

The influence of digital transformation on employee engagement and organizational commitment

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Abstract Digital transformation reshapes work environments through technology, influencing employee engagement and organizational commitment by enhancing job satisfaction and loyalty. The study analyzes how digital transformation affects employee engagement together with organizational commitment throughout an investigation of technology effects on staff commitment while exploring links between technology implementation and company success. The study participants consist of staff members from multiple businesses who work in different positions at various organizational levels including IT, business management, human resources and organizational behavior. The research survey included 467 employees working in multiple organizations to study how digital transformation affects employee engagement together with organizational commitment. Statistical methods, incorporating correlation analysis, multiple regression analysis, and structural equation modeling (SEM) to determine the relationships between independent variables (technology enablement, employee training, leadership support, workplace flexibility, internal communication) and dependent variables (employee engagement, organization commitment). The results indicate that digital transformation significantly enhances employee engagement and organizational commitment, particularly through effective training, leadership, and communication. Organizations that embrace technological tools and flexible work environments show higher employee motivation and loyalty, suggesting a strong link between digital change and workforce satisfaction. Employees benefit from professional digital tool training because it increases their job engagement and helps them boost productivity and achieve better performance. Leadership support plays a crucial role in facilitating digital transformation, ensuring employees feel guided and encouraged to adapt to technological advancements. Internal communication systems that are effective promote a committed workforce through their establishment of transparent collaborative organizational cultures. The findings emphasize that organizations that prioritize digital transformation not only enhance their employees' engagement and commitment but also contribute to overall business success and competitiveness in a rapidly evolving digital landscape.

Keywords: digital transformation, employee engagement, organizational commitment, business transformation

1. Introduction

Digital transformation (DT), which redefines sectors, business models, and consumer experiences, is still a major driver of change in the dynamic corporate world of today (Agustian et al., 2023). As organizations adopt emerging digital technologies, including data analytics, cloud computing, digitization, and artificial intelligence, traditional ways of conducting business are being disrupted (Ochuba et al., 2024). The implementation of DT allows businesses to innovate in previously inconceivable techniques, improve consumer experiences, and simplify operations. However, while much attention has been given to the technological and strategic aspects of DT, less focus has been placed on its impact on the human side of organizations (Zhang and Chen 2024). Employees are the center of any DT effort, but the impacts of DT on their attitudes, behavior, and psychological well-being are usually neglected (Picazo Rodríguez et al., 2024). With new technologies being implemented in organizations, employees must learn new tools, processes, and workflows, which may lead to different levels of job satisfaction, engagement, and stress (Browder et al., 2024). These changes also affect job-related factors such as autonomy, decision-making power, and the overall work environment. For example, although some employees will feel empowered by the new opportunities brought about by DT, others will experience resistance to change, fear of job displacement, or anxiety about acquiring new skills (Frank et al., 2024). Understanding the influence of DT on employees is very important for organizations in the context of Industry 4.0, an era defined by smart technologies and the digitalization of

manufacturing, production, and service industries. In the rapidly changing landscape, organizational responses must focus not only on technological upgrades but also on the psychological and behavioral changes that accompany such changes (Nguyen et al., 2024). An engaged, motivated, and mentally prepared workforce toward transformation is much more likely to make positive contributions to the success of DT initiatives.

Cetindamar Kozanoglu and Abedin (2021) examined digital competence among employees as an institutional benefit, emphasizing the environment in which technological advances were employed and situated. Using the accessibility idea as an outline, the investigation creates a new paradigm for thinking about digital literacy at the individual and organizational levels. It also uses information/cognitive and social practice/articulation advantages to measure digital competence. Cetindamar et al. (2021) examined how staff members comprehend and use technological innovations, especially cloud technologies. Information from 124 Australian employees was analyzed via the framework of the Theory of Planned Behavior (TPB). According to the investigation, cloud technology utilization and workers' digital competence were positively correlated. It expanded the TPB paradigm and measured individuals' digital competencies, incorporating it into the corpus of research on technological governance. DT in the office includes modifications to work procedures and activities in addition to the use of new technologies. The motivation for staff members to embrace a future position was influenced by psychological requirements such as connection, competence, and autonomy. Selimović et al. (2021) examined whether support for digital work, worker engagement, and mental health promote the transition of work environments. Employee performance and well-being are strongly impacted by interpersonal connections in digital workplaces, which also increases employees' intent to encourage a digital shift. For businesses, the impact of the COVID-19 epidemic has been significant, compelling them to change and adapt their operational protocols. The workforce was rapidly becoming digital since work from home was more required and offices were becoming less significant.

Savić (2020) looks at how the pandemic has affected the transition to telecommuting, which has become a crucial commercial transformation. It examines the quick transition to remote work and how it spurs corporate innovation, emphasizing the major elements affecting the DT of workplaces throughout the world. With an emphasis on theories of leadership, employment laws, and cultural variation, this study investigates how organizational DT affects worker performance in the United Arab Emirates. Shwedeh et al. (2023) investigated 50 workers from various industries to fill a knowledge vacuum and support the UAE's development as a major international commercial hub. Five important factors have an impact on worker efficacy. The influence of worker experience on corporate workers' psychological health, organizational commitment, and job satisfaction was examined by Lee and Kim (2023). It emphasizes three elements: cultural, technical, and physical encounters. The findings indicate that while technical experience has no discernible effect on dedication to the organization, social and physical interactions do. Employee experience management may enhance devotion by enhancing psychological health and work happiness. This further underlines the importance of how their technical, artistic, and physical abilities had to be incorporated.

Chatterjee and Mariani (2022) investigated the effects of the social exchange theory on worker participation in a digital work environment. The findings revealed that engagement is significantly influenced by factors such as psychological autonomy, training, development, employee mobility, and information sharing. The study methodology was validated through an online survey of 205 staff members from other businesses in Klang Valley, Malaysia. It determines the factors that impact both employee participation and involvement in DT. The investigation revealed three relevant DT process objectives and variables via a combination of research evaluation and the practical experience of practitioners. The study showed that effective technical system conversions must include employee acceptance and high-quality implementation along with specialized measurement methods. Ullrich et al. (2023) conducted a systematic review of EE with intervention strategies in organizational transformation. The findings from the research identified both determinants that influence DT engagement and employee deepness of involvement. The practice knowledge of practitioners, in addition to research evaluation, identified three key transformation process goals and determinants for DT. The study findings showed that worker acceptance and implementation of campus quality, along with evaluations suited for specific contexts, were important factors that generated successful conversions.

Research objective: To learn how employees' motivation, engagement, and loyalty are affected by digital transformation (DT), e.g., new technology and tools. It examines how these changes might enhance commitment to business and job satisfaction.

1.1. Hypothesis development

H1: Technology Enablement (TE) → Employee Engagement (EE)

- TE involves providing the digital tools and technologies to the workplace in order to assist employees to perform their activities more effectively and thus improve the relationship they have with work.

H2: Employee training (ET) → Employee Engagement (EE)

- Employee training is a process to develop employees in the knowledge and skills necessary to be successful in their roles and responsibilities, leading to increased confidence, job satisfaction, and EE.

H3a: Leadership Support (LS) → Employee Engagement (EE)

- Leadership support can be understood as the type of support, encouragement, and recognition a leader provides. When leaders provide support, the employee is motivated, engaged, and interested in their work, it increases EE levels.

H3b: Leadership Support (LS) → Organization Commitment (OC)

- Leadership support also has a strong impact on organizational commitment, engendering attachment and loyalty among employees. Employees feel valued and more connected to their leaders, therefore leading to increased commitment to organizational objectives.

H4: Workplace flexibility (WF) → employee engagement (EE)

- Workplace flexibility is the ability to modify work hours and places. This implies that flexible work arrangements encourage increased EE through autonomy and work–life balance.

H5: Internal communication (IC) → organizational commitment (OC).

- Internal communication includes transparency, frequency, and openness among the members of the organization, which induces a sense of belongingness and loyalty; thus, employees become highly committed to the organization.

2. Materials and Methods

2.1. Research design

The effect of the DT on EE and organizational commitment was evaluated using a quantitative cross-sectional approach. Research has used a survey-based approach and collected data from employees working in different sectors to analyze the relationships among variables of DT (DT) and the associated results with employees, focusing on the impact of technology adoption on employees' motivation, involvement, and loyalty. It also investigates the links of independent variables such as TE, ET, LS, Workplace Flexibility (WF), and Internal Communication (IC) regarding digital tools to dependent variables such as EE (EE) and Organization Commitment (OC) regarding organizational success using a sample of 467 employees from diverse industries for analysis, which are influenced by how these factors motivate, involve, and tie employees (Figure 1).

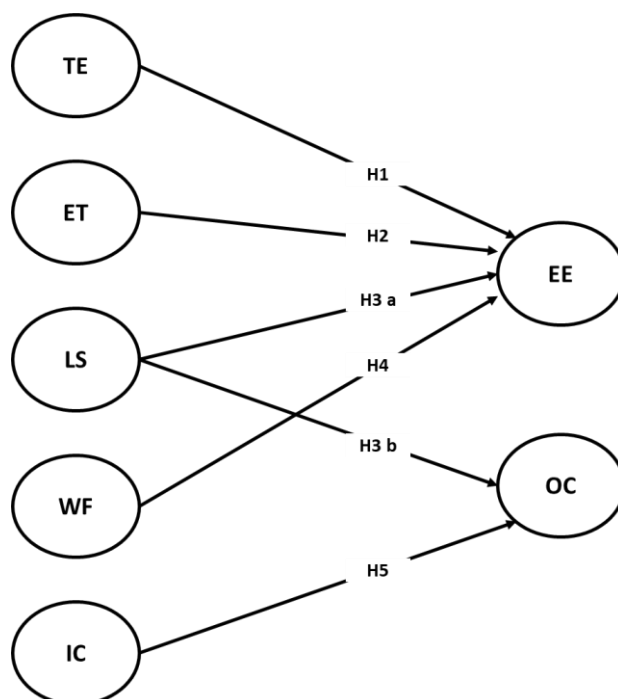


Figure 1 Conceptual framework of the hypotheses.

2.2. Participants and sample

This research included 467 employees working in a variety of industries, such as IT, business management, human resources, and organizational behavior. The respondents who were chosen through stratified random sampling ensure the



diversity of the employees in terms of job function, seniority, and industry across various roles and levels within organizations.

2.3. Data collection and questionnaire design

To gather information, a structured questionnaire was designed. The survey will be divided into two main sections:

- Demographic Information: Age, gender, role, and industry, with a focus on full-time employees with at least one year of experience in relevant fields.
- Perception of DT: Items measuring the perception of independent variables such as technology, training, leadership, flexibility, and communication and dependent variables such as engagement and commitment. The items are Likert scale measures that utilize a 5-point rating system starting at 1 (strongly disagree) and going up to 5 (strongly agree). Full-time workers having at least an entire year of experience in their respective industries such as organizational behavior, business management, IT, and human resources are eligible to apply. Part-time, contract, and temporary employees, as well as those at the entry level or nonprofessional level, are excluded from this survey.

The participants received the survey digitally, ensuring their convenience and ease of access. Demographic information is gathered to understand whether these factors affect the influence of DT. Table 1 and Figure 2 display the participants' demographic data.

Table 1 Demographic Information of the participants.

Demographic Category	Subcategories	Number of Participants (N = 467)	Percentage (%)
Age	18 – 24 years	85	18.20%
	25 – 34 years	165	35.30%
	35 – 44 years	120	25.70%
	45 – 54 years	65	13.90%
	55 years and above	32	6.80%
Gender	Male	250	53.50%
	Female	215	46.10%
	Other	2	0.40%
Employee Role	Entry-level	90	19.20%
	Mid-level	225	48.10%
	Senior-level	115	24.60%
	Manager/Executive	37	7.90%
Industry	Information Technology	150	32.10%
	Business Management	120	25.70%
	Human Resources	80	17.10%
	Organizational Behavior	50	10.70%
	Other	67	14.30%
Tenure	Less than 1 year	80	17.10%
	1 – 3 years	130	27.80%
	4 – 6 years	105	22.50%
	7 – 10 years	95	20.30%
	10+ years	57	12.20%
Technological Expertise	Basic knowledge	100	21.40%
	Intermediate knowledge	200	42.80%
	Advanced knowledge	167	35.70%

2.4. Statistical analysis

The statistical analysis aids in comprehending the ways in which various aspects of DT affect corporate commitment and EE.

2.4.1. Correlation analysis

Technology adoption, training, leadership, flexibility, and communication in relation to EE and organizational commitment are some examples of variables that may be utilized to assess the direction and strength of their association using correlation analysis. It assists in determining if these elements are positively or negatively connected, as well as the level to which they impact one another. This serves to measure the value addition of each factor to employees while determining the relative contributions toward organizational success.

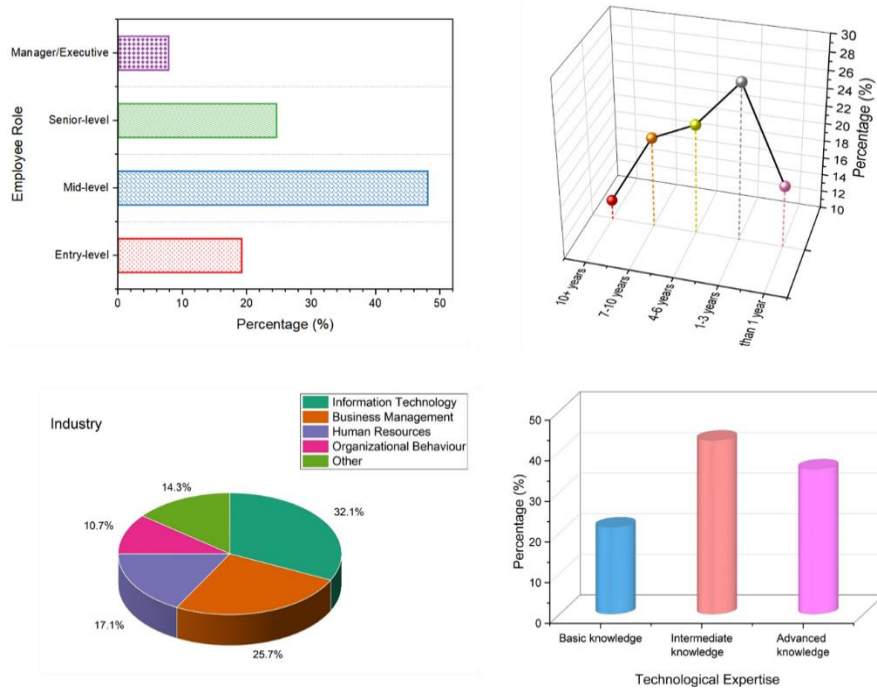


Figure 2 Demographics of the participants.

2.4.2. Regression analysis

The purpose of regression analysis is to determine the cause and effect of associations among variables that are both independent and dependent. This further serves to measure the value addition of each factor to employees while determining the relative contributions toward organizational success.

2.4.3. SEM analysis

Structural equation modeling is used with multiple variables to analyze complex relationships and evaluate their effects both directly and indirectly, offering a thorough and integrated perspective of how several factors of DT engage and contribute to employee involvement and organizational commitment. This approach allows for a more detailed understanding of that connection and the way it impacts the efficiency of an organization.

3. Results

3.1. Multiple regression analysis

The regression analysis assists in determining how independent factors influence dependent factors, enabling the assessment of individual predictors while controlling for other factors and thereby identifying key drivers of engagement and commitment.

Table 2 Multiple regression analysis of factors.

Variable	Unstandardized Coefficients (B)	Standardized Coefficients (β)	p-Value	t-Value	95% Confidence Interval	
					(Lower)	(Upper)
TE	0.376	0.298	< 0.001	4.89	0.227	0.525
ET	0.272	0.208	0.001	3.52	0.126	0.418
LS	0.324	0.250	< 0.001	4.23	0.202	0.446
WF	0.193	0.150	0.007	2.71	0.065	0.321
IC	0.274	0.195	< 0.001	3.86	0.14	0.408
EE	0.415	0.330	< 0.001	5.47	0.296	0.534
OC	0.359	0.289	< 0.001	4.12	0.215	0.503

Figure 3 illustrates the influence of each variable on engagement and commitment, with higher β values indicating stronger effects, and At $p < 0.05$, every factor is statistically significant. Table 2 Results of the analysis that assesses how independent factors influence the dependent variables. This table shows the unstandardized coefficients (B), which indicate the raw effect of every factor on the outcomes, whereas the standardized coefficients (β) enable us to understand the relative importance of each factor. TE has a moderate influence on EE with a (B=0.376 and $\beta= 0.298$). ET is also positively



related to engagement ($B=0.272$ and $\beta=0.208$). LS has the greatest influence, with positive impacts on both EE with a ($B=0.324$ and $\beta=0.250$) and OC with a ($B=0.415$ and $\beta=0.330$). WF is related to engagement with a small effect size ($B=0.193$, and $\beta=0.150$). $B=0.274$ and $\beta=0.195$ for engagement and $B=0.359$ and $\beta=0.289$ for commitment are the two outcomes that are impacted by IC. Overall, the empirical findings indicate that LP is the most significant for EE and OC, while there is also a significant correlation between TE and ET with IC in enhancing worker satisfaction and loyalty.

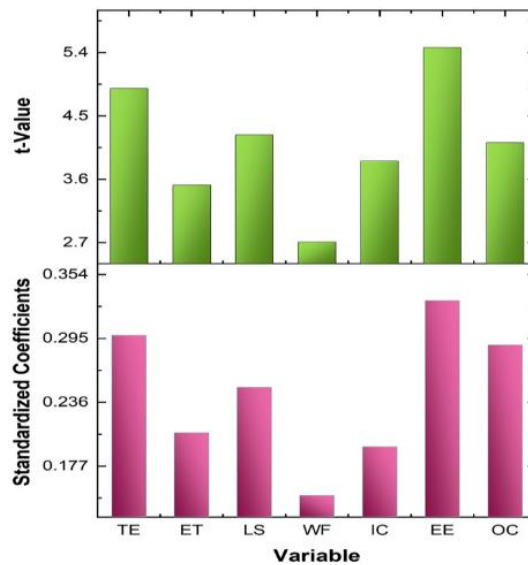


Figure 3 Impact of DT on employee engagement and commitment.

3.2. Correlation analysis

A statistical method called correlation can be used to ascertain the strength and direction of a relationship between two variables. It is one of the statistical methods applied to determine the direction and intensity between two variables, which explains how DT factors influence EE and OC. The DT variables and their associated impacts on OC and EE are presented in Table 3 and Figure 4.

Table 3 Analysis of correlations between DT variables' influence on organizational commitment and employee engagement.

Variable	TE	ET	LS	WF	IC	EE	OC
TE	1	-	-	-	-	-	-
ET	0.65*	1	-	-	-	-	-
LS	0.60*	0.68*	1	-	-	-	-
WF	0.55*	0.62*	0.64*	1	-	-	-
IC	0.70*	0.80*	0.75*	0.68*	1	-	-
EE	0.75*	0.80*	0.78*	0.70*	0.85*	1	-
OC	0.70*	0.78*	0.72*	0.68*	0.82*	0.88*	1

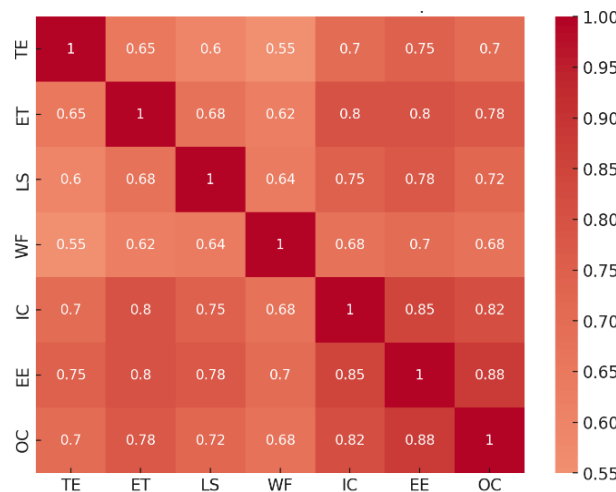


Figure 4 Correlation analysis of the DT factors.

The correlation value ranges from -1 to +1, indicating how strongly each factor has a relationship with the outcome. The results show that IC has the strongest positive correlation with both EE (0.85) and OC (0.82), indicating that better communication leads to high levels of engagement and commitment. Similarly, employee training factors (0.80 for engagement, 0.78 for commitment), TE factors (0.75 for engagement, 0.70 for commitment), and leadership support factors (0.78 for engagement, 0.72 for commitment) also share strong positive relationships that drive increased engagement and commitment. This finding indicates that implementing DT techniques to improve these aspects can significantly increase an OC as well as EE.

3.3. Structural equation modeling (SEM) analysis

SEM indicates the direct and indirect impacts of DT on EE and commitment (Figure 5).

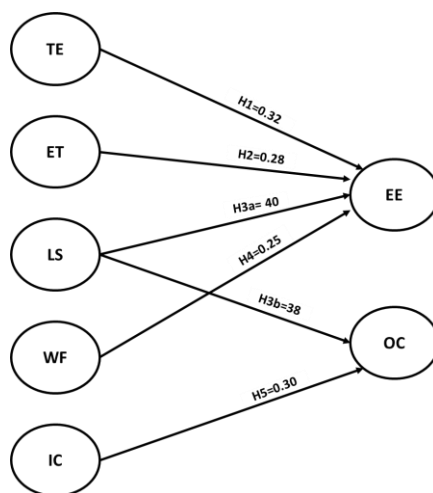


Figure 5 Visual representation of SEM analysis.

Table 4 and Figure 5 demonstrate that TE, ET, LS, WF, and IC all positively affect EE and organizational commitment. LS had a high combined estimate of both EE (0.40) and EE (0.38). Other significant findings were a TE of 0.32, an ET of 0.28, a WF of 0.25, and an IC of 0.30, all of which had positive relationships with their respective outcomes. These results indicate the significance of these factors in enhancing employee satisfaction and organizational loyalty.

Table 4 Structural equation modeling (SEM) results for various factors.

Hypothesis	Path	Coefficient	SE	Critical Ratio	P Value	Interpretation
H1	TE → EE	0.32	0.07	4.57	0.0001	The positive effect of TE on EE.
H2	ET → EE	0.28	0.06	4.67	0.0012	The positive effect of employee training on engagement.
H3a	LS → EE	0.40	0.55	6.88	0.00001	Strong Positive effect of leadership support on organizational commitment and EE.
H3b	LS → OC	0.38	0.50	6.25	0.00001	Strong Positive effect of leadership support on both EE and OC.
H4	WF → EE	0.25	0.05	4.95	0.0001	The positive effect of workplace flexibility on EE.
H5	IC → OC	0.30	0.07	4.23	0.0021	The positive effect of internal communication on organizational commitment.

4. Discussion

To enhance the understanding of how DT influences business commitment and EE, Sarmiento & Riana (2024) investigated how performance is affected by leadership and flexibility. Just as transformational leadership enhances lecturer efficiency and knowledge sharing, effective DT fosters engagement and commitment through communication, training, and leadership support. For organizations to succeed, they must overcome adaptability challenges, ensure the seamless adoption of technology, and cultivate a culture that promotes long-term commitment, motivation, and collaboration.

According to Chatterjee & Mariani (2022), investigations have focused primarily on organizational flexibility and competitiveness rather than EE and commitment. While DT enhances flexibility, its impact on EE, loyalty, and motivation remains less understood. Since engagement and commitment are crucial for sustaining long-term institutional performance in an involved digital landscape, understanding how technology adoption influences employee experiences, training, and leadership support is essential.

The emphasis of this examination on digital literacy and technology use, rather than employee involvement and organizational commitment, is a notable drawback. While digital competence influences technology adoption, its broader



impact on motivation, dedication, and job satisfaction remains less understood. As highlighted by Cetindamar et al. (2021), sustaining long-term organizational success in a rapidly evolving digital world relies heavily on employee commitment. Therefore, understanding how DT fosters engagement through leadership, training, and communication is essential.

The analysis proves that DT has an effect on EE and OC. Multiple regression analysis indicates that the factor that has the biggest impact on both EE and OC was found to be LS at (0.40) and (0.38), respectively, followed by other factors, including TE (0.32), ET (0.28), IC (0.30), and WF (0.25), which also positively influence these outcomes. Correlation analysis indicates that internal communication (IC) correlates most with employee engagement (0.85) and organizational commitment (0.82), which reflects highly correlated clear communication. The SEM results are consistent with this, showing all factors make significant contributions to improved employee engagement and organizational commitment, with leadership support being powerful, followed by technology ability and training employees. The findings suggest that organizations that are adopting DT, particularly in these industries, stand to build greater motivation and commitment among employees.

5. Conclusions

Research show DT has a very positive effect on both EE and OC. The research results showed that leadership support represents the greatest factor influencing the development of engagement and commitment. The other factors influencing engagement and commitment in order were TE, employee training, internal communication, and workplace flexibility. Internal communication was an especially strong factor in the development of both engagement and commitment. The analysis combining multiple regression and correlation analysis with structural equation modeling (SEM) confirms that all those factors contribute significantly to furthering employee motivation and loyalty. The results suggest that organizations that embrace DT, especially strong leadership, effective communication, and robust training programs, can be expected to have motivated employees, who are focused on their work and ultimately contribute to better organizational performance and success.

5.1. Limitations and future scope

The focus on specific industries may reduce its applicability to other sectors. Additionally, a comprehensive analysis of external factors such as employee resistance and company culture to change is lacking. Further investigations could explore industry-specific challenges, the impact of developing technology and the long-term consequences of DT in sustaining organizational commitment and EE.

Ethical Considerations

Ethical review and approval were not required for the study of human participants in accordance with the local legislation and institutional requirements. Written informed consent for participation was not required for this study in accordance with the national legislation and the institutional requirements.

Conflict of Interest

The authors declare no conflicts of interest.

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