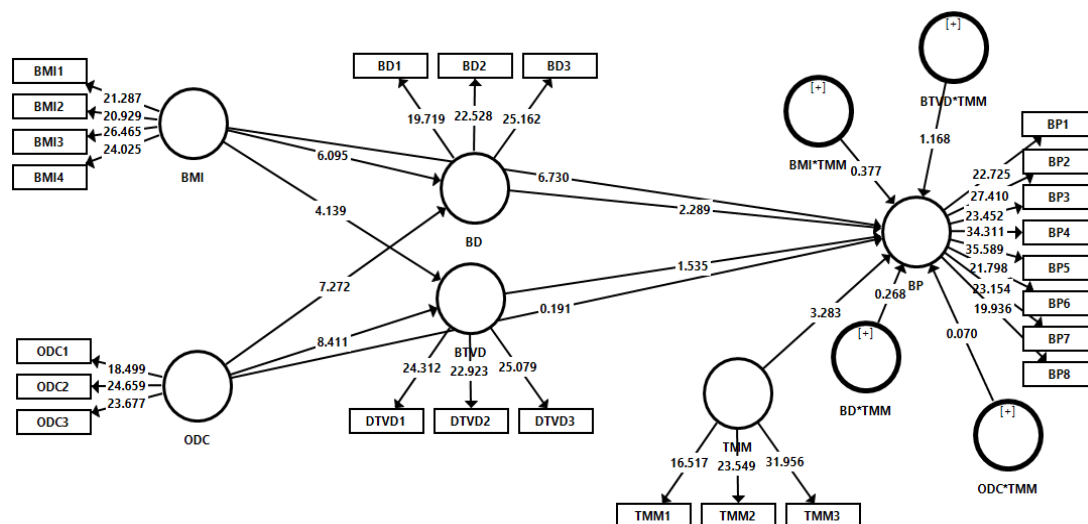
Hyp	Relationships	B	S. E	t	L.L	U. L	Result
H14	Business Model Innovation*Top Management Mindfulness -> Bank Performance	-0.035	0.099	0.377	-0.183	0.221	Not-supported
H15	Business Digitization*Top Management Mindfulness -> Bank Performance	0.016	0.063	0.268	-0.124	0.122	Not-supported
H16	Digital Organizational Culture*Top Management Mindfulness -> Bank Performance	-0.004	0.052	0.070	-0.103	0.098	Not-supported
H17	Digital Technologies Value Development*Top Management Mindfulness -> Bank Performance	-0.066	0.058	1.168	-0.176	0.060	Not-supported

Table 7. F Square

Path Coefficient	F square
Business Digitization -> Bank Performance	0.015
Business Model Innovation -> Business Digitization	0.097
Business Model Innovation -> Bank Performance	0.167
Business Model Innovation -> Digital Technologies Value Development	0.060
Digital Technologies Value Development -> Bank Performance	0.011
Digital Organizational Culture -> Business Digitization	0.107
Digital Organizational Culture -> Bank Performance	0.003
Digital Organizational Culture -> Digital Technologies Value Development	0.162
Top Management Mindfulness -> Bank Performance	0.039

Table 8. R Square, Adjusted R square, and Q Square

Variable	R Square	Adjusted R Square	Q Square
Business Digitization	0.269	0.266	0.138
Bank Performance	0.374	0.368	0.186
Digital Technologies Value Development	0.275	0.272	0.148

**Fig. 3. Structural Model Assessment**

5. DISCUSSION AND CONCLUSION

Recently, DT changed the lives of individuals as well as companies. Everyone uses gadgets like mobile phones connected to the internet (Martínez-Caro et al., 2020). People use smartphones, tablets, computers, and laptops for online shopping, maps or other apps to find a way, and social media to have fun or express their views (Blazquez & Domenech, 2018). These activities create a considerable amount of digital data, a rich value-creation source for many companies. For instance, digital data is being used to know the latest trends and forecasting of sale volume of particular products and services. Businesses are recommended to invest and adopt DT to transform their existing BM to BMI and to be competitive. In contrast, the process flow by which a firm can get a competitive advantage while adopting new technologies that enhance its performance is unclear to practitioners and scholars. In this domain, few studies are available that tried to explain the process by which the adaption of DT is responsible for enhanced performance (Martínez-Caro et al., 2020).

This study aimed to understand the implementation of digital initiatives that enhance performance. BMI and DOC were taken as the antecedent of performance in the banking sector of Pakistan through BD and DTVD. The idea of BMI and OC is interlinked. Because BMI is the innovation of existing BM, and OC is the acceptance and utilization of the innovative system.

The study revealed that BMI supports BD (H1) and DTVD (H2). The reason behind this is the involvement of innovation in BM. The up-gradation of BM is impossible without adapting and utilizing new technologies, i.e., DTVD, and converting existing data into digital format, i.e., BD. For a change of BM, which is compulsory for survival and competitive advantage, the promotion of BD and DTVD is highly recommended. Further, results showed that DOC promotes the advancement of BD (H3) and DTVD (H4). Both hypotheses were supported according to the work of Martínez-Caro et al. (2020).

BMI is one of the most vital elements for enhancing performance, and it is regarded as a significant capability of an organization (Aspara et al., 2010; Chesbrough, 2010). A failure in the innovation of existing BM may bring heavy losses in the shape of losing market share (Osterwalder & Pigneur, 2010). Bhatti et al. (2021), and this study proved this argument (H5). Büschgens et al. (2013), concluded that OC is mandatory in accepting the new system. Although DOC has a direct relationship with BD and DTVD, it has no direct linkage with BP, as empirically shown in (H6). The analysis showed that BD positively correlates with BP (H7).

Furthermore, besides the heavy investment by the firms in new technologies, it is essential to adapt and use these technologies in day-to-day operations to get the benefit. Ongori and Migiro (2010), agree that a company's success is impossible without accepting new technologies. By utilizing the technology in routine, desired results can be achieved. For instance, by reducing the turnaround time, automation of administrative controls, and using real-time transactions and internal & external communication, resources such as time and cost can be saved. Theoretically, this saving ultimately enhances performance, but empirically it was not proven that DTVD helps to improve BP (H8) in Pakistan's banking industry. So, the results are not according to previous results (Dubey et al., 2019; Richards et al., 2019; Zhu & Kraemer, 2005)

The researchers are focused and recommend studying BMI and its factors from different angles (Zott et al., 2011). While reviewing, it was revealed that TMM is an influential factor that can change the existing model and influence the OC. But limited research has been conducted on it so far. However, few indirect relationships between TMM with BMI and FP are available (Bhatti et al., 2021). This research also contributed to the literature by revealing that TMM positively affects BP (H9). In the case of mediation, BD mediates the relationship between BMI and BP (H10). Although BMI and DOC have a positive impact on DTVD, there is no indirect effect of DTVD empirically proved between the association of BMI and BP (H11).

Further, BD intervenes in the relationship between DOC and BP, as shown in (H12). Martínez-Caro et al. (2020), also had the same results for H10 and H12, as BD helps to enhance FP. In contrast, DTVD has no mediating role between DOC and BP (H13), which

indicates that several other factors influence the relationship discussed in H11 and H13, which needs consideration by managers and practitioners.

Existing literature suggests that functions performed by management mindfully bring accuracy and reliability to a firm's operational outputs (Butler & Gray, 2006). So mindful organizations obtain the advantage of technologies in digital transformation (Li et al., 2021). It is evident that TMM helps to enhance BP, as shown on H9, but in the case of moderation, TMM did not moderate the BMI (H14), BD (H15), DOC (H16), and DTVD (H17) with BP in the context of Pakistan's banking industry.

This study presents the following implications for managers: the significant role of BMI and DOC in facilitating BD and DTVD. Thus the managers should formulate the policies accordingly. The managers must anticipate and guard the organizational reaction hampering the changes (Klepper & Hoffman, 2000). Ambiguous strategic direction results in difficulty for the achievement of fruitful results from new initiatives. Therefore, managers should analyze the cultural attributes and take necessary steps to eliminate those attributes which create hurdles or hamper the process of BD while developing the DOC that promotes successful digital technology exploitation (Harper & Utley, 2001). Further, this study indicated that bringing change in BM and developing DOC support BD. So, the managers can get benefits from it by enhancing their FP. As FP is the ultimate goal of any organization, thus managers should focus on the adaptation of technologies rationally, which are helpful for banks in reducing their costs, enhancing their performance, and optimal use of bank recourses in the scenario of high competition.

5.1. LIMITATION AND FUTURE DIRECTION

Just like other studies, some limitations are also associated with this research. These limitations allow future researchers to expand this study in digitalization. Firstly, this study was done on the banking sector of Pakistan, and the entire industry was taken as a whole. In the future, multi-group analysis (MGA) should be performed for better understating and comparing banks within the industry. Moreover, comparison can be based geographically on rural or urban areas, big or small cities, or their development, such as developed or developing countries. Secondly, cross-sectional data were collected for this study, in future longitudinal data can be collected for analysis and to measure the change over time. Third, other sectors can be studied to check the impact of the digital move on these sectors. Fourth, in future research, bank performance can be measured with secondary data to compare results with existing studies.

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- Aspara, J., Hietanen, J., & Tikkanen, H. (2010). Business model innovation vs replication: financial performance implications of strategic emphases. *Journal of Strategic Marketing*, 18(1), 39-56. doi: <https://doi.org/10.1080/09652540903511290>
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of management*, 17(1), 99-120. doi: <https://doi/abs/10.1177/014920639101700108>
- Bass, B. M., & Avolio, B. J. (1993). Transformational leadership and organizational culture. *Public administration quarterly*, 17(1), 112-121. doi: <https://www.jstor.org/stable/40862298>
- Belias, D., & Koustelios, A. (2014). Organizational culture and job satisfaction: A review. *International review of management and marketing*, 4(2), 132-149. doi: <https://dergipark.org.tr/en/pub/irmm/issue/32080/355053>
- Berman, S. J. (2012). Digital transformation: opportunities to create new business models. *Strategy & Leadership*, 40(2), 16-24. doi: <https://doi.org/10.1108/10878571211209314>
- Bharadwaj, A., El Sawy, O. A., Pavlou, P. A., & Venkatraman, N. (2013). Digital business strategy: toward a next generation of insights. *MIS quarterly*, 37(2), 471-482. doi: <https://www.jstor.org/stable/43825919>
- Bhatti, S. H., Santoro, G., Khan, J., & Rizzato, F. (2021). Antecedents and consequences of business model innovation in the IT industry. *Journal of Business Research*, 123, 389-400. doi: <https://doi.org/10.1016/j.jbusres.2020.10.003>
- Bhatti, S. H., Zakariya, R., Vrontis, D., Santoro, G., & Christofi, M. (2020). High-performance work systems, innovation and knowledge sharing: An empirical analysis in the context of project-based organizations. *Employee Relations: The International Journal*, 43(2), 438-458. doi: <https://doi.org/10.1108/ER-10-2019-0403>
- Blazquez, D., & Domenech, J. (2018). Big Data sources and methods for social and economic analyses. *Technological Forecasting and Social Change*, 130, 99-113. doi: <https://doi.org/10.1016/j.techfore.2017.07.027>

- Block, L. (2003). The leadership-culture connection: An exploratory investigation. *Leadership & Organization Development Journal*, 24(6), 381-334. doi: <https://doi.org/10.1108/01437730310494293>
- Bouwman, H., Nikou, S., Molina-Castillo, F. J., & de Reuver, M. (2018). The impact of digitalization on business models. *Digital Policy, Regulation and Governance*, 20(2), 105-124. doi: <https://doi.org/10.1108/DPRG-07-2017-0039>
- Bowersox, D. J., Closs, D. J., & Drayer, R. W. (2005). The digital transformation: technology and beyond. *Supply Chain Management Review*, 9(1), 22-29. doi: <https://trid.trb.org/view/751438>
- Breeding, K. J. (1989). *Digital design fundamentals*: Prentice-Hall, Upper Saddle River, New Jersey. doi: <https://dl.acm.org/doi/abs/10.5555/73949>.
- Büschgens, T., Bausch, A., & Balkin, D. B. (2013). Organizational culture and innovation: A meta-analytic review. *Journal of Product Innovation Management*, 30(4), 763-781. doi: <https://doi.org/10.1111/jpim.12021>
- Butler, B. S., & Gray, P. H. (2006). Reliability, mindfulness, and information systems. *MIS quarterly*, 30(2), 211-224. doi: <https://doi.org/10.2307/25148728>
- Casadesus-Masanell, R., & Zhu, F. (2013). Business model innovation and competitive imitation: The case of sponsor-based business models. *Strategic management journal*, 34(4), 464-482. doi: <https://doi.org/10.1002/smj.2022>
- Chesbrough, H. (2010). Business model innovation: opportunities and barriers. *Long range planning*, 43(2-3), 354-363. doi: <https://doi.org/10.1016/j.lrp.2009.07.010>
- Christofi, M., Vrontis, D., Leonidou, E., & Thrassou, A. (2018). Customer engagement through choice in cause-related marketing: A potential for global competitiveness. *International Marketing Review*, 37(4), 621-650. doi: <https://doi.org/10.1108/IMR-04-2018-0133>
- Christofi, M., Vrontis, D., Thrassou, A., & Shams, S. R. (2019). Triggering technological innovation through cross-border mergers and acquisitions: a micro-foundational perspective. *Technological Forecasting and Social Change*, 146, 148-166. doi: <https://doi.org/10.1016/j.techfore.2019.05.026>
- Cooper, R. B. (1994). The inertial impact of culture on IT implementation. *Information & Management*, 27(1), 17-31. doi: [https://doi.org/10.1016/0378-7206\(94\)90099-X](https://doi.org/10.1016/0378-7206(94)90099-X)
- Demil, B., & Lecocq, X. (2010). Business model evolution: in search of dynamic consistency. *Long range planning*, 43(2-3), 227-246. doi: <https://doi.org/10.1016/j.lrp.2010.02.004>
- Denison, D. R., & Mishra, A. K. (1995). Toward a theory of organizational culture and effectiveness. *Organization science*, 6(2), 204-223. doi: <https://doi.org/10.1287/orsc.6.2.204>
- Dernbecher, S., & Beck, R. (2017). The concept of mindfulness in information systems research: a multi-dimensional analysis. *European Journal of Information Systems*, 26(2), 121-142. doi: <https://doi.org/10.1057/s41303-016-0032-z>
- Deshpande, R., & Webster Jr, F. E. (1989). Organizational culture and marketing: defining the research agenda. *Journal of marketing*, 53(1), 3-15. doi: <https://doi.org/10.1177/002224298905300102>
- Dubey, R., Gunasekaran, A., Childe, S. J., Roubaud, D., Wamba, S. F., Giannakis, M., & Foropon, C. (2019). Big data analytics and organizational culture as complements to swift trust and collaborative performance in the humanitarian supply chain. *International Journal of Production Economics*, 210, 120-136. doi: <https://doi.org/10.1016/j.ijpe.2019.01.023>
- Duerr, S., Holotiuk, F., Wagner, H.-T., Beimborn, D., & Weitzel, T. (2018). *What is digital organizational culture? Insights from exploratory case studies*. Paper presented at the Proceedings of the 51st Hawaii International Conference on System Sciences. doi:<http://hdl.handle.net/10125/50529>.
- Farouk, S., Elanain, H. M. A., Obeidat, S. M., & Al-Nahyan, M. (2016). HRM practices and organizational performance in the UAE banking sector: The mediating role of organizational innovation.

- International Journal of Productivity and Performance Management*, 65(6), 773-791. doi: <https://doi.org/10.1108/IJPPM-01-2016-0010>
- Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics: Sage Publications Sage CA: Los Angeles, CA. doi: <https://doi.org/10.1177/002224378101800313>.
- Foss, N. J., & Saebi, T. (2017). Fifteen years of research on business model innovation: How far have we come, and where should we go? *Journal of management*, 43(1), 200-227. doi: <https://doi.org/10.1177/0149206316675927>
- Futterer, F., Schmidt, J., & Heidenreich, S. (2018). Effectuation or causation as the key to corporate venture success? Investigating effects of entrepreneurial behaviors on business model innovation and venture performance. *Long range planning*, 51(1), 64-81. doi: <https://doi.org/10.1016/j.lrp.2017.06.008>
- George, G., & Bock, A. J. (2011). The business model in practice and its implications for entrepreneurship research. *Entrepreneurship Theory and Practice*, 35(1), 83-111. doi: <https://doi.org/10.1111/j.1540-6520.2010.00424.x>
- Giesen, E., Berman, S. J., Bell, R., & Blitz, A. (2007). Three ways to successfully innovate your business model. *Strategy & Leadership*, 35(6), 27-33. doi: <https://doi.org/10.1108/10878570710833732>
- Gold, A. H., Malhotra, A., & Segars, A. H. (2001). Knowledge management: An organizational capabilities perspective. *Journal of management information systems*, 18(1), 185-214. doi: <https://doi.org/10.1080/07421222.2001.11045669>
- Gordon, G. G., & DiTomaso, N. (1992). Predicting corporate performance from organizational culture. *Journal of management studies*, 29(6), 783-798. doi: <https://doi.org/10.1111/j.1467-6486.1992.tb00689.x>
- Hair, Hult, G. T. M., Ringle, C., & Sarstedt, M. (2016). A primer on partial least squares structural equation modeling (PLS-SEM) *Sage Publications*, 38(2), 220-307. doi: <http://hdl.handle.net/11420/4083>
- Hair, Money, A. H., Samouel, P., & Page, M. (2007). Research methods for business. *Education+ Training*, 49(4), 336-337. doi: <https://doi.org/10.1108/et.2007.49.4.336.2>
- Hair, J., Risher, J., Sarstedt, M., & Ringle, C. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, 31(1), 2-24. doi: <https://doi.org/10.1108/EBR-11-2018-0203>
- Hair, J. F., Ringle, C. M., & Sarstedt, M. (2013). Partial least squares structural equation modeling: Rigorous applications, better results and higher acceptance. *Long range planning*, 46(1-2), 1-12. doi: <https://ssrn.com/abstract=2233795>
- Harper, G. R., & Utley, D. R. (2001). Organizational culture and successful information technology implementation. *Engineering Management Journal*, 13(2), 11-15. doi: doi.org/10.1080/10429247.2001.11415111
- Hartmann, A. (2006). The role of organizational culture in motivating innovative behaviour in construction firms. *Construction innovation*, 6(3), 159-172. doi: <https://doi.org/10.1108/14714170610710712>
- 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. doi: <https://doi.org/10.1007/s11747-014-0403-8>
- Hortinha, P., Lages, C., & Lages, L. F. (2011). The trade-off between customer and technology orientations: impact on innovation capabilities and export performance. *Journal of International Marketing*, 19(3), 36-58. doi: <https://doi.org/10.1509/jimk.19.3.36>
- Kane, G. C., Palmer, D., Phillips, A. N., Kiron, D., & Buckley, N. (2015). Strategy, not technology, drives digital transformation. *MIT Sloan Management Review and Deloitte University Press*, 14(1-25). Retrieved from https://www.cubility.com.au/wp-content/uploads/2018/11/dup_strategy-not-technology-drives-digital-transformation.pdf.

- Ke, W., & Wei, K. K. (2008). Organizational culture and leadership in ERP implementation. *Decision support systems*, 45(2), 208-218. doi: <https://doi.org/10.1016/j.dss.2007.02.002>
- Khanagha, S., Volberda, H., & Oshri, I. (2014). Business model renewal and ambidexterity: structural alteration and strategy formation process during transition to a Cloud business model. *R&D Management*, 44(3), 322-340. doi: <https://doi.org/10.1111/radm.12070>
- King, E., & Haar, J. M. (2017). Mindfulness and job performance: A study of Australian leaders. *Asia Pacific Journal of Human Resources*, 55(3), 298-319. doi: <https://doi.org/10.1111/1744-7941.12143>
- Klepper, R., & Hoffman, N. (2000). Assimilation of new information technology and organizational culture: a case study. *Wirtschaftsinformatik*, 42(4), 339-346. doi: <https://doi.org/10.1007/BF03250750>
- Kock, N. (2015). Common method bias in PLS-SEM: A full collinearity assessment approach. *International Journal of e-Collaboration (ijec)*, 11(4), 1-10. doi: DOI: 10.4018/ijec.2015100101
- Langan-Fox, J., & Tan, P. (1997). Images of a culture in transition: Personal constructs of organizational stability and change. *Journal of Occupational and Organizational Psychology*, 70(3), 273-293. doi: <https://doi.org/10.1111/j.2044-8325.1997.tb00648.x>
- Langer, E. J. (1989). Minding matters: The consequences of mindlessness–mindfulness *Advances in experimental social psychology*. (Vol. 22, pp. 137-173): Elsevier. doi: [https://doi.org/10.1016/S0065-2601\(08\)60307-X](https://doi.org/10.1016/S0065-2601(08)60307-X).
- Langer, E. J., & Moldoveanu, M. (2000). Mindfulness research and the future. *Journal of social issues*, 56(1), 129-139. doi: doi: <https://doi.org/10.1111/0022-4537.00155>
- Latifi, M.-A., Nikou, S., & Bouwman, H. (2021). Business model innovation and firm performance: Exploring causal mechanisms in SMEs. *Technovation*, 107, 102274. doi: <https://doi.org/10.1016/j.technovation.2021.102274>
- Leischnig, A., Woelfl, S., & Ivens, B. (2016). *When does digital business strategy matter to market performance?* Paper presented at the Thirty Seventh International Conference on Information Systems, Dublin. Retrieved from https://web.archive.org/web/20200323204535id_/https://aisel.aisnet.org/cgi/viewcontent.cgi?article=1110&context=icis2016.
- Li, H., Wu, Y., Cao, D., & Wang, Y. (2021). Organizational mindfulness towards digital transformation as a prerequisite of information processing capability to achieve market agility. *Journal of Business Research*, 122, 700-712. doi: <https://doi.org/10.1016/j.jbusres.2019.10.036>
- Lindgardt, Z., Reeves, M., Stalk, G., & Deimler, M. S. (2012). Business model innovation: When the Game Gets Tough, Change the Game. *The Boston Consulting Group, Boston, MA*, 118, 291-298. doi: <https://doi.org/10.1002/9781119204084.ch40>
- Magretta, J. (2002). Why business models matter: Harvard Business School Boston, MA. Retrieved from http://designblog.uniandes.edu.co/blogs/dise2102pc/files/2013/08/Why_Business_Models_Matter2.pdf.
- Martínez-Caro, E., Cegarra-Navarro, J. G., & Alfonso-Ruiz, F. J. (2020). Digital technologies and firm performance: The role of digital organisational culture. *Technological Forecasting and Social Change*, 154, 119962. doi: <https://doi.org/119910.111016/j.techfore.112020.119962>.
- Martinsons, M. G., & Chong, P. K. (1999). The influence of human factors and specialist involvement on information systems success. *Human relations*, 52(1), 123-152. doi: <https://doi.org/10.1023/A:1016976501131>
- McAvoy, J., Nagle, T., & Sammon, D. (2013). Using mindfulness to examine ISD agility. *Information Systems Journal*, 23(2), 155-172. doi: <https://doi.org/10.1111/j.1365-2575.2012.00405.x>
- McDermott, C. M., & Stock, G. N. (1999). Organizational culture and advanced manufacturing technology implementation. *Journal of Operations Management*, 17(5), 521-533. doi: [https://doi.org/10.1016/S0272-6963\(99\)00008-X](https://doi.org/10.1016/S0272-6963(99)00008-X)

- Munro, B. H. (2005). *Statistical methods for health care research* (Vol. 1): lippincott williams & wilkins. Retrieved from [https://books.google.com.pk/books?hl=en&lr=&id=a34z_Ah2-LgC&oi=fnd&pg=PA1&dq=Munro,+B.+H.+\(2005\).+Statistical+methods+for+health+care+rese arch+\(Vol.+1\):+lippincott+williams+%26+wilkins.&ots=UJYWu0a-YA&sig=LFKV3YNZhrdb_S-c4GYDisrs4EQ&redir_esc=y#v=onepage&q&f=false](https://books.google.com.pk/books?hl=en&lr=&id=a34z_Ah2-LgC&oi=fnd&pg=PA1&dq=Munro,+B.+H.+(2005).+Statistical+methods+for+health+care+rese arch+(Vol.+1):+lippincott+williams+%26+wilkins.&ots=UJYWu0a-YA&sig=LFKV3YNZhrdb_S-c4GYDisrs4EQ&redir_esc=y#v=onepage&q&f=false).
- Nunes, M. P., & Pereira, R. D. V. (2021). Business Model Innovation and Business Performance In An Innovative Environment. *International Journal of Innovation Management*, 25(03), 2150036. doi: <https://doi.org/10.1142/S1363919621500365>
- Ongori, H., & Migiro, S. O. (2010). Information and communication technologies adoption in SMEs: literature review. *Journal of Chinese Entrepreneurship*, 2(1), 93-104. doi: <https://doi.org/10.1108/17561391011019041>
- Osterwalder, A., & Pigneur, Y. (2010). *Business model generation: a handbook for visionaries, game changers, and challengers* (Vol. 1): John Wiley & Sons. Retrieved from [https://books.google.com.pk/books?hl=en&lr=&id=UzuTAAwAAQBAJ&oi=fnd&pg=PP1&dq=Osterwalder,+A.,+%26+Pigneur,+Y.+\(2010\).+Business+model+generation:+a+handbook+for+vi sionaries,+game+changers,+and+challengers+\(Vol.+1\):+John+Wiley+%26+Sons.&ots=yYHUC dD7Ww&sig=8tr5vgozQFpdDK5kOrNpMiyXGCA&redir_esc=y#v=onepage&q&f=false](https://books.google.com.pk/books?hl=en&lr=&id=UzuTAAwAAQBAJ&oi=fnd&pg=PP1&dq=Osterwalder,+A.,+%26+Pigneur,+Y.+(2010).+Business+model+generation:+a+handbook+for+vi sionaries,+game+changers,+and+challengers+(Vol.+1):+John+Wiley+%26+Sons.&ots=yYHUC dD7Ww&sig=8tr5vgozQFpdDK5kOrNpMiyXGCA&redir_esc=y#v=onepage&q&f=false).
- Pedersen, E. R. G., Gwozdz, W., & Hvass, K. K. (2018). Exploring the relationship between business model innovation, corporate sustainability, and organisational values within the fashion industry. *Journal of Business Ethics*, 149(2), 267-284. doi: <https://doi.org/10.1007/s10551-016-3044-7>
- Pohle, G., & Chapman, M. (2006). IBM's global CEO report 2006: business model innovation matters. *Strategy & Leadership*, 34(5), 34-40. doi: <https://doi.org/10.1108/10878570610701531>
- Ray, J. L., Baker, L. T., & Plowman, D. A. (2011). Organizational mindfulness in business schools. *Academy of Management Learning & Education*, 10(2), 188-203. doi: <https://doi.org/10.5465/amle.10.2.zqr188>
- Richards, G., Yeoh, W., Chong, A. Y. L., & Popovič, A. (2019). Business intelligence effectiveness and corporate performance management: an empirical analysis. *Journal of Computer Information Systems*, 59(2), 188-196. doi: <https://doi.org/10.1080/08874417.2017.1334244>
- Salo, J. (2006). Business relationship digitization: what do we need to know before embarking on such activities? *Journal of Electronic Commerce in Organizations (JECO)*, 4(4), 75-93. DOI: 10.4018/jeco.2006100104
- Schneider, S., & Spieth, P. (2013). Business model innovation: Towards an integrated future research agenda. *International Journal of Innovation Management*, 17(01), 1340001. doi: <https://doi.org/10.1142/S136391961340001X>
- Schuh, S. C., Zheng, M. X., Xin, K. R., & Fernandez, J. A. (2019). The interpersonal benefits of leader mindfulness: A serial mediation model linking leader mindfulness, leader procedural justice enactment, and employee exhaustion and performance. *Journal of Business Ethics*, 156(4), 1007-1025. doi: <https://doi.org/10.1007/s10551-017-3610-7>
- Silva, D., Ghezzi, A., de Aguiar, R., Cortimiglia, M., & ten Caten, C. (2019). Lean Startup, Agile Methodologies and Customer Development for business model innovation: A systematic review and research agenda. *International Journal of Entrepreneurial Behavior & Research*, 26(4), 595-628. doi: <https://doi.org/10.1108/IJEBR-07-2019-0425>
- Slywotzky, A., & Wise, R. (2003). Three keys to groundbreaking growth: a demand innovation strategy, nurturing practices, and a chief growth officer. *Strategy & Leadership*, 31(5), 12-19. doi: <https://doi.org/10.1108/10878570310492014>
- Sorescu, A. (2017). Data-driven business model innovation. *Journal of Product Innovation Management*, 34(5), 691-696. doi: <https://doi.org/10.1111/jpim.12398>
- Spanjol, J., Qualls, W. J., & Rosa, J. A. (2011). How many and what kind? The role of strategic orientation in new product ideation. *Journal of Product Innovation Management*, 28(2), 236-250. doi: <https://doi.org/10.1111/j.1540-5885.2010.00794.x>

- Spieth, P., & Schneider, S. (2016). Business model innovativeness: designing a formative measure for business model innovation. *Journal of business Economics*, 86(6), 671-696. doi: <https://doi.org/10.1007/s11573-015-0794-0>
- Storbacka, K., Frow, P., Nenonen, S., & Payne, A. (2012). Designing business models for value co-creation *Special issue—Toward a better understanding of the role of value in markets and marketing* (pp. 51-78): Emerald Group Publishing Limited. doi: [https://doi.org/10.1108/S1548-6435\(2012\)0000009007](https://doi.org/10.1108/S1548-6435(2012)0000009007).
- Swanson, E. B., & Ramiller, N. C. (2004). Innovating mindfully with information technology. *MIS quarterly*, 28(4), 553-583. doi: <https://doi.org/10.2307/25148655>
- Teece, D. J. (2010). Business models, business strategy and innovation. *Long range planning*, 43(2-3), 172-194. doi: <https://doi.org/10.1016/j.lrp.2009.07.003>
- Timmers, P. (1998). Business models for electronic markets. *Electronic markets*, 8(2), 3-8. DOI: 10.1080/10196789800000016
- Trapp, M., Voigt, K.-I., & Brem, A. (2018). Business models for corporate innovation management: Introduction of a business model innovation tool for established firms. *International Journal of Innovation Management*, 22(01), 1850007. doi: <https://doi.org/10.1142/S136391961850007X>
- Van de Ven, H. (1993). The development of an infrastructure for entrepreneurship. *Journal of Business venturing*, 8(3), 211-230. doi: [https://doi.org/10.1016/0883-9026\(93\)90028-4](https://doi.org/10.1016/0883-9026(93)90028-4)
- Volberda, H., Van Den Bosch, F. A., & Heij, K. (2018). *Reinventing business models: How firms cope with disruption*: Oxford University Press. Retrieved from [https://books.google.com.pk/books?hl=en&lr=&id=O3w7DwAAQBAJ&oi=fnd&pg=PP1&dq=Volberda,+H.,+Van+Den+Bosch,+F.+A.,+%26+Heij,+K.+\(2018\).+Reinventing+business+models:+How+firms+cope+with+disruption:+Oxford+University+Press.&ots=PTaE66lVWc&sig=2A9EdT0GhaP3xzIKElbBLgQ4QDI&redir_esc=y#v=onepage&q&f=false](https://books.google.com.pk/books?hl=en&lr=&id=O3w7DwAAQBAJ&oi=fnd&pg=PP1&dq=Volberda,+H.,+Van+Den+Bosch,+F.+A.,+%26+Heij,+K.+(2018).+Reinventing+business+models:+How+firms+cope+with+disruption:+Oxford+University+Press.&ots=PTaE66lVWc&sig=2A9EdT0GhaP3xzIKElbBLgQ4QDI&redir_esc=y#v=onepage&q&f=false)
- Wamba, S. F., Gunasekaran, A., Akter, S., Ren, S. J.-f., Dubey, R., & Childe, S. J. (2017). Big data analytics and firm performance: Effects of dynamic capabilities. *Journal of Business Research*, 70, 356-365. doi: <https://doi.org/10.1016/j.jbusres.2016.08.009>
- Yang, Y., Wang, Q., Zhu, H., & Wu, G. (2012). What are the effective strategic orientations for new product success under different environments? An empirical study of Chinese businesses. *Journal of Product Innovation Management*, 29(2), 166-179. doi: <https://doi.org/10.1111/j.1540-5885.2011.00900.x>
- Zhou, K. Z., Yim, C. K., & Tse, D. K. (2005). The effects of strategic orientations on technology-and market-based breakthrough innovations. *Journal of marketing*, 69(2), 42-60. doi: <https://doi.org/10.1509/jmkg.69.2.42.60756>
- Zhu, K., & Kraemer, K. L. (2005). Post-adoption variations in usage and value of e-business by organizations: cross-country evidence from the retail industry. *Information systems research*, 16(1), 61-84. doi: <https://doi.org/10.1287/isre.1050.0045>
- Zott, C., & Amit, R. (2008). The fit between product market strategy and business model: Implications for firm performance. *Strategic management journal*, 29(1), 1-26. doi: <https://doi.org/10.1002/smj.642>
- Zott, C., & Amit, R. (2010). Business model design: An activity system perspective. *Long range planning*, 43(2-3), 216-226. doi: <https://doi.org/10.1016/j.lrp.2009.07.004>
- Zott, C., Amit, R., & Massa, L. (2011). The business model: recent developments and future research. *Journal of management*, 37(4), 1019-1042. doi: <https://doi.org/10.1177/0149206311406265>