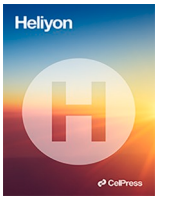
Heliyon 10 (2024) e40839

Contents lists available at ScienceDirect

Heliyon

journal homepage: www.cell.com/heliyon



Research article

How does digital leadership boost competitive performance? The role of digital culture, affective commitment, and strategic agility

Md Alamgir Mollah *, Ibrahim, Abdullah Al Masud, Md Sohel Chowdhury

Department of Management Studies, University of Barishal, Barishal-8254, Bangladesh

ARTICLE INFO

Keywords:
Digital leadership
Digital culture
Affective commitment
Strategic agility
Competitive performance

ABSTRACT

In the age of the digital revolution, businesses are working to become more sustainable. Specifically, when management settings change—which is closely tied to competitive performance—leadership is evolving into digital leadership. Drawing on the resource-based view (RBV) theory, this study focused on finding the interconnection between digital leadership (DL) and competitive performance (CP), as well as the mediating roles of affective commitment (AC) and digital culture (DC), including the moderating effects of strategic agility (SA).To find the results of the investigation, a total 233 sample data points were gathered from employees working in manufacturing and service organizations. The research hypotheses were tested using path analysis with the AMOS-24 program. The findings indicated that DL had no direct impact on CP. While digital culture has no mediation effect but affective commitment has a full mediation effect on the relationship between DL and CP, it also found that SA hasn't played any reinforcing role in the connection between DL and CP. This study contributes to the literature on affective commitment by stressing the role of digital leaders, DC, and AC in predicting long-term CP. In addition, this study adds value to the existing literature on dynamic capabilities and RBV theory by providing evidence for the role of DL in CP. As leadership leads, dynamic capabilities can play a crucial role in managing changing culture, affective commitment, and strategic thinking for CP in Bangladesh.

1. Introduction

After the COVID-19 pandemic, the business strategies and procedures are changing as a result of recent emergence of advance technology and digital transformation [1]. These modifications are pressurizing businesses to update their resources in order to persist competitive advantages. Also, scholars respond in time to explore and recognize determinants that justify organizational needs [2]. Additionally, the rise of artificial intelligence (AI), blockchain technology, big data, edge computing, cloud computing, and 5G are examples of how digital technology is growing and causing a new wave of industrial and economic upheaval that is drastically altering organizational management [3]. Therefore, globally minded nations invest significant financial resources in digital transformation. According to estimates, the Asia Pacific Region alone received over USD 380 billion in funding for digital transformation in 2019, and this amount is rising daily. The USD 1.2 trillion investments in digital transformation from 2020 to 2023 are expected to digitalize more than 65 % of the GDP of the Asia Pacific region [4]. Even though DL benefits businesses, a survey found that 60 % of Germans are afraid of the effects of digitalization because of robots in the workplace [5]. Executives need to have a vision for digitalization since

* Corresponding author.
E-mail address: alamgir1003@yahoo.com (M.A. Mollah).

https://doi.org/10.1016/j.heliyon.2024.e40839
Received 13 July 2024; Received in revised form 24 November 2024; Accepted 28 November 2024
Available online 1 December 2024

automated systems (robots) are used in smart industries in Bangladesh and artificial intelligence (AI) (Chat GPT, Bard, etc.) is booming in every business [6].

Digital leadership, which involves utilizing digital technologies and creating an environment conducive to innovation, is essential for modern enterprises. This transition is especially important in emerging economies like Bangladesh, where companies face specific challenges such as limited technology infrastructure, resource restrictions, and a quickly changing market environment. Digital leadership is defined as a leader's capacity to integrate digital technologies into business processes and develop an organizational change toward digital competence across the firm [7]. It requires creating a culture of ongoing learning, supporting innovation, and developing a strategic strategy for digital transformation. Good digital leaders encourage their workers to use digital tools, which increases the flexibility and competitive advantage of the company. The development of a digital culture is an essential part of DL [8]. The organizational culture that fosters decisions based on data, digital innovation, and collaborative work settings is known as "digital culture." It lays the groundwork for digital activities and plays critical to the effective implementation of digital plans [9]. A strong digital culture makes sure that everyone in the organizations is align with the objectives of the digital transformation, which makes transitions easier and increases productivity all around. Likewise, a digital culture tailored to university characteristics is another essential factor in inducing a well-structured system and high-quality educational environment for university and students.

Furthermore, affective commitment, or employees' emotional attachment and identification with their firm, is important in the digital transformation path. Employees with personal dedication are more likely to support and actively participate in digital activities [10]. This dedication can be promoted through a positive digital culture and inspirational DL, resulting in increased engagement and contribution to CP. Researchers tried to build the philosophical foundations of leadership, whereas professionals tended to absorb and implement leadership paradigms that resulted in increased organizational success. Leadership has captured the interest of scholars in the field of organizational behavior. The development of DL involves the integration of digital skills and leadership to optimize the advantages of digital technology and boost organizational performance. Strategic agility refers to a firm's ability to make significant promises while remaining agile enough to adapt to changing circumstances and disruptions. The organization's processes, activities, structures, culture, qualities, abilities, and relationships are structured to maintain flexibility in response to new developments [11]. In Bangladesh, where organizations face particular obstacles, understanding the connection between DL, DC, AC, and SA is critical for attaining long-term competitive success. Digital leaders may significantly increase organizational performance by cultivating a strong digital culture and increasing AC. Furthermore, SA can amplify the beneficial benefits of DL.

Furthermore, previous research suggested that DL influences could be used for key variables [12] and this study aims to find their role in CP. Al-Husban et al. [1] also suggested that the moderating function of SA or investigating the influence of DL on CP. On the other hand, the study showed the role of digital culture as a mediator between DL and organizational performance [13,14] but there is still a lack of research on the condition of competitive advantage from a developing country perspective. Building on this background, the study aims to fill up a literature gap by assessing the impact of DL on CP via the mediation effect of digital culture and affective commitment, as well as the moderating role of SA. Through this investigation, the research seeks to provide a comprehensive understanding of how DL can be leveraged to enhance CP, offering valuable insights for business leaders and policymakers in Bangladesh. This investigation will also contribute to the development of complex knowledge about the roles of culture and affective commitment in CP. In addition, culture encompasses the essential values, beliefs, and norms that align with strategic goals, foster innovation and agility, engage employees, and promote knowledge sharing. While AC shows the patterns of teamwork and collaboration, increased effort and productivity, adaptability, and resilience to stay competitive. Apart from this, the application of this examination to the industrial and service sectors—which are crucial to the economies of developing nations and play a major role in attracting foreign capital and promoting economic growth—represents a real contribution that policymakers can rely on in support of Bangladesh's goal of sustainable development?

Organizations in the twenty-first century face significant challenges in terms of environmental sustainability, scientific and technological research and development, and economic and social transformation, particularly competitiveness and reform. Digital leaders are vital to the firm; consequently, they address challenging issues while assisting employees in reaching their goals and improving morale. To explore the impact of DL on CP, they affect all aspects of the business, including organizational development, culture, atmosphere, and employee identification. As a result, experts from different times have diverse conceptions of what qualities of executives support company growth. This study, wants to examine the connection between DL and CP through uncovering the mediating function of DC and AC. The specific research questions and objectives are as follows:

RQ1. *What impact does DL have on employees' competitive performance for sustainability?*

RQ2. *What is the role of digital culture and affective commitment in the relationship between DL and competitive performance?*

RQ3. *What moderating impact does strategic agility play in the relationship between DL and competitive performance?*

This study's unique contribution is to present a complete analysis of the validity of DL on CP. The research paper is organized as follows: Part 1 familiarizes the study context and purposes; Part 2 defines the theoretical context, literate review, and hypothesis; Part 3 includes methodology; Part 4 results, Part 5 discussions and conclusion, implications and future research.

2. Literature review and hypothesis

2.1. Theoretical backgrounds

To conduct the investigation, this research focused on the dynamic capabilities [15–17] theory and RBV theory. Actually dynamic

capabilities theory has been widely used in challenging fields and for the purpose of resolving problems in the current workplace [15, 17,18]. Here, digital leaders' dynamic capabilities to integrate culture, strategy, and AC can enhance resources. The critical role of DL is evolving, as is the impact of employees' digital skill based capacity on organizational performance in Bangladesh, as leadership continues to expand along with the validation of the RBV. Competitive performance benefits greatly from DL. In particular, our model looked at the beneficial role that AC support and digital culture play as intermediaries between CP and DL in Bangladesh's sustainable development. The RBV was criticized, and in their critique, strategic agility scholars introduced three meta-capabilities: resource fluidity, collective commitment, and strategic sensitivity. These three capabilities must be attained simultaneously for an organization to be classified as strategically agile, and they provide clear guidelines for structuring thinking and implementation [19]. Table 1 shows the theoretical foundations for this study.

2.2. Digital leadership and competitive performance

Digital leadership is characterized as the combination of leadership skills and digital capabilities necessary to utilize the benefits of digital technology and improve business performance [8]. DL is built on merging leadership competencies with digital competencies to influence and encourage followers to achieve the organization's strategic goals [1]. Digital technology has a crucial role in pushing changes in numerous industries, resulting in two most prominent impacts: a broader exploration of potential and the efficacy and efficiency of cost spending [24]. When new skill sets are required to successful leading sustainability of firms in a changing digital world, therefore it has a positive impact. Better business performance follows from having a strong digital leader who contributes to improving the digital business strategy. Executives in businesses with a digital past are also more inclined to promote digital transformation throughout the organization, boosting productivity and accomplishing long-term objectives [3]. The previous study successfully proved that DL has a positive impact on innovation performance [13], open innovation [25], digital innovation [26], sustainable performance [27], and organizational performance [6]. However, none of the previous studies identified the effect of DL on CP in the context of IT sectors (see Table 2). Strategic alliances between manufacturers and suppliers can improve understanding of each other's needs and enhance customer service. Supplier integration can assist organizations in preparing for timely production by communicating information about demand, manufacturing time, and inventory obsolescence [28]. Organizations that promote learning, adaptation, and information sharing are better positioned to meet the challenges and opportunities posed by 4IR. Thus, this study assumed the subsequent hypothesis:

H1. *There is a positive connection between DL and competitive performance.*

2.3. Mediation effect of digital culture

Recently, scholars have studied and acknowledged the concerns surrounding DC as an integrated aspect of the organization in the era of modern technologies [21]. DL involves trusting people to engage in decision-making, sticking to their views, and promoting fair conversation to achieve goals. Employees who have some influence on decision-making with leaders tend to have higher levels of trust [37], which enhances performance. A previous study showed that DL is associated with organizational performance. Along with this, leaders' behavior and attitudes towards digitalization and organizational management shape organizational culture. Leader's role, behavior, and attitude affect the employee's emotions and ultimately their performance. Digital leadership involves trusting people to engage in decision-making, sticking to their views, and promoting fair conversation to achieve goals. A previous study showed that DL is associated with organizational performance. Along with this, leaders' behavior and attitudes towards digitalization and organizational management shape organizational culture. Leader's role, behavior, and attitude affect the employees' emotions and ultimately their performance. As per the discussion, there was a favorable correlation between a leader's style and their team members' dedication.

In the digital context, organizational culture is incorporated into organizational life, which refers to a shared set of values, conceptions, and beliefs regarding how business activities are organized in the digital sphere. Digital culture affects how employees behave when using technology in the workplace [38]. This culture may encompass adjustable and sustainable dexterity that welcome failure when evolving digital talent, as well as flexible and agile working techniques, digital mindset that highlights digital processes in new firms [3]. Additionally, DC impacts the behavioral shifts that result from the use of technology in an organization [39]. This culture might include flexible and agile working styles, a focus on data, adaptive and sustainable skill sets that welcome failure as part of the learning process for digital talents, and a mindset in startups that prioritizes digital processes, which ultimately affect CP for the

Table 1
Theoretical grounds.

Variables	Theory Used	Reference
Digital leadership	Dynamic capabilities Theory	[20]
Digital Culture	Resource Based View (RBV)	[3,21]
Affective Commitment	Resource Based View (RBV)	[22]
Strategic Agility	Paradox Theory	[11]
	The Dynamic Capability Theory	[23]
Competitive Performance	Resource Based View (RBV)	[2]

Source: Author's compilation

Table 2
Summary of the literature review.

Relationships	Sampling	Research Area	Findings	Reference (s)
DL to Competitive performance	Quantitative sample of 248 gathered	Jordan	Through the lens of innovation capabilities, the current showed that relationship between organizational performance and DL exits.	[1]
DL to Competitive performance	Based on 103 quantitative respondents	Central Java, Indonesia	The findings of this study infer that used by all parties involved to increase employee performance and preserve a sustainable competitive edge.	[29]
DL and organizational culture	Quantitative data collect from 227 SMEs	ICT industry in Pakistan.	The findings infers an organization's readiness for digital innovation may be predicted primarily by its digital organizational culture and skills.	[21]
DL to DC and Competitive performance	For the study 149 quantitative sample collected from the employees	South Korea	The association between DL and OP can be explained by the country's DC and digital competencies of the employees.	[3]
DC as mediation	Analyzed 102 new ventures using SEM	Germany, Berlin	DC mediates amid digital strategy and digital products/ process innovation	[30]
DC to employee performance	Collected 306 quantitative data form employees	Telecom industry of Jakarta and Bandung, Indonesia	DC did not positively effect on employees performance	[31]
DL to affective commitment	A total 46 samples gathered form marketing team	North Jakarta	This study looked at digital transformational leadership has insignificant effect on AC.	[32]
Affective commitment to performance	Total 212 quantitative data collected employees	Portugal	The results show that AC increase individuals performance	[33]
Affective commitment as mediation	Total 476 data quantitative collected from employees	Turkish health care professional	The results showed AC mediates between transformational leadership and individual preformation performance	[34]
SA as moderator	Total 233 data quantitative from	IT firms in Amman, Jordan	Results showed that SA did not moderate between technological innovation capabilities and firm performance	[35]
SA as moderator	Total 122 quantitative data were collected	SMEs in Saudi	The results showed that SA Entrepreneurship Orientation dimensions are positively associated with digital transformation within SMEs and that SA positively moderates	[36]

Source: Previous Literature

organizations. Previous research has used culture as a mediator between DL and organizational culture in Korean settings [6], between digital strategy and digitalization in new ventures [40], and between digital social responsibility and digital education in China [41]. However, mediation of DC in between DL and CP in developing countries is still missing. Therefore, it can be predicted that DC mediates the relationship between DL and organizational performance. Based on premises, this study proposes the following hypothesis:

H2. *Digital culture positively mediates the relationship between digital leadership and competitive performance. That is:*

H2a. There is a positive relationship between DL and DC.

H2b. There is a positive relationship between DC and CP.

2.4. Mediation effect of affective commitment

On the other hand, employees with AC are actively involved in the organization, providing new ideas and inventive solutions, and continuously increasing performance [29]. Affective commitment is positively impacted by transformational leadership [37]. Additionally, by boosting self-confidence, transformational leaders inspired staff members to prioritize the needs of the organization over their own, thereby increasing their AC. Affective commitment is also critical for developing long-term orientation and cooperative behavior in organizations. Workers who experienced higher levels of organizational support at work were more likely to exhibit AC to the company, and this AC would ultimately result in improved and higher performance [29]. Past studies noted that AC served as a link between transformative leadership and work performance. Affective commitment is a person's willingness to devote allegiance to the organization. Employees' emotional commitment demonstrates that the organization's service fits their demands, leading to improved job performance and loyalty [37].

In the realm of organizational behavior, it is a noteworthy variable with the ability to precisely forecast the effect on worker performance [42]. As a result of AC changing workers behavior in forms of psychological attitudes and inherent values, organizational success, employee performance, and citizenship behavior are the main ways that AC impacts an organization [42,43]. Affective commitment serves as a driver, increasing numerous competencies that benefit employees and, as a result, promoting employee performance, which, in turn, promotes employee performance. It is also critical for developing long-term orientation and cooperative behavior in organizations and emotional attachment to the organization is related to AC, as evidenced by the identification of employees who are extremely loyal to the organization [29]. Numerous previous studies have successfully demonstrated the mediating role of AC in various contexts, including corporate social responsibility and job satisfaction [44], organizational justice and job

performance in French SMEs [45], and work-life balance and employee performance in Korea [46]. But still, affective job commitment hasn't been applied empirically between DL and CP in developing country settings, which inspired us to apply it through this research approach. As a result, the following hypothesis was proposed:

H3. *Affective commitment positively mediates the relationship between digital leadership and competitive performance. That is:*

H3a. There is a positive relationship between digital leadership and affective commitment

H3b. There is a positive relationship between affective commitment and competitive performance.

2.5. Strategic agility as a moderator

Strategic agility refers to a firm's ability to make significant promises while remaining agile enough to adapt to changing circumstances and disruptions. The organization's processes, activities, structures, culture, qualities, abilities, and relationships are structured to maintain flexibility in response to new developments [11]. In today's fast-paced and changing business environment, project effectiveness depends critically on agility [47]. The notion of SA encompasses a multitude of fundamental competencies, such as accountability, aptitude, flexibility, and swiftness [48]. One of the agile association's aims is to satisfy consumers and representatives. The phrase agility refers to three major practices: covering and exploring previous information, reviewing current actions, and anticipating the future. According to this, companies must maintain a system of preparing and embracing a powerful scenario for appropriate decision-making [47,49]. Strategic agility is the capacity of an organization to recognize shifts in the business environment, including opportunities and dangers, and to react quickly by repurposing resources, procedures, and tactics. A thorough analysis of the SA literature demonstrates that agility can help an organization gain a competitive edge in the market by enabling it to succeed in a highly competitive environment through competencies, responsiveness, flexibility, and speed. Strategic agility denotes to a company's ability to continuously modify and adapt a core business's strategic direction in order to generate value for the company [23]. The previous study primarily deployed SA as a predictor variable. Several studies have utilized SA as a moderator between technological innovation capabilities and firm performance in Jordan's IT sectors [35]; and between B2B ecommerce adoption in the SME and manufacturing industries in Malaysia [50]. However, there is a limited body of research applying SA to the relationship between DL and CP. Based on the research discussion and motives, the following hypothesis is proposed:

H4. *Strategic agility moderates the effect of digital leadership on affective commitment.*

3. Research methodology

In the era of the Sustainable Development Goals (SDG), both digital professionals and DC contribute to CP. Fig. 1 displays the proposed paradigm for measuring the impact of DL on CP. Furthermore, research illustrates how DC and AC mediate and SA moderate the relationship between DL and CP.

3.1. Sampling and data collection

To conduct this study, this research has gathered information from different manufacturing, non-manufacturing, service and technology related workers information included in the survey through online system (see Appendix A). This study conveniently selected personnel as a purposive sampling methods who were enthusiastic to participate in the current inquiry. To collect data, researchers scheduled to the target respondents, IT employees who are working in different organizations. Most of the cases reached at the offices of the IT workers, informed them about the research and requested to complete either an offline or online questionnaire. In most cases, we collected the questionnaires either the following day or at a time convenient of the respondents. Additionally, we sent an email to the IT workers inviting them to participate in this survey. In this way to collect the data, we have used both online and offline questionnaire methods through a 5-point Likert scale, ranging from 1 to 5. Respondents completed these as research samples, indicating their level of agreement with certain topics and providing response choices that ranged from strongly disagree to strongly agree. A total of 500 pieces of questionnaires were sent to the respondents, and around 250 (50 %) were returned. After data cleaning, 233 remained for the final analysis. The sample includes respondents of various genders, ages, education levels, and job experiences.

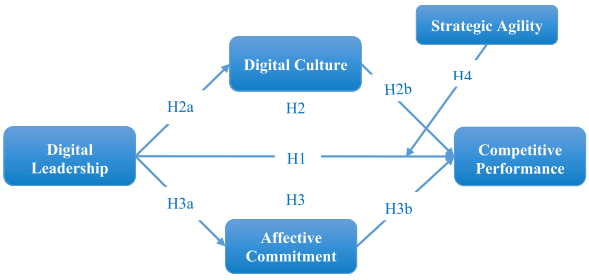


Fig. 1. Research model.

Female respondents made up 33.9 % of the poll, and male respondents made up 66.1 %. Of those that answered, 56.2 % were 26–29 years old, and the lowest respondent of. 4 % was 34–37 years old. About 47.6 % of survey respondents had postgraduate degrees, and 2.1 % of the lowest respondents had PhD degrees. Most of the respondents, 12.6 %, have 1–5 years of job experience (Table 3).

3.2. Measurement of items

In this study, all the constructs proposed are based on previous literature reviews. To measure DL, this study utilized a questionnaire from a previous study [3,51] that included six items. Then, to measure the DC, this study considered five items used by Duerr et al. [52]. Next, to measure AC, this study has chosen eight items from Khalili and Asmawi [53]. Lastly, to measure the CP of the organizations, this study has taken eight items [2]. Finally, to calculate SA, this research has selected eight items from Subhi Idris and Al-Rubaie [54]. All the items of the research question used to measure the 5-point Likert scale range from 1 = strongly disagree to 5 = strongly agree.

3.3. Tools and techniques and unit of analysis

To conduct this research, we gathered secondary data from the previous study and primary empirical data from the employees in Bangladesh. Before conducting the survey, we conducted a pilot study with five questions to determine the questionnaire's inconsistency. After that, the researchers collected 20 data and conducted a validity test using Cronbach's alpha. All the variable results, which showed a value greater than 0.5, suggested that the preliminary data possessed sufficient validity for the study. A total of 250 samples were retuned, and after cleaning, 233 were used for the analysis. This analysis included descriptive statistics, multicollinearity, the common methods variance test, correlation, reliability, and validity, all tested with SPSS 23 software. Then, to measure the model fit indices, the measurement model and structural model fit were calculated through AMOS 24. Finally, the hypothesis of the structural model was also calculated through the use of AMOS.

3.4. Common method bias test

With a KMO rating of 0.912, our data is considered excellent for factor analysis. This high level of sampling adequacy implies that the other variables in the dataset predict each variable accurately and reliably. Bartlett's test ($p < .001$) found strong correlations between variables, suggesting factor analysis is suitable. The test confirms that the correlation matrix is not an identity matrix, which indicates that the variables are sufficiently interconnected to give relevant factors.

To address common method variance (CMV), we employed both procedural and statistical methods. Our procedural methods included using questions from reputable sources; conducting pilot-tests on targeted samples; and using two different scales to encourage objective responses. As for statistical methods, Harman's single-factor test, common latent factor test, and correlation technique were employed. The first component explained 37.97 % of the variation, below the 50 % threshold indicated by Harman's single-factor test [55]. On the other hand, in Table 4, the variance inflation factor (VIF) value for the results showed that all the values were fewer than 10, which indicates there is no multicollinearity problem for the data.

4. Results

4.1. Measurement model

The proposed model was examined using AMOS and SPSS. The study inspected data reliability, discriminant validity, and confirmatory factor analysis (CFA) [6]. To define validity, the researchers conducted confirmatory factor analyses (see Fig. 2).

Table 3
Respondents' demographic profile.

Demographic (Total = 233)	Categories	Frequency	Percent (%)
1. Gender:	Female	79	33.9
	Male	154	66.1
2. Age	22–25 Years	73	31.3
	26–29 Years	131	56.2
	30–33 Years	28	12.0
	34–37 Years	1	0.4
3. Level of education	Up to HSC	7	3.0
	Graduates	110	47.2
	Postgraduate	111	47.6
	PhD	5	2.1
4. Experience	Less than 1 Years	58	24.9
	1–5 Years	126	54.1
	6–10 Years	43	18.4
	11–15 years	6	2.6

Source: Authors' calculation

Table 4
Descriptive statistics and collinearity statistics.

Variables	Mean	Std. Deviation	Skewness		Kurtosis		Collinearity Statistics	
	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error	Tolerance	VIF
1.Digital leadership	4.486	0.482	0.046	0.159	0.046	0.318	0.701	1.408
2.Digital Culture	4.477	0.421	0.047	0.159	0.047	0.318	0.647	1.321
3.Affective Commitment	4.442	0.542	−1.325	0.159	−1.325	0.318	0.594	1.544
4.Strategic Agility	4.322	0.571	−2.871	0.159	−2.871	0.318	0.981	1.011
5.Competive Performance	4.424	0.515	−0.959	0.159	−0.959	0.318	0.963	1.408

Cronbach's alpha was used to assess the scales' reliability and internal consistency; it exceeded 0.70. Using the recommended indices, the findings revealed that $\chi^2 = 284.44$, $\chi^2/df = 1.29$, GFI = 0.904. AGFI = 0.879, RMR = 0.013, RMSEA = 0.036, CFI = 0.984, TLI = 0.984, and IFI = 0.984 and PClose = 0.982. When the AGFI values surpass 0.8, they are suitable for further analysis [56]. Similar also found in case of structural equation model analysis (See Table 5)

4.2. Reliability and validity analysis

Table 6 shows the convergent validity and reliability where Cronbach's alpha values higher than 0.70 and CR values are greater than 0.70, and AVE (average variance extracted) is greater than 0.50 [57] indicating an acceptable range. Furthermore, investigations of convergent validity, entire the constructs' standardized factor loadings are significant ($p < .001$) and regression estimations are

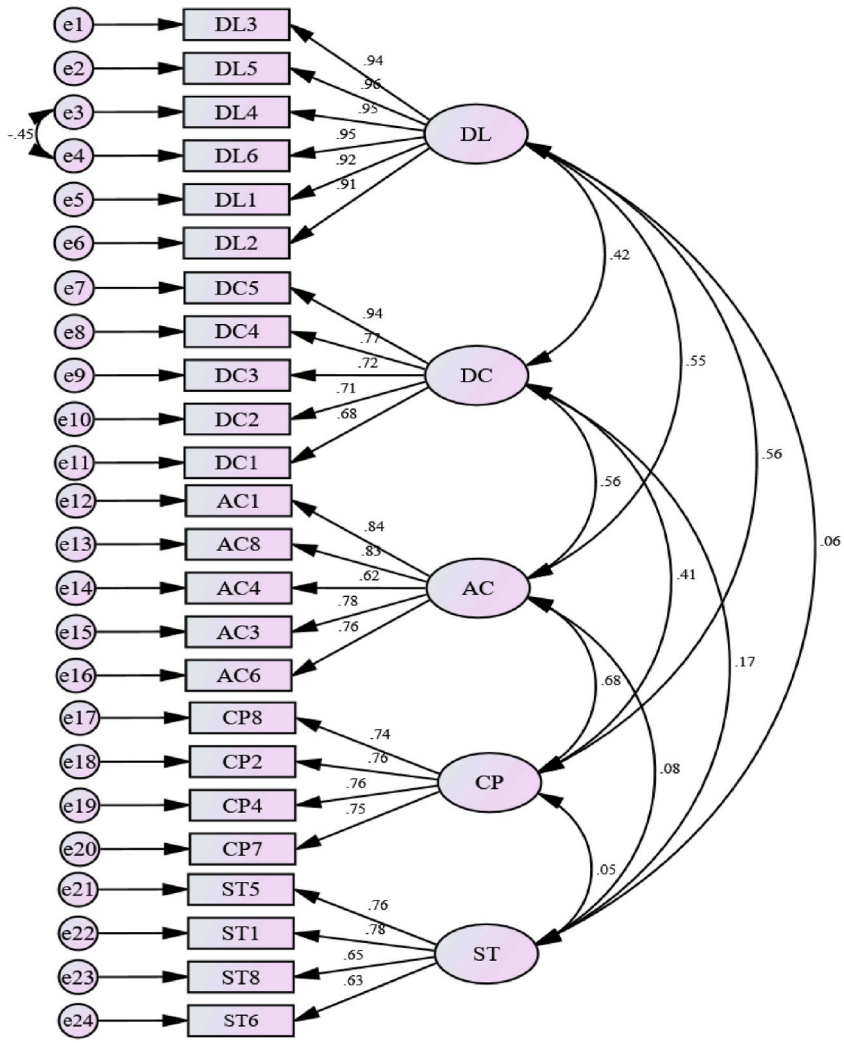


Fig. 2. Measurement model.

Table 5
Model fit indices.

Model fit indices	Cut-off benchmarks	Measurement model Value	Structured Model Value
(x^2)	≤3.5 to 0	284.444	284.162
X^2/d	More than 1.0 and less than 3.00	1.299	1.722
GFI	>0.900	0.904	0.895
AGFI	>0.800	0.879	0.866
RMR	≥0.900	0.130	0.025
RMSEA	<0.06	0.036	0.056
CFI	>0.900	0.984	0.969
TLI	>0.900	0.981	0.965
IFI	>0.900	0.984	0.970
PCLOSE	>0.050	0.982	0.188

Note(s): RMR = Root Mean Square Residual; GFI: Goodness-of-fit index, AGFI: Adjusted goodness-of-fit; RMSEA = Root mean square error of approximation; CFI = Comparative fit index; TFI = Tucker Lewis index; IFI = Incremental fit Index.
Source: Authors' calculation

ranges from 0.907 to 0.956 for DL, 0.684 to 0.942 for DC, 0.623to 0.838 for AC, 0.645 to 0.798 for SA, and 0.742 to 0.765 for CP. It is implied that the model has convergent validity given the construct reliability results and strong factor loadings [56].

Table 7 shows correlation matrix with discriminant validity. Employee experience and position are positively related to organizational size. DL correlates positively with digital culture ($r = 0.372, p < .01$) and affective commitment ($r = 0.463, p < .01$). The study found a positive correlation between DL and CP ($r = 0.511, p < .01$), but no significant relationship was found for SA with DC, AC, and CP.

4.3. Results of hypotheses

To test the study hypotheses, we developed path model (see Fig. 3) with AMOS version 24. This study utilized a bootstrapping method to look at the moderating and mediating influence of the hypotheses [58]. Previously, this method was used by Baron and Kenny [59] though which was severely critiqued [60]. There were 5000 bootstrap samples with 95 % bias-corrected confidence intervals. Based on the lower and higher confidence interval limits, we decide whether to accept or reject the indirect influence

Table 6
Convergent validity of the constructs.

Variables and Items	Loadings	*p- value*	CR	AVE	MSV	Cronbach's (α)
Digital Leadership			0.977	0.878	0.317	0.979
DL1	0.924	a				
DL2	0.907	a				
DL3	0.941	a				
DL4	0.949	a				
DL5	0.956	a				
DL6	0.945	a				
Digital Culture			0.878	0.595	0.310	0.877
DC1	0.684	a				
DC2	0.709	a				
DC3	0.719	a				
DC4	0.775	a				
DC5	0.942					
Affective commitment			0.877	0.591	0.461	0.873
AC1	0.838	a				
AC3	0.778	a				
AC4	0.623	a				
AC6	0.757	a				
AC8	0.829	a				
Strategic agility			0.775	0.536	0.019	0.770
ST1	0.744	a				
ST5	0.798	a				
ST8	0.645	a				
Competitive performance			0.840	0.567	0.461	0.839
CP2	0.765	a				
CP4	0.759	a				
CP7	0.745	a				
CP8	0.742	a				

Note.
[a] $p < .001$.
Source: Authors' calculation

Table 7
Discriminant validity.

Variables	1	2	3	4	5
1. Digital leadership	**(0.937)**				
2. Digital Culture	0.372**	**(0.953)**			
3. Affective Commitment	0.517**	0.463**	**(0.771)**		
4. Strategic Agility	0.047	0.102	0.061	**(0.732)**	
5. Competitive Performance	0.511**	0.340**	0.580**	0.042	**(0.769)**

Note(s): Correlation is significant at the 0.01 level (2-tailed). Value in the bracket bolded is the square root of AVE refers to the discriminant validity.
Source: Authors' calculation

hypothesis.

Results showed that DL positively affects competitive performance ($\beta = -0.239$, $p > .05$), therefore H1 is not supported (see Table 8). Then results show that DL affects DC ($\beta = 0.372$, $p < .05$), but DC does not affect CP ($\beta = 0.054$, $p > .05$). Along with this, the DL to DC to CP pathways are not significant ($\beta = 0.020$, $p > .05$). This infers that DC do not have any mediation effect between DL and CP. Therefore, hypothesis H2 is not supported. On the other hand, the outcomes show that DL affects AC ($\beta = 0.517$, $p < .05$) and AC positively affects CP ($\beta = 0.410$, $p < .05$). It was also found that the DL to AC to CP pathways are also significant ($\beta = 0.210$, $p < .05$). Therefore, AC fully mediates the relationship between DL and CP, inferring H3 is supported. Finally, the interaction effect of SA haven't strengthens the link between DL and CP ($\beta = 0.872$, $p > .05$). This means H4 is not supported and SA has a no moderating effect in this study.

5. Discussion

This paper's primary goal was to investigate the effects of DL on Bangladeshi various companies' CP by using AC, DC, and SA as moderators. Firstly, this study conducted an empirical test utilizing DL as the independent variable and DC and AC as the mediator variable based on the suggestions of previous study by Erhan et al. [51]. Apart from this, the work fundamentally contributes to the research recommendations for the future: DL as a predictor variable and DC and AC as mediation factors [1]. They also suggested that the dependent variable is CP and the moderating role of SA. Results showed that the relationship between DL and competitive advantages is insignificant, which is opposite to the results found in an Indonesian study [29]. The reason behind that AC has full mediation in between DL and CP. Secondly, the results showed that DL has a significant effect on DC. It infers digital leaders' dynamism can affect DC [3,21]. Thirdly, results also proved that DC is insignificantly associated with organizational CP. This is not supported by the El Sawy et al. [39] study on how DC influences behavioral shifts, and Kurtz [38] mentioned technology and reshaping the workplace. In the context of developing countries, DC failed to significantly mediate between DL and CP, and a strong DC within the organization may lead to improved competitive performance. On the other hand, AC fully mediates the relationship between DL and CP, suggesting that in the Bangladeshi context, people place more value on affective commentary than on DC. Fourthly, AC has a considerable favorable effect on CP. This suggests that emotionally committed personnel contribute to their organization's CP. Previous studies have shown that transformational leadership is positively supportive of AC [37]. Indirectly, digital leaders also support boosting employees' self-confidence, motivating staff members to prioritize the needs for organizational development, and gaining competitive advantages. Fifthly, AC is positively associated with CP, such as enhancing ROI, increasing sales, increasing the efficiency of the delivery cycle, increasing customer satisfaction, and so on. The previous study also proved that AC increases individual employee performance (Ribeiro, Gomes et al., 2018). This suggests that DL improves CP by instilling AC in employees, and AC is a key mediator in the relationship between DL and CP.

Lastly, SA did not modify the link between DL and CP (See Fig. 4). This shows that an organization's inability to quickly adapt to

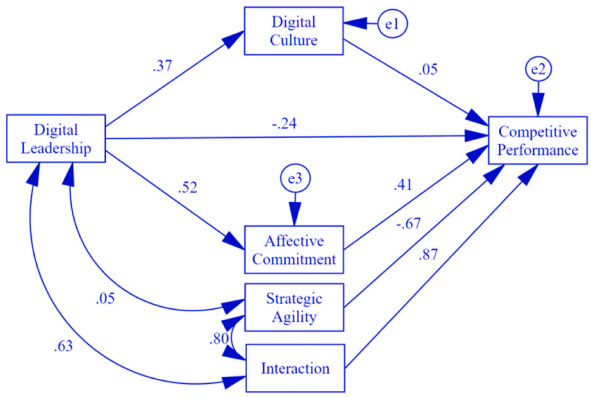


Fig. 3. Path model showing standardized coefficients.

Table 8
Testing of the hypotheses.

Hypothesis	Pathways	Direct Effect	Indirect Effect	Interaction Effect	95 % CI	*P*-Value	Decisions
H1	DL → CP	−0.239			(-0.794, 0.309)	0.500	**NS**
H2	DL→DC→CP		0.020		(-0.018, 0.063)	0.361	**NS**
H2a	DL → DC	0.372			(0.441, 0.586)	0.000	**S**
H2b	DC → CP	0.054			(-0.051, 0.173)	0.407	**NS**
H3	DL→AC→CP		0.210		(0.110, 0.321)	0.000	**S**
H3a	DL → AC	0.517			(441, 0.586)	0.001	**S**
H3b	AC → CP	0.410			(0.228, 0.561)	0.001	**S**
H4	DL × SA→ CP			0.872	(-0.039, 1.75)	0.112	**NS**

Note(s): DL = Digital leadership; DC = Digital culture; AC = Affective commitment; CP = Competitive performance; S/NS = Supported/Not supported.
Source: Authors' calculation

change increases the favorable impact of DL on CP, different results depicted by Satar et al. [36]. This suggests that executives may increase their companies' competitive advantage if they employ digital tools and strategies properly. Other studies showed that SA did not moderate the relationship between technological innovation and firm performance [35]. Finally, overall, the study model indicates that DL is critical for enhancing CP, particularly when combined with a strong high emotional commitment. This emphasizes the need for developing a digitally aware leadership style, establishing a flexible and supportive company culture, and implementing agile strategy methods.

5.1. Theoretical contributions

This study added to our theoretical understanding of the dynamic capabilities of DL for enhancing resources like culture, AC, and CP. Therefore, this study contributes to RBV theory, where DL serves as the independent variable in this study. The dependent variable is Bangladesh's CP in sustainable development, whereas the mediating variables are DC and AC support from the organizations. In the previous study, it was found that leaders play a dynamic role in enhancing resources. This research is aligned with the previous study theory (see Table 1). For instance, in an extensive investigation, our findings can also benefit by providing valuable insights for organizations and management. Executives and managers who are finding it challenging to produce and integrate digital technology into their business practices would benefit practically from this study. Therefore, theoretical assumptions and empirical evidence from our study demonstrated how DL significantly enhances competitive advantages through AC.

5.2. Practical implications

Digital leaders are always focused on the competitive environment in order to achieve sustainable development goals and increase performance. Consequently, this investigation will help Bangladesh put the results into reality and reap the benefits of greater product and service innovation, as well as the sustainable development goal. The current study is representative, and more stable research is needed to establish an unambiguous connection between the parameters under investigation. However, it is important to note that this study focuses on managers and gives actual evidence on the influence of DL on the organization's CP. This study emphasizes the practical usefulness of DL in promoting long-term organizational performance in Bangladesh, which may be applicable in other countries. It also emphasizes the practical importance of DL in promoting long-term organizational performance in Bangladesh, which may be applicable in other countries. This study shows the practical usefulness of DL in enhancing long-term organizational success in Bangladesh, and it might be applied in other nations. Lastly, Bangladesh is an impoverished nation; frequent technological advances

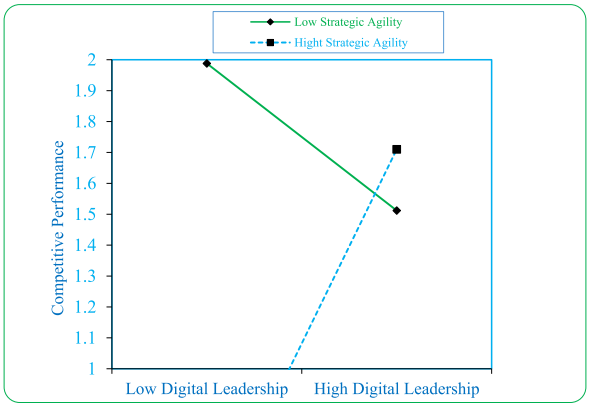


Fig. 4. Moderation analysis.

may cause a reluctance to embrace novel technology as it emerges. As a result, technological firms should attempt to adopt new technologies that are easily adaptive to the ongoing process. Apart from this, the government may grant subsidies or tax incentives for adopting novel innovations in business. Finally, managers must focus on enhancing culture and take care of AC for the purpose of achieving sustainable competitive performance.

5.3. Limitations and future research directions

This research is not out of its limitations. Firstly, as the study used the cross-sectional data collecting from employees ranged from 22 to 37 years of age through convenient sampling technique, we could not ignore its potential response biasness. Hence, in the future, it would be worthwhile if longitudinal studies were conducted. Secondly, in the future, other than the covered variables, new variables such as innovation mindset, AI, and social media could be focused on. Furthermore, additional studies should look into whether organizational skills and financial help are linked to improved DL skills. Furthermore, while this study was conducted in general organizations, the outcomes may alter if the organization is technology-driven. Thirdly, this study, along with additional study, could be conducted to determine the impact on CP and attachment to government assistance for digital environment expansion and deployment. Finally, multicultural and cross-country comparative studies would be beneficial for better understanding the cultural effect on the outcomes.

5.4. Conclusion

In recent years, there has been an increased emphasis on determining how DL affects CP. This research investigates the relationship between DL and CP in Bangladesh, particularly the mediation of DC and AC and the moderation effect of SA on sustainable development. Many studies have been undertaken using different frameworks to investigate DL, long-term performance, DC, and employee support for digital leaders [21,61]. The study's conclusions suggest that, in Bangladesh's pursuit of sustainable development, DL enhances CP through commitment. Additionally, emotional commitment is also significantly mediating factors in Bangladesh's organizational sustainable development and CP. The results of our study showed that implementing DL tactics enhances CP over the long run when pursuing sustainable growth. Moreover, in the digital age, implementing DL in smart organizations improves performance overall. Businesses need to promote DL, develop a DC that encourages digital activities, and advance digital technologies in the age of digital transformation. Therefore, organizations exhibit a good awareness of current information and a high degree of proactivity in implementing technical innovations. Ultimately, these findings suggest that in the contexts of developing countries, AC continues to receive more attention than digital culture.

CRediT authorship contribution statement

Md Alamgir Mollah: Writing – review & editing, Supervision, Resources, Investigation, Conceptualization. **Ibrahim:** Writing – original draft, Validation, Software, Methodology, Formal analysis, Data curation. **Abdullah Al Masud:** Writing – review & editing. **Md Sohel Chowdhury:** Writing – review & editing, Conceptualization.

Data availability statement

Data will be made available on request.

Ethics statement

The study was conducted in accordance with the Declaration of Helsinki and approved by Ethics Committee, Faculty of Business Studies, University of Barishal, Bangladesh (protocol code Memo: SoMgt/2023/ER/001000 approval date: 03/06/2023).

Funding

Not applicable.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.heliyon.2024.e40839.

Appendix A. Questionnaire

Variables	Questionnaires	Reference
Digital Leadership	DL1: A digital leader raises awareness of the employees of the organization about the risks of the information technologies. DL2: A digital leader raises awareness of the employees about the technologies that can be used to improve the organizational processes. DL3: A digital leader determines required ethical behaviors for information implementations with all the stakeholders. DL4: A digital leader plays an informative role to reduce the resistance towards innovations brought by information technologies. DL5: A digital leader shares own experiences about technological opportunities that will increase the contributions to the colleagues for the structure of the learning organization DL6: In order to increase participation in the corporate vision, a digital leader guides the employees of the institution regarding the technological tools that can be used	[3,51]
Digital Culture	DC1: We openly discuss failures with all team members. DC2: Decisions are based on the opinion of the whole team, not on a single person only. DC3: We work in cross-functional teams (combining people from IT, marketing, finance, etc.). DC4: In our company, we avoid strong hierarchies in project work. DC5: Every team member brings in ideas and suggestions for digital products and services	[52]
Affective Commitment	AC1: I would be very happy to spend the rest of my career with this organization AC2: I enjoy discussing my organization with people outside it. AC3: I really feel as if this organization's problems are my own. AC4: I think that I could easily become as attached to another organization as I am to this one. AC5: I feel like 'part of the family' at my organization. AC6: I feel 'emotionally attached' to this organization. AC7: This organization has a great deal of personal meaning to me. AC8: I feel a strong sense of belonging to my organization.	[53]
Strategic agility	ST1: Our company responds to changes in aggregate consumer demand. ST2: Our company customizes a product or service to suit an individual customer. ST3: Our company reacts to new product or service launches by competitors. ST4: Our company introduces new pricing schedules in response to changes in competitors' prices. ST5: Our company expands into new regional or international markets. ST6: Our company change (expand or reduce) the variety of products/services available for sale. ST7: Our company adopts new technologies to produce better, faster and cheaper products and services. ST8: Our company switches suppliers to avail of lower costs, better quality or improved delivery times	[54]
Competitive Performance	CP1: Return on investment (ROI). CP2: Profits as a percentage of sales. CP3: Decreasing product or service delivery cycle times. CP4: Rapid response to market demand. CP5: Rapid confirmation of customer orders. CP6: Increasing customer satisfaction. CP7: Increasing profit growth rates and growing market shares. CP8: Reducing operating costs.	[2]

References

[1] D.A.O. Al-Husban, M.N.D. Almarshad, M.A. Altahrawi, Digital leadership and organization's performance:The mediating role of innovation capability, Int. J. Enterpren. 25 (2021) 1–16.

[2] A. Al-Omush, M.T. Momany, A. Hannoon, M. Anwar, Digitalization and sustainable competitive performance in small–medium enterprises: a moderation mediation model, Sustainability 15 (2023) 1–22, https://doi.org/10.3390/su152115668.

[3] J. Shin, A. Mollah, J. Choi, Sustainability and organizational performance in South Korea: the effect of digital leadership on digital culture and employees' digital capabilities, Sustainability (2023) 1–15, https://doi.org/10.3390/su15032027.

[4] M. Sagbas, O. Oktaysoy, E. Topcuoglu, E. Kaygin, F.A. Erdogan, The mediating role of innovative behavior on the effect of digital leadership on intrapreneurship intention and job performance, Behav. Sci. 13 (2023) 1–20, https://doi.org/10.3390/bs13100874.

[5] M.D. Vasilescu, A.C. Serban, G.C. Dimian, M.I. Aceleanu, X. Picatoste, Digital divide, skills and perceptions on digitalisation in the European Union—towards a smart labour market, PLoS One 15 (2020) e0232032, https://doi.org/10.1371/journal.pone.0232032.

[6] M.A. Mollah, J.-H. Choi, S.-J. Hwang, J.-K. Shin, Exploring a pathway to sustainable organizational performance of South Korea in the digital age: the effect of digital leadership on IT capabilities and organizational learning, Sustainability 15 (2023) 1–18, https://doi.org/10.3390/su15107875.

[7] G. Westerman, D. Bonnet, A. McAfee, Leading Digital: Turning Technology into Business Transformation, Harvard Business Press, 2014.

[8] L. Mihardjo, A. Furinto, The effect of digital leadership and innovation management for incumbent telecommunication company in the digital disruptive era, Int. J. Eng. Technol. 7 (2018) 125–130, https://doi.org/10.14419/ijet.v7i2.29.13142.

[9] G. Kane, The technology fallacy: people are the real key to digital transformation, Res. Technol. Manag. 62 (2019) 44–49, https://doi.org/10.1080/08956308.2019.1661079.

[10] J.P. Meyer, N.J. Allen, A three-component conceptualization of organizational commitment, Hum. Resour. Manag. Rev. 1 (1991) 61–89, https://doi.org/10.1016/1053-4822(91)90011-Z.

[11] S.B. Ivory, S.B. Brooks, Managing corporate sustainability with a paradoxical lens: lessons from strategic agility, J. Bus. Ethics 148 (2018) 347–361, https://doi.org/10.1007/s10551-017-3583-6.

[12] T. Erhan, H.H. Uzunbacak, E. Aydin, From conventional to digital leadership: exploring digitalization of leadership and innovative work behavior, Management Research Review 45 (2022) 1524–1543, https://doi.org/10.1108/MRR-05-2021-0338.

[13] J. Benitez, A. Arenas, A. Castillo, J. Esteves, Impact of digital leadership capability on innovation performance: the role of platform digitization capability, Inf. Manag. 59 (2022) 1–22, https://doi.org/10.1016/j.im.2022.103590.

[14] I. Turyadi, Z. Zulkifli, M.R. Tawil, H. Ali, A. Sadikin, The role of digital leadership in organizations to improve employee performance and business success, Jurnal Ekonomi 12 (2023) 1671–1677.
[15] D.J. Teece, Explicating dynamic capabilities: the nature and microfoundations of (sustainable) enterprise performance, Strat. Manag. J. 28 (2007) 1319–1350, https://doi.org/10.1002/smj.640.
[16] V. Ambrosini, C. Bowman, What are dynamic capabilities and are they a useful construct in strategic management? Int. J. Manag. Rev. 11 (2009) 29–49, https://doi.org/10.1111/j.1468-2370.2008.00251.x.
[17] M. Peteraf, G. Di Stefano, G. Verona, The elephant in the room of dynamic capabilities: bringing two diverging conversations together, Strat. Manag. J. 34 (2013) 1389–1410, https://doi.org/10.1002/smj.2078.
[18] T. Felin, N.J. Foss, K.H. Heimeriks, T.L. Madsen, Microfoundations of routines and capabilities: individuals, processes, and structure, J. Manag. Stud. 49 (2012) 1351–1374, https://doi.org/10.1111/j.1467-6486.2012.01052.x.
[19] J. Kraaijenbrink, J.-C. Spender, A.J. Groen, The resource-based view: a review and assessment of its critiques, J. Manag. 36 (2010) 349–372, https://doi.org/10.1177/0149206309350775.
[20] L. Mihardjo, S. Sasmoko, F. Alamsyah, E. Elidjen, The influence of digital leadership on innovation management based on dynamic capability: market orientation as a moderator, Management Science Letters 9 (2019) 1059–1070.
[21] Z. Zhen, Z. Yousaf, M. Radulescu, M. Yasir, Nexus of digital organizational culture, capabilities, organizational readiness, and innovation: investigation of SMEs operating in the digital economy, Sustainability 13 (2021) 1–15, https://doi.org/10.3390/su13020720.
[22] Y. Gong, K.S. Law, S. Chang, K.R. Xin, Human resources management and firm performance: the differential role of managerial affective and continuance commitment, J. Appl. Psychol. 94 (2009) 263–275, https://doi.org/10.1037/a0013116.
[23] M.A. Arokodare, O.U. Asikhia, Strategic agility: achieving superior organizational performance through strategic foresight, Global J. Manag. Bus. (2020) 7–16, https://doi.org/10.34257/GJMBRAVOL20IS3PG7.
[24] L. Mihardjo, R.A.N. Rukmana, Dynamic capability, market orientation and innovation capability: the role of digital leadership for Indonesia telecommunication firms in facing disruptive era, in: International Conference on Industrial Engineering and Operations Management, Bangkok, Thailand, 2019.
[25] T. Fatima, A. Masood, Impact of digital leadership on open innovation: a moderating serial mediation model, J. Knowl. Manag. 28 (2023) 161–180, https://doi.org/10.1108/JKM-11-2022-0872.
[26] M.A. Mollah, M.B. Amin, G.C. Debnath, M.S. Hosain, M.A. Rahaman, M. Abdullah, Nexus among digital leadership, digital transformation, and digital innovation for sustainable financial performance: revealing the influence of environmental dynamism, Sustainability 16 (2024) 8023, https://doi.org/10.3390/su16188023.
[27] T.Y. Khaw, A.P. Teoh, S.N.A. Khalid, S. Letchmunan, The impact of digital leadership on sustainable performance: a systematic literature review, J. Manag. Dev. 41 (2022) 514–534.
[28] B. Huo, M. Gu, Z. Wang, Green or lean? A supply chain approach to sustainable performance, J. Clean. Prod. 216 (2019) 152–166, https://doi.org/10.1016/j.jclepro.2019.01.141.
[29] I. Astuty, U. Udin, The effect of perceived organizational support and transformational leadership on affective commitment and employee performance, The Journal of Asian Finance, Economics and Business 7 (2020) 401–411, https://doi.org/10.13106/jafeb.2020.vol7.no10.401.
[30] D. Proksch, A.F. Rosin, S. Stubner, A. Pinkwart, The influence of a digital strategy on the digitalization of new ventures: the mediating effect of digital capabilities and a digital culture, J. Small Bus. Manag. 62 (2021) 1–29, https://doi.org/10.1080/00472778.2021.1883036.
[31] M. Muniroh, H. Hamidah, T. Abdullah, Managerial implications on the relation of digital leadership, digital culture, organizational learning, and innovation of the employee performance (case study of PT. Telkom digital and next business department), Management and Entrepreneurship: Trends of Development 1 (2022) 58–75, https://doi.org/10.26661/2522-1566/2022-1/19-05.
[32] C. Purba, Digital transformation in the Indonesia manufacturing industry: the effect of e-learning, e-task and leadership style on employee engagement, International Journal of Data and Network Science 5 (2021) 361–368, https://doi.org/10.5267/j.ijdns.2021.5.007.
[33] N. Ribeiro, D. Gomes, S. Kurian, Authentic leadership and performance: the mediating role of employees' affective commitment, Soc. Responsib. J. 14 (2018) 213–225, https://doi.org/10.1108/SRJ-06-2017-0111.
[34] N. Ribeiro, İ. Yücel, D. Gomes, How transformational leadership predicts employees' affective commitment and performance, Int. J. Prod. Perform. Manag. 67 (2018) 1901–1917, https://doi.org/10.1108/IJPPM-09-2017-0229.
[35] H. Khraim, The influence of technological innovative capabilities on firm performance: moderating effect of strategic agility, Probl. Perspect. Manag. 20 (2022) 459–470, https://doi.org/10.21511/ppm.20(2).2022.38.
[36] M.S. Satar, S.M. Alshibani, G. Alarifi, Effects of firm-level entrepreneurship orientation on digital transformation in SMEs: the moderating role of strategic agility, Enterpren. Res. J. (2024), https://doi.org/10.1515/erj-2023-0267.
[37] H. Shao, H. Fu, Y. Ge, W. Jia, Z. Li, J. Wang, Moderating effects of transformational leadership, affective commitment, job performance, and job insecurity, Front. Psychol. 13 (2022), https://doi.org/10.3389/fpsyg.2022.847147.
[38] H. Kurtz, Digital Business Strategy: an Investigation of Generic Types, Performance Implications, and Path Dependence, Cuvillier Verlag, 2021.
[39] O.A. El Sawy, P. Kræmmergaard, H. Amsinck, A.L. Vinther, How LEGO built the foundations and enterprise capabilities for digital leadership, in: R.D. Galliers, D.E. Leidner, B. Simeonova (Eds.), Strategic Information Management, fifth ed., Routledge, 2020, pp. 174–201, https://doi.org/10.4324/9780429286797-8.
[40] D. Proksch, A.F. Rosin, S. Stubner, A. Pinkwart, The influence of a digital strategy on the digitalization of new ventures: the mediating effect of digital capabilities and a digital culture, J. Small Bus. Manag. 62 (2024) 1–29, https://doi.org/10.1080/00472778.2021.1883036.
[41] N.A. Mothafar, J. Zhang, A. Alsoffary, B. Masoomi, A. Al-Barakani, O.S. Alhady, Digital social responsibility towards digital education of international higher education students' institutions: digital culture as mediator, Heliyon 10 (2024) e36442, https://doi.org/10.1016/j.heliyon.2024.e36442, 1–18.
[42] M. Wu, R. Wang, P. He, C. Estay, Z. Akram, Examining how ambidextrous leadership relates to affective commitment and workplace deviance behavior of employees: the moderating role of supervisor–subordinate exchange guanxi, Int. J. Environ. Res. Publ. Health 17 (2020) 5500, https://doi.org/10.3390/ijerph17155500.
[43] J.-P. Montani, Y. Schutz, A.G. Dulloo, Dieting and weight cycling as risk factors for cardiometabolic diseases: who is really at risk? Obes. Rev. 16 (2015) 7–18, https://doi.org/10.1111/obr.12251.
[44] J.S.P. Story, F. Castanheira, Corporate social responsibility and employee performance: mediation role of job satisfaction and affective commitment, Corp. Soc. Responsib. Environ. Manag. 26 (2019) 1361–1370, https://doi.org/10.1002/csr.1752.
[45] A. Swalhi, S. Zgoulli, M. Hofaidhllaoui, The influence of organizational justice on job performance, J. Manag. Dev. 36 (2017) 542–559, https://doi.org/10.1108/JMD-11-2015-0162.
[46] H.K. Kim, Work-life balance and employees' performance: the mediating role of affective commitment, global business and management research, Int. J. 6 (2014).
[47] I. Azzam, A. Alserhan, Y. Mohammad, N. Shamaileh, S. Al-Hawary, Impact of dynamic capabilities on competitive performance: a moderated-mediation model of entrepreneurship orientation and digital leadership, International Journal of Data and Network Science 7 (2023) 1949–1962, https://doi.org/10.5267/j.ijdns.2023.6.017.
[48] G. Shams, M.A. Rehman, S. Samad, R.A. Rather, The impact of the magnitude of service failure and complaint handling on satisfaction and brand credibility in the banking industry, J Financ Serv Mark 25 (2020) 25–34, https://doi.org/10.1057/s41264-020-00070-0.
[49] S. Stieglitz, M. Mirbabaie, B. Ross, C. Neuberger, Social media analytics – challenges in topic discovery, data collection, and data preparation, Int. J. Inf. Manag. 39 (2018) 156–168, https://doi.org/10.1016/j.ijinfomgt.2017.12.002.
[50] J.K. Shanmugam, T.A. Ping, R. Thuraisamy, Business-to-Business E-commerce adoption amongst the Malaysian manufacturing small and medium-sized enterprises: strategic agility as moderator, East Asian Journal of Multidisciplinary Research 1 (2022) 485–510, https://doi.org/10.55927/eajmr.v1i4.76.
[51] T. Erhan, H.H. Uzunbacak, E. Aydin, From conventional to digital leadership: exploring digitalization of leadership and innovative work behavior, MRR 45 (2022) 1524–1543, https://doi.org/10.1108/MRR-05-2021-0338.

[52] S. Duerr, F. Holotiuk, D. Beimborn, H.-T. Wagner, T. Weitzel, What is digital organizational culture? Insights from exploratory case studies, in: Proceedings of the 51st Hawaii International Conference on System Sciences, 2018, pp. 5126–5135.
[53] A. Khalili, A. Asmawi, Appraising the impact of gender differences on organizational commitment: empirical evidence from a private SME in Iran, IJBM 7 (2012) 100–110, https://doi.org/10.5539/ijbm.v7n5p100.
[54] W.M. Subhi Idris, M.T.K. Al-Rubaie, Examining the impact of strategic learning on strategic agility, J. Manag. Strat. 4 (2013) 1–27, https://doi.org/10.5430/jms.v4n2p7.
[55] P.M. Podsakoff, S.B. MacKenzie, J.-Y. Lee, N.P. Podsakoff, Common method biases in behavioral research: a critical review of the literature and recommended remedies, J. Appl. Psychol. 88 (2003) 879–903, https://doi.org/10.1037/0021-9010.88.5.879.
[56] J.C. Anderson, D.W. Gerbing, Structural equation modeling in practice: a review and recommended two-step approach, Psychol. Bull. 103 (1988) 411–423, https://doi.org/10.1037/0033-2909.103.3.411.
[57] J.F. Hair Jr., G.T.M. Hult, C.M. Ringle, M. Sarstedt, N.P. Danks, S. Ray, Partial Least Squares Structural Equation Modeling (PLS-SEM) Using R: A Workbook, Springer Nature, 2021, https://doi.org/10.1007/978-3-030-80519-7.
[58] P.E. Shrout, N. Bolger, Mediation in experimental and nonexperimental studies: new procedures and recommendations, Psychol. Methods 7 (2002) 422–445, https://doi.org/10.1037/1082-989X.7.4.422.
[59] R.M. Baron, D.A. Kenny, The moderator–mediator variable distinction in social psychological research: conceptual, strategic, and statistical considerations, J. Pers. Soc. Psychol. 51 (1986) 1173–1182, https://doi.org/10.1037/0022-3514.51.6.1173.
[60] D.P. MacKinnon, L.J. Luecken, How and for whom? Mediation and moderation in health psychology, Health Psychol. 27 (2008) S99–S100, https://doi.org/10.1037/0278-6133.27.2(Suppl.).S99.
[61] K. Lu, (Ram) Ramamurthy, Understanding the link between information technology capability and organizational agility: an empirical examination, MIS Q. 35 (2011) 931–954, https://doi.org/10.2307/41409967.