

Exploring the Effect of Digital Leadership, Employee Engagement and Organizational Commitment on Employee Performance: An Investigation in Bangladesh

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Abstract

Purpose: Industry 4.0 brings many changes to organizations, impacting leadership, culture, strategy, employee behavior, technology, and organizational performance. This research aims to explore the effect of digital leadership (DL) on employee performance (EP), with mediating effects of employee engagement (EE) and organizational commitment (OC).

Methodology: The researchers have used 239 samples from various establishments in Bangladesh, with SPSS 23 and AMOS 24 used for analysis.

Findings: The findings demonstrate that DL has direct and indirect effect on EP, while EE positively influences EP; however, OC does not have substantial effect on EP. Additionally, EE partially mediates, and OC do not have substantial mediation effect between DL and EP. While double mediation path analysis shows a significant mediation effect from the path of DL to organizational commitment to employee engagement to EP.

Implications: This result infers that organizational commitment alone cannot increase performance; it also requires employee engagement. This examination contributes to the existing leadership and resource-based view theories in such a way that DL leaders are playing a key role in enhancing EP. The digitalized environment is substantially influencing the association between DL, EE, and EP in developing countries.

Keywords: Digital Leadership, Employee Engagement, Organizational Commitment, Employee Performance, Bangladesh

1. Introduction

Due to the fourth industrial revolution, DL is crucial for managing human resources, organizational systems, and technology for sustainable organizational performance. Traditional leaders were involved in direct face-to-face interaction with subordinates, but at present leaders prefer to use digital technology for communication such as WhatsApp (WA), Line, and Instagram DMs for communication (Gunawan et al., 2023) and in online settings, leaders and

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followers roles turn on different identities (Fayzhall et al., 2020), which ultimately may have an influence on OC, EE, and EP. Additionally, to move forward with the global system, Bangladesh declared the vision “Digital Bangladesh 2021,” and now has declared “Smart Bangladesh Vision 2041” for digital transformation. To do so, the government has started ICT-based one-stop service center for citizens (Saha, 2022), and it has also launched the A2i program to support digitalization. Besides, the government has also been emphasizing on paperless organization and maintaining a digital documentation (d-Nothi) system for the organizations. In this situation, though irritating, all the employees are forced to become habituated to digital systems. Therefore, employees’ roles and activations seem to appear in different ways, such as job roles, commitment, engagement, etc., and to handle these situations, DL emerged.

In the new business and work settings, digital leaders are also responsible for managing day-to-day activities and ensuring customers and employees’ satisfaction, wellbeing, and organizational effectiveness. DL is a blend of transformational leadership (TL) with digitalized skills (De Waal and Heijtel, 2016), and they are capable of leading (Gunawan et al., 2023) and managing organizations in terms of technology and work environment. Also, Prince et al. (2018) found that DL consists with transformational, transactional and authentic leadership. Digital leaders are playing a key role in guiding and driving digital change and transformation (Elia et al., 2020). DL have influence on digital innovation, and OP (Mollah et al., 2024; Shin et al., 2023) in South Korean perspective. Also, workplace digitalization brings many changes, such as job design, job expectations, job resources, and consequently, EE (Alieva and Powell, 2022). EE refers to “the level of commitment, motivation, employees feel toward their work and organization” (Saks, 2019). Work engagement is stated by Schaufeli et al. (2002) as a “positive mental feeling characterized by vigor, dedication, and absorption”. It is also related to satisfaction, employee retention, and organizational effectiveness (Richardson et al., 2006). It has been established to progressively impact job performance, client satisfaction, and psychological/physical health job performance, job satisfaction, and employee retention (Bakker, 2009; Bakker et al., 2008).

Undoubtedly, digital transformation is also related to organizational commitment because leaders’ activities and organizational behavior are associated with commitment. OC refers to “an employee's willingness to remain with and thrive in a company, while employee commitment reflects their effort to engage with the organization and their desire to stay” (Senjaya & Anindita, 2020). As Rahmayanti et al. (2017) mentioned, highly committed

employees are reluctant to switch, have better performance, and are engaged in their work. OC is also identified as a kind of attachment, identity, and connection in an institute (Asbari, 2020). In other words, it is critical for pioneers or chiefs to retain their employees stimulated and satisfied (Riaz et al., 2017). In general, three types of OC (affective, continuance, and normative commitment) have been observed (Meyer and Allen, 1991). Altogether, the integration of DL, EE, and OC could produce better output and sustainable performance.

Previously, researchers mentioned that DL has an influence on OP (Benitez et al., 2022), while opposite results come from Kurniasih et al. (2022) and Purwanto et al. (2019). Recent studies indicate that DL positively influences organizational performance (OP). For examples Paulina (2023) found that DL has a positive impact on EP in a manufacturing context. Similarly, Nurshinta et al. (2024) reported that DL significantly affects digital culture, marketing, and technology, which in turn influence OP. Additionally; Na et al. (2024) stated that DL has an indirect impact on digital business performance through its positive effects on enhancing digital readiness and digital platform capabilities in manufacturing companies. These studies collectively suggest that DL plays a crucial role in enhancing various aspects of OP, including EE (Paulina, 2023), digital culture (Nurshinta et al., 2024), and overall organizational effectiveness (Na et al., 2024) across different sectors. Furthermore, committed employees are more satisfied and have intention stay in the corporation (Atif et al., 2011), ultimately contributing to the achievement of organizational success. Moreover, digital leaders do not exist only at the higher level of the organization; they can be found any part of the organization, including the directors and C-suite executives (Karippur and Balaramachandran, 2022); senior and upper-level IT leaders (Petry, 2018); and organizations (Antonopoulou et al., 2021). This infers that DL is not hierarchical, unlike TL. Moreover, Erhan et al. (2021) in the first time, conducted a study on Turkish department managers to measure the effect of DL on employee innovative work behavior, exploring DL roles typically applied in general organizational settings. They recommended that DL could be used as a predictor, with other variables selected based on context and perspective. In addition, Arslan and Roudaki (2018) investigated the mediating influence of EE between OC and EP, but still, the effect of DL on EP and the mediating role of OC and EE have remained unexplored from Bangladeshi perspective. This leads to the development of a proposed research (Figure 1) and enhance the literature by fulfilling the research gap and offering valuable insights for managers and practitioners navigating rapidly changing digital environment. The specific purposes of this examination are as follows:

RQ1. What is the impact of DL on organisational commitment, employee engagement and EP?

RQ2. What is the impact of organisational commitment and employee engagement on EP?

RQ3. What is the mediating effect of organisational commitment and employee engagement between DL and EP?

2. Literature review and hypotheses

2.1 Theoretical Backgrounds

Social exchange theory (SET) is based on the premises that social behavior consequences from reciprocal exchange practice between the leader and their subordinates that generates OC, EE, and OP (Aldhuwaihi, 2013). In this perspective, Blau (1964) mentioned that high-quality associations are described by mutual trust, respect, and commitment. In addition, Liden et al. (2008) demonstrated that high-quality interactions lead to employees performing beyond their job duties, which is beneficial for achieving a leader's objectives, and increasing job performance. Moreover, employees join an organization for obtaining an improved work environment and corporate culture to achieve objectives (Ahmad et al., 2021). Hence, favorable associations between DL and subordinates result in increased OC that influences EP. Similarly, the employee's commitment may be an expected emotion for employees to retain their loyalty to the corporation, and significantly affect organizational outcomes, including EP (Pinho et al., 2014), suggesting that social exchange increases EP. So, this research draws on SET to explain the role of the DL in maintaining OC and EE and resource-based views for increasing overall EP.

2.2 The impact of digital leadership on employee performance, organisational commitment and employee engagement

Digital leaders play a crucial role in managing transformation and enriching organizational competitiveness. DL behavior cannot be ignored because of their digital vision, mission, attitude, agility, and dynamic capabilities for success. In this perspective, Zhu (2015) mentioned that digital leaders "possess in-depth knowledge, are global visionaries, are inquisitive, reflective, and creative." They are capable of handling the volatile, uncertain, complex and ambiguous environment of business (Mihardjo and Rukmana, 2018), which is a major concern in the present age. In their previous research, Koh et al. (1995) found that TL has a substantial effect on EP, and Mollah et al. (2023) examined and found that DL has a

profound positive impact on sustainable performance. Another study in Korea also found that DL positively interlinked with OP (Shin et al., 2023); however, DL did not have any impact on EP (Gunawan et al., 2023). There is a mixed conclusion that effect of DL on EP varies. Therefore, we assumed the succeeding hypothesis:

H1. DL has a positive impact on EP.

DL paradigm leverages information technology (IT) to carry out its responsibilities and enhance the performance of followers (Zam et al., 2023). Also, the use of technology has the potential to change organizations' leadership, employees' mindsets, and OP (Iriqat and Khalaf, 2017). Moreover, Awang et al. (2022) revealed that DL practices increase teachers' commitment in schools. Further, Verma (2022) found that DL has a crucial role in increasing the OC of industrial workers in India, while Berkovich and Hassan (2023) observed similar effect of DL on OC in Bahrain. This study assumes the succeeding hypothesis:

H2. DL has a positive impact on OC.

In the business world, the effectiveness of digital tools and procedures has a direct effect on worker engagement and output (Choudhury and Mohanty, 2019). Actually, EE is known as a positive attitude that workers have toward the company and its principles (Ariani, 2013) and the drive or enthusiasm of employees to assist the corporation in accomplishing its objectives (Marciano, 2010). Therefore, active DL practices help improve work performance, including EE and productivity. It also alters the ripple effect throughout the organization, impacting EE, productivity, and overall performance (Berman et al., 2012). Moreover, Purba (2021) found that DL has a substantial impact on EE in the manufacturing industry of Indonesia, while Winasis et al. (2021) found that the climate of DL enhances EE. This study develops the succeeding hypothesis:

H3. DL has a positive impact on EE.

2.3 The impact of organisational commitment on employee performance, and employee engagement

OC is explained as loyalty and participation of employees in the corporations (Davis and Newstrom, 1985; Reichers, 1985). It will encourage employees to obey organizational rules while minimizing employee turnover. In this perspective, Van Knippenberg and Sleebos (2006) showed OC as an association between employees and organizations. It indicates committed employees are deeply engaged in organizational activities and consequently reach organizational destinations. Therefore, an employee's strong belief in organizational culture

encourages employees, adds value, and enhances performance (Eleswed and Mohammed, 2013). However, several previous study analyses the impact of OC on AI in Oman (Zefeiti and Mohamad, 2017) civil servants' performance in Maluku; (Renyut et al., 2017) civil servants' performance in Indonesia; found the moderation effect of OCB. All of their outcomes indicated that OC has a positive impact on EP. Contrary to this, Gunawan et al. (2023) found an insignificant relationship between OC and EP in Indonesia. Furthermore, Van Waeyenberg et al. (2022) showed that OC positively affects the teacher's performance. While Soomro and Shah (2019) argued that OC has a positive impact on EE among the SME employees in Pakistan, Few academics have modeled EE prior to commitment. Based on Tajfel's (1974) social identity theory, Barnes and Collier (2013) claimed employees' stronger sense of commitment leads to the company's success and, consequently, increases engagement. Therefore, proposed succeeding hypotheses:

H4. OC has a positive influence on EP.

H5. OC has a positive influence on EE.

2.4 The relationship of employee engagement and employee performance

EE is characterized as improved employee commitment and excellent EP (Dessler, 2015). Such as EE happened for self-association with work roles, includes persistence, involvement, and deepening in activities (Srivastava and Madan, 2016). It has also been supposed as a motivational factor towards organization's achievement (Kazimoto, 2016). Greater EE reduces absenteeism, accidents, and turnover; also improve employee and EP (Juan and Yao, 2017). EE is connected to EP (Sopiah et al., 2020) and crucial for achieving organizational success as engaged employees can contribute to enhancing EP (Aktar and Pangil, 2018). Where, Anitha, (2014) confirmed employee engagements' significant impact on EP. Additionally, Sopiah et al. (2020) suggest that EE will increase general behaviors like they will be more effective, loyal, and strive to improve their performance. So, the subsequent hypothesis is proposed:

H6. EE has a positive influence on EP.

2.5 The mediating role of organisational commitment and employee engagement

DL is a strategic tool for increasing OC (Zam et al., 2023). Since, technology utilization could change organizations' and employees' mindsets, leadership, and performance (Iriqat and Khalaf, 2017). In the digital age employees are working in digital environment, communicating and monitored by digital system and also working performance evaluate through digital system. Along with this digital mind set, vision, mission, action lead to enhance OC. In order to

examine the effect of leadership on EE, numerous studies have found OC as a mediator. Such as Donkor et al. (2021) proved the mediating impacts of OC between leadership styles and subordinate performance in Ghana. Further, Qadir and Yeşiltaş (2020) found OC as a mediator between leadership styles and OP in SMEs of Iraq.

Similarly DL practices helps in improving work performance including EE. In this perspective, Winasis et al. (2021) argue that climate of DL has an affirmative and substantial effect on EE. In JDR theory EE was explained as an influential factor improving EP (Bakker et al., 2020). Such as, Park et al. (2021) found EE acts as a mediating factor between TL and EP. As digital leaders inspire, motivate and guide to accept and maintain organization digitally therefore, organisational engagement plays a bridging role between digital environment and organisational success. Therefore, this study assumes the subsequent hypotheses:

H7. OC mediates the association between DL and EP.

H8. EE mediates the association between DL and EP.

H9. OC and EE mediate association between DL and EP.

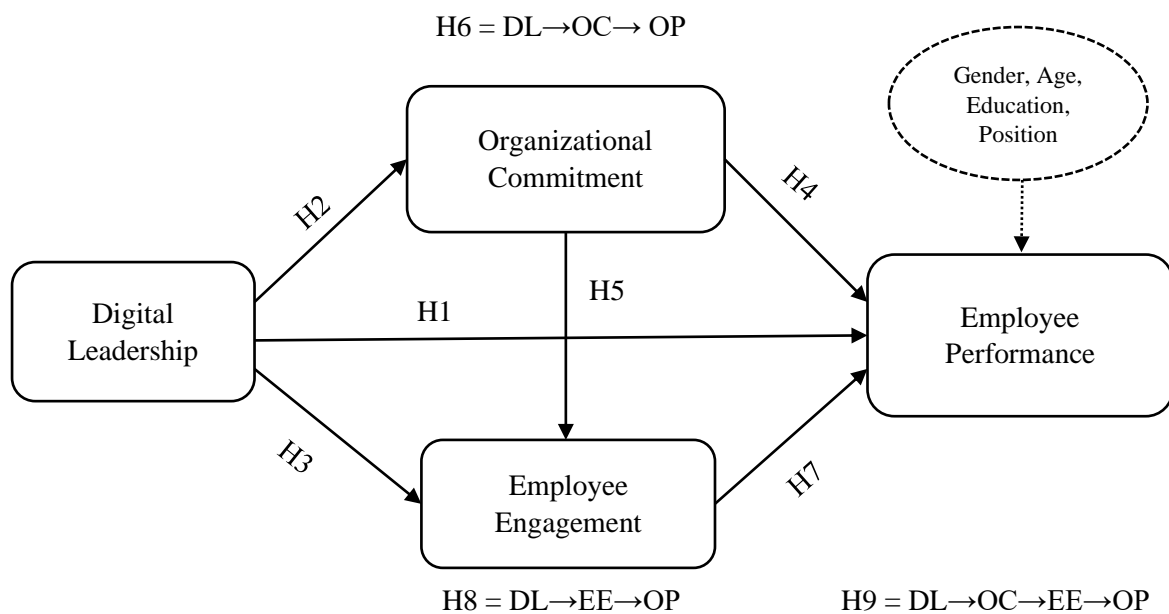


Figure 1. Research Framework

3. METHODOLOGY

3.1 Participants and Procedure

We followed quantitative methods to explore the connections among DL, EE, OC and EP in different organizations. For analysis we have collected 239 primary data from different

intuitions in Bangladesh. We have used a self-administered questionnaire from existing literature and data has gathered through Google forms in a convenient sampling methods. Upon the agreement, an online link in Google form sent to the employees who participated in this study voluntarily through e-mail. We guaranteed the confidentiality of all survey procedures and the collected data. As a result 255 responses were gathered and after cleaning 16 data 239 has used for final analysis. The demographic information of respondents exhibited in Table 1.

Table 1. Demographic Profile

Categories		N	%
Gender	Male	207	86.6
	Female	32	13.4
Respondents Age (Year)	21-29	95	39.7
	30-39	108	45.2
	40-49	33	13.8
	50-59	1	.4
	60 or more	2	.8
Educational Qualifications	Below Honour's	7	2.9
	Honour's	62	25.9
	Master's	163	68.2
	Diploma	6	2.5
	Doctorate	1	.4
Employee Position	Upper Level	47	19.7
	Mid-Level	106	44.4
	Lower Level	61	25.5
	Others	25	10.5
Industry Types	Manufacturing	26	10.9
	Engineering	8	3.3
	Accounting/Finance	84	35.1
	Human Resource	7	2.9
	Supply Chain/Logistic	9	3.8
	Sales/Marketing	25	10.5
	Service	64	26.8
	Others	16	6.7
Total		239	100.0

3.2 Measures

In this research, each scale item was measured using a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). Initially, Ulutaş and Arslan (2017) created an 18-item scale to measure DL across three categories: orientation, communication, and information. They noted that six orientation items represent DL (Erhan et al., 2022), which were subsequently used by Shin et al. (2023). Then, to measure OC, EE, and EP we took items from (Desa and Asaari, 2020; Ghosh et al. 2014)

3.3 Unit of Analysis

This study's sample included managers at all levels, from entry-level to executive. We have covered a variety of Bangladeshi businesses, from manufacturing to the service industry. Besides, we have focused on the employees who have relevant experience. As a result we emphasized more on mid and top level leaders. According to Shin et al. (2023), there is evidence that using individuals as a unit of analysis is suitable for assessing factors like leadership and performance in the existing literature. Following this, individual-level data was gathered for the present study.

3.4 Analysis

SEM was used to find the direct and indirect influences among the relationships of constructs. To explore the unobserved concepts of the proposed research framework and also to measure errors in the estimation procedure (Hair et al., 2012), this study utilized SEM with AMOS. Prior to testing the measurement model, this study also tested CFA to estimate the model fit value of the measurement items (Browne and Cudeck., 1992) and also each model fit of the construct. In this model, it has considered four variables to measure the convergent, discriminant, and validity. In addition, the mediation effect of EE and OC was analysed using Lowry and Gaskin's (2014) specific path analysis.

4. Results

First investigation of Harman's single-factor bias test showed that 37.22% of the variance in the whole was explained by the single-factor structure, which indicates the absence of bias (Podsakoff et al. 2003). To assess the study's discriminant validity, convergent validity, and internal consistency reliability, confirmatory factor analysis (CFA) was used through AMOS. In that case bootstrap 5,000 samples and 90% bias-corrected confidence interval approaches have been deployed to assess the SEM. The mean, standard deviations, and correlations among the constructs are displayed in Table 2.

Table 2. Descriptive Statistics and Correlation Analysis

Variables	1	2	3	4	5	6	7	8	9
1. Gender ^a	1								
2. Respondents Age ^b	-.01	1							
3. Educational ^c	-.020	.12	1						
4. Employee Position ^d	-.02	-.11	-.11	1					
5. Types of Industry	.06	.04	.05	.02	1				
6. Digital leadership	.01	.16*	.10	-.05	-.16*	1			

7. Employee Engagement	.08	.18**	-.03	-.11	-.04	.44**	1		
8. Organisational commitment	.085	.17**	.02	-.14*	-.05	.43**	.79**	1	
9. Employee performance	.02	-.00	-.06	-.14*	-.11	.49**	.60**	.54**	1
Mean	1.13	1.77	2.72	2.27	4.57	4.26	4.07	4.15	4.30
SD	0.34	0.76	0.58	0.90	2.26	0.50	0.61	0.58	0.59

Notes: * $p < .05$; ** $p < .01$; SD=Standard Deviation ^aCoded1 = Male, 2= Female; ^bCoded 1 = 21-29 years, 2 = 30-39 years, 3 = 40-49 years, 4 = 50-59 years, 5 = 60 years or above; ^cCoded 1 = Below Honors, 2 = Honors, 3 = Masters, 4 = Diploma, 5 = Doctorate; ^dCoded 1 = Upper-Level, 2 = Mid-Level , 3 = Lower-Levels, 4 = Others.

4.1 Model fit and Validity Analysis

To assess the adequacy of the model, the study investigated the fit indices using χ^2 -square, goodness of fit index (GFI), adjusted goodness of fit index (AGFI), root mean squared residual (RMR), and root mean square error of approximation (RMSEA) with $GFI > 0.9$, $AGFI > 0.8$, $RMR > 0.08$, $RMSEA > 0.07$, and $CFI > 0.9$ (Hu and Bentler, 1999; Gerbing and Anderson, 1988). The results of model fit (Table 3) show that the model is structurally fit for hypothesis testing.

Table 3. Model Fit Analysis

Model	GFI	AGFI	RMR	CFI	RMSEA [90% of CI]	$\chi^2/(d.f.)$
1 Factor (DL, EE, OC, EP)	.97	.93	.012	.98	.076 [.034, .118]	2.36
2 Factor (DL+EP, EE, OC)	.94	.91	.015	.98	.056 [.035, .077]	1.75
3 Factor (DL+EE+EP, OC)	.93	.80	.017	.98	.047 [.031, .061]	1.52
4 Factor (DL+EE+OC+EP)	.90	.88	.020	.97	.050 [.039, .062]	1.60
Reference Standard	≥ 0.9	≥ 0.8	< 0.08	≥ 0.9	≤ 0.08	≤ 5

Note(s): DL = Digital Leadership; EE = Employee Engagement; OC = Organisational Commitment; EP = Employee performance

Then, to assess convergent validity, the results suggested that all factor loadings of the construct should be 0.6 or higher (Rahlin et al., 2020), and our study results is consistent with standard. Here factor loading of DL ranges from 0.71 to 80, EE is 0.60 to 86, OC is 0.60 to 0.84, and EP is 0.74 to 0.86, and also Cronbach's α coefficient is above 0.80, indicating that it is highly satisfactory. According to Fornell and Larcker (1981), the internal consistency of

reliability was deemed adequate as shown by the CR values, which exceeded the 0.6 (DL =.86; EE =.86; OC = 0.85 and EP =.88) and AVE surpassing the 0.5 cutoff values (DL =.75; EE =.73; OC = 0.73 and EP =.78). Table 4 shows discriminant validity where the square root of AVE for each variable, which is higher than the diagonal and horizontal variables. Therefore, there is no issue of discriminant validity in this research.

Table 4. Discriminant validity

Variables	1	2	3	4
1. Digital leadership	(.86)			
2. Employee Engagement	.44**	(.86)		
3. Organisational commitment	.43**	.79**	(.85)	
4. Employee performance	.49**	.60**	.54**	(.88)

Notes: * $p < .05$, ** $p < .01$; Values in the parentheses in bold form are the square root of AVE for each variable.

4.2 Hypothesis Testing

In the case of testing hypotheses, results presented that all the direct association are significant and accepted ($t > 0.1.96$, $p < 0.05$) except for the effect of OC on EP and the mediation effect of OC. Hypotheses H1, H2, and H3 were supported: DL directly affects EP ($\beta = 0.29$, $p < 0.05$), OC ($\beta = 0.43$, $p < 0.05$), and EE ($\beta = 0.13$, $p < 0.05$). Then hypothesis H4 OC effect on EP was not supported ($\beta = 0.12$, $p > 0.05$), while hypothesis H5 OC effect on EE was also supported ($\beta = 0.73$, $p < 0.05$). Another direct effect of EE on EP was also found to be substantial ($\beta = 0.40$, $p < 0.05$). After that, for indirect effect hypothesis H6, it was found that OC has an insignificant mediating effect between DL and EP ($\beta = 0.05$, $p > 0.05$). However, hypothesis H8 showed EE as significantly partially mediated ($\beta = 0.05$, $p < 0.05$) between DL and EP. Lastly, hypotheses H8 for measuring the double mediation effect found that OC and EE combine to mediate between DL and EP ($\beta = 0.12$, $p < 0.05$). Therefore, H8 was supported. The path coefficients in the model of this study are précised in Table 5.

Table 5: Summary results of the hypotheses

Hypotheses	Standard Estimates		90% of CI		Results
	Direct	Indirect	LBL	UBL	
H1 DL→EP	.29***		.18	.39	S
H2 DL→OC	.43***		.30	.53	S
H3 DL→EE	.13*		.02	.26	S

H4	OC→EP	.12	-.01	.25	NS
H5	OC→EE	.73***	.63	.81	S
H6	DL→OC→EP	.05	-.01	.18	NS
H7	EE→EP	.40***	.27	.53	NS
H8	DL→EE→EP	.05*	.01	.12	S
H9	DL→OC→EE→EP	.12***	.08	.18	S

Note(s): *p < .05, **p < .01, ***p < .001; DL = Digital Leadership; EE = Employee Engagement; OC = Organisational Commitment; EP = Employee performance, CI = Confidence Interval; S = supported, NS = Not supported

5. Discussions

The goal of the present research is to better comprehend the behavior of DL and investigate the connections among EE, OC, and EP in Bangladesh. Firstly, our findings align with previous research by Amelda et al. (2021) which demonstrated a positive association exists between DL and EP. However, Gunawan et al. (2023) reported contrasting results in the e-commerce business of Indonesia. It indicates that digital leaders' vision, mission, attitude, agility, and dynamic capabilities can enhance organizational success. Secondly, this study supports the idea that DL has an effect on OC (Awang et al., 2022; Iriqat and Khalaf, 2017). It infers that DL is influencing and shaping individual and group attitudes, beliefs, and actions to increase EP. Thirdly, results showed that DL has an effect on EE, similar to results found previously that DL has a substantial impact on EE in the banking industry (Winasis et al., 2021), while TL has an effect on EE in the manufacturing industry (Purba, 2021). It clearly indicates that in the digital age, DL is profoundly driving employees' performance.

Fourth, results infer that OCs is not driving EP which is different from those of Gunawan et al. (2023) findings. Similarly, hypothesis H7 indicates that OC is not mediated between DL and EP. Actually, the results of this study are supportive because most of the organization's employees' are not loyal to the organization and also have the cultural effect that the performance of the organization is not highly focused rather than just continuing the work. Fifth, it is found that OC is associated with EE, and EE has a significant positive effect on OE. Along with this, EE mediates between DL and EP. In this perspective, Dessler (2015) mentioned that EE is considered supporting enhancing OC and excellent EP. Additionally, due to the structure and culture, employees are always likely to stay with the boss or management side. Lastly, Hypothesis H9 proved that there is a double mediation going on between DL and EP. The result indicates that the digital leader's role in enhancing EP is directly as well as indirectly associated with EP through OC and EE.

Table 6. Summary of the literature and findings of this study

Reference	Study Purpose	Methodology	Key Findings	Similarities/Dissimilarities of our findings
Turyadi <i>et al.</i> (2023)	Exploring the role of DL in establishments to enhance EP and business success	Qualitative research, using the literature review method.	DL boosts EP, promotes the improvement of technological skills, and aids in achieving commercial goals.	Our findings revealed that DL has impact on EE.
Hidayat <i>et al.</i> (2023)	Exploring the impact of DL, IT and digital competency on EP in the digital are	Quantitative method with explanatory research, SEM by using AMOS.	DL and IT significantly affect EP.	This study also showed similar results, where DL significantly affected EP.
Verma (2022)	Exploring the influence of virtual/DL on OCOC within the work-from-home context during the COVID-19 pandemic in India	PLS-SEM	DL has an impact on OC	Our findings also demonstrated that DL positively influences OCOC in Bangladesh.
Berkovich and Hassan (2023)	Investing the impact of transformational on teachers' commitment and school effectiveness	Quantitative correlational research	TL has a substantial impact on OC of teachers	Our results infer that DL has a significant positive impact on OC.
Restu <i>et al.</i> (2022)	Examining the impact of DL on EE of millennial generation within Ditpolair Polda Metro Jaya	Survey questionnaire, Kruskal-wallis test, and multiple regression	The results proved that DL had a substantial effect on EE.	Results showed similar findings to the previous study that DL positively affects EE.
Sulistiana and Darma (2023)	Exploring the impact of DL on EP	Smart PLS and Job Demands- Resources (JD-R) theory	DL has a significant impact on EP	DL is positively associated with EE in the emerging economy.
Gunawan <i>et al.</i> (2023)	To explore the impact of DL on EE through mediation of OC in Indonesia.	Quantitative approach using electronic questionnaire in a snowball pattern.	It has been determined that OC has positive impact on EP.	Results indicate that OC has no significant impact on EP.

Van Waeyenberg <i>et al.</i> (2022)	Exploring the association between performance management and teacher performance, with a focus on the roles of affective OC and exhaustion..	PLS-SEM with SETtheory and the job demands-resources Model.	The association between OC and EP is positive.	This study shows an insignificant effect between OC and EP.
Gunawan <i>et al.</i> (2023)	Investigating the relationship between talent management and work engagement and its effect on the performance of nurses in Indonesia.	Quantitative approach using electronic questionnaire In a snowball pattern.	Established DL significantly impacts performance factors through the mediation of OCs.	This study proved that OC has no mediation effect between DL and EP.
Donkor <i>et al.</i> (2021)	Analysing the mediating role of OC on the association between leadership styles and EP in state-owned enterprises (SOEs) in Ghana using SEM.	PLS-SEM	It has been found that DL significantly influences EP through the mediation of OCs.	OC failed to mediate between DL and EP in Bangladesh.
Park <i>et al.</i> (2022)	Examining the structural relationships between TL, affective OC, and job performance, while also exploring the mediating role of EE in these relationships.	PLS-SEM	There complete mediation lies between TL and job performance.	Results again proved that EE significantly mediates between DL and EP.

Source: Author's compilation

5.1 Theoretical Implications

In this study, the theoretical contribution involves in the context of Bangladesh. It could involve the interaction of social exchange and RBV theories, and adapting to the local context. The theory proposed an integrated model that provides a nuanced consideration of the role of DL, EE, and OC for EP in the developing country perspective. In the corresponding way, that theory positively contributes to DL, EE, and OC in terms of EP. Additionally, empirical research and validation of these theoretical constructs within the Bangladeshi context will be crucial for the practical application and refinement of the theoretical framework. This study suggests that OC and employee engagement serve as crucial factors connecting DL and job performance, and digital leaders' social connections with employees increase EP. In this study, it matches Aldhuwaihi's (2013) opinion that DL influences followers to become more committed and engaged in the organization and results in full effort and knowledge that provide for the organization to increase performance and achieve organisational objectives (Ahmed et al., 2021). Overall, effective leadership behaviours like empowerment, communication, and support cultivate employee engagement, characterized by motivation, dedication, and discretionary effort toward achieving EP.

5.2 Practical Implications

Moreover, a number of useful implications from the current research should be considered, especially in the context of developing economies. The implications of this study will help to build strong commitment (Awang et al., 2022; Berkovich and Hassan, 2023) and EE (Restu et al., 2022) among employees through the predictors of DL. The findings of this study are substantial for practitioners seeking to enhance their digital transformation. First of all, this study has found that DL positively impacts EP in Bangladesh, implying that the practice of DL in the present context plays a substantial role in improving the overall EP (Turyadi et al., 2023). Secondly, DLs are able to increase EE (Restu et al., 2022) through digital systems, ensuring more committed employees (Berkovich and Hassan, 2023), which leads to improved EP (Bahri et al., 2021). Therefore, it highlights the necessity of selecting capable digital leaders to propel digital transformation in the digital era. Third, EE in organizations is fostered through a proper work environment, opportunities for employee development, and proper recognition and feedback on their work (Winasis et al., 2021). We recommend that these practices be introduced in the context of digital transformation, which has a substantial impact on improving EP. Additionally, policymakers should ensure the proper digital infrastructure, which will enable the cultivation of employee engagement and commitment. Also, it can help managers

and leaders acquire the required digital skills for proper leadership practice. Proper policies from practitioners and sufficient support from the government and other respective authorities can produce competent DL to face the upcoming digital transformation and adapt to the VUCA environment. Such an initiative will help Bangladesh transform into a smart Bangladesh in the future.

5.3 Limitations and Future Research Scope

Despite several theoretical and practical implications, this research has some limitations, like others, that need to be clarified. First, we measure EP using predictors such as DL, EE, and OC, but there are several other factors that can be incorporated in the future study, such as emotional intelligence, digital literacy, social media, etc. Also, the mediating role of digital strategies, structures, culture, and digital well-being can be explored. Second, it is a survey-based study, but in future research endeavors, researchers can arrange holistic approach with focus group interviews with digital leaders, which will provide more deep insights about this phenomenon. Third, we have conducted this study on the leaders of several types of industries; future studies can focus on specific fields such as the IT industry, manufacturing, or service. Lastly, cross-cultural study, including relations between financial and non-financial benefits and the development of DL abilities, is another field to be explored in the future.

5.4 Conclusion

Bangladesh is a developing country where DL is an important issue for organizational management. The outcomes indicate that digital leaders have a substantial impact on enhancing OC and EE, as well as increasing EP. However, due to the culture and nature of the job, most of the time, employees are not loyal or committed to the organization, which might be an impediment to success. In this perspective, it can be concluded that in this digital age, to gain competitive advantages and bring success, there needs to be increased employee engagement and commitment-related activities for better performance and sustainability.

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