THE RESEARCH ON THE INFLUENCE OF TRANSFORMATIONAL LEADERSHIP ON EMPLOYEE DIGITAL-ENABLED PERFORMANCE

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Abstract

This study attempts to examine the relationships between transformational leadership, digital learning and employee digital performance. A research model was proposed and tested with 358 samples from 14 companies in China. The results reveal that transformational leadership has a positive effect on digital exploitative learning. Similarly, transformational leadership has a positive effect on digital exploratory learning. Further, the study finds that transformational leadership has a positive indirect effect on employee digital performance through the mediation of digital exploitative learning and through the mediation of digital exploratory learning. This study consolidates and extends the technology use literature and advances leadership theory to the digital context. Furthermore, practitioners can use the findings of this study when they perform their role of leaders to challenge creativity and innovation among followers.

Key words: Transformational Leadership; Digital Learning; Employee Digital-Enabled Performance

Introduction

In recent years, the digital economy has become a key force in restructuring global factor resources, reshaping the global economic structure, and changing the global competitive landscape. The rapid development of digital technologies such as cloud computing, big data, the Internet of Things, mobile Internet, and artificial intelligence has greatly promoted the digital process (Lai, 2020). The new generation of digital technology is profoundly changing the competitive structure of organizations, the behavior and expectations of customers, the way of business, the way of product production and service delivery, and the way of work (Fichman et al., 2014). For enterprise employees, the use of digital technology is changing the way they work and the effectiveness of their work, thus becoming an important component of their job performance. The flexibility and adaptability of digital technology not only provide possibilities for the efficiency and innovation of employee work, but also inevitably bring enormous pressure and challenges to employees. This pressure and challenge can affect employee work performance, thereby affecting the economic benefits of the organization. The effective use of digital technology by employees to achieve job performance - digital performance - is considered one of the most important factors for the success of digital transformation in enterprises (Saldanha, 2019). Therefore, how to improve employee digital performance to

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achieve maximum organizational benefits is an urgent problem that enterprises need to solve in response to digital transformation.

Digital transformation is not only a technological revolution, but also a cognitive revolution, a revolution in thinking and business models, involving a systematic change and innovation in enterprise strategy, organization, operation, talent, etc. ,and promoting digital transformation of enterprises is not only the responsibility of the Chief Information Officer, but also the joint responsibility of the Chief Executive Officer and all managers for change and innovation (Peng, 2019). Therefore, enterprise managers play a crucial role in promoting digital transformation and encouraging employees to use digital technology for standard and innovative work. Existing research has shown that transformational leadership, as a modern leadership paradigm (Song et al., 2018), can stimulate employees' potential and high-level needs, flexibly and creatively adjust internal organizations to adapt to changes in the external environment, and enable employees to maximize their potential to achieve high-level performance (Su & Zhang, 2016). However, there is still a lack of sufficient research on how transformational leadership behavior drives employees to use digital technology to achieve digital performance. Therefore, testing the impact of transformational leadership behavior on employee digital performance has important theoretical and practical significance.

Literature Review and Hypotheses Development

1.Transformational Leadership and Employee Digital Performance

There have been rich research results on the effectiveness of transformational leadership behavior, with studies indicating a positive correlation between transformational leadership and employee work outcomes. For example, Kirkpatrick and Locke(1996) examined the effects of transformational and charismatic leadership on employee attitudes and performance, which found that the implementation of task oriented visions had a positive impact on the quality and quantity of employee job performance; Wu Min et al. (2009) tested a positive correlation between transformational leadership behavior and employee job performance. With the arrival of the digital economy era, digital technology has fundamentally changed the operation, management, and service processes of enterprises, and employees have gradually evolved into "digital labor", and their work performance has been transformed into digital performance. The concept of digital performance goes beyond traditional performance concepts and is no longer limited to the use of a single technology, such as innovative use (Li et al., 2013), deep structural use (Burton-Jones & Straub, 2006), or effective use (Burton-Jones & Grange, 2013), and their impact on job performance. Lehrer et al. (2018) proposed that service innovation was achieved through the use of data analysis techniques, and in the post pandemic era, employees engaged in virtual collaboration through digital channels such as email, social media, instant messaging, and video conferencing. In both cases, the use of technology is a necessary component of employee performance. Shao et al. (2022) inferred two aspects of digital performance from the above two examples - using digital technology to achieve standard task performance (such as data manipulation and problem-solving), namely digital-enabled task performance, and striving for innovative performance (such as creative information display, new product design, and innovative working methods), namely digital-enabled innovation performance, and verified the positive impact of transformational leadership behavior on both. How does transformational leadership behavior affect employee digital performance? This study constructs a conceptual model of the relationship between transformational leadership behavior and employee digital performance, and verifies the conceptual model through standardized empirical research.

2.Transformational Leadership and Digital Exploitative Learning

Transformational leadership can motivate employees to go beyond their own interests by changing their morale, ideals, interests, and values, and emphasize guiding employees to focus on organizational interests and improve efficiency through exemplary and exemplary effects (Perryer et al., 2010). Business leaders can convey a signal to employees through their

own use of digital technology and trust in data analysis results, forming influence on subordinates and stimulating their initiative and enthusiasm to learn through digital technology; Leaders inspire subordinates to have intrinsic motivation and enthusiasm for their work, as well as acceptance and recognition of the organization's collective goals, by clearly describing the digital development vision in the future of the organization to their subordinates (Sui et al., 2012). These all make subordinates be willing to put in more effort to achieve the organization's goals, such as using data analysis to improve and perfect existing resources. Leaders inspire employees and encourage knowledge sharing among employees to provide them with different work ideas, encouraging subordinates to try different ways of working, including using data analysis methods. By providing employees with digital platforms and technologies, and giving subordinates the corresponding authority to handle their work, leaders stimulate their initiative to learn using digital technology and encourage them to take risks (Bass & Riggio, 2006). They believe that tasks themselves can not only benefit the achievement of organizational goals, but also align their own values with those of leaders and organizations. Based on the above analysis, the following assumption is proposed:

H1: Transformational leadership has a positive impact on digital exploitative learning.

3. Digital Exploitative Learning and Digital-Enabled Task Performance

The digital exploitative learning activities of employees mainly refer to the improvement and expansion of existing professional knowledge, technologies, products, and markets by enterprise employees using digital technology. Therefore, digital exploitative learning will promote employees to complete work standard tasks more, better, and more effectively on the new generation digital technology track. For example, digital utilization learning can help employees improve work efficiency, complete more tasks under the same time and conditions, and thus improve employee digital-enabled task performance. In addition, the essence of digital exploitative learning is to improve and expand, fully utilizing the value of existing technology and knowledge in a low-risk way (Benitez et al., 2018). The possibility of progress and expansion is greater, the probability of success is also higher, and the possibility of improving personal digital-enabled task performance is also greater. Based on the above analysis, this study believes that the expansion and improvement of knowledge and technology brought about by employee digital exploitative learning are beneficial to the improvement of employee digital task performance, and proposes the following assumption:

H2: Digital exploitative learning has a positive impact on employee digital-enabled task performance.

4. Digital Exploitative Learning and Digital-Enabled Innovative Performance

Digital exploitative learning mainly has a positive impact on employee digital innovation performance through skill enhancement, innovative thinking, and continuous improvement. Digital exploitative learning provides employees with broader and more flexible learning resources and methods, allowing them to access relevant digital innovation knowledge and skills at any time (Tian & Li, 2022). This helps to enhance employees' professional knowledge and technical abilities, providing richer materials and tools for digital innovation; Digital utilization learning emphasizes experimentation, reflection, and practice. Through the continuous improvement and expansion of existing technologies, products, and markets, interactive, multimedia, and personalized learning methods provided by digital tools (Cenamor et al., 2019), it is easier to cultivate employees' innovative thinking and problem-solving abilities, and they can flexibly respond to challenges in a digital environment. Digital exploitative learning encourages continuous learning and improvement. By constantly trying new methods and learning new skills, employees can adapt to the constantly changing digital environment more quickly, and apply the new knowledge they have learned to practice, promoting continuous iteration and improvement of digital innovation.

Digital exploitative learning provides employees with better learning resources, cultivates innovative thinking and problem-solving abilities, promotes continuous learning and improvement, and all of these factors contribute to improving employee performance in digital innovation. By continuously learning and applying digital skills and knowledge, employees can

better adapt to the digital environment, improve the efficiency and quality of digital innovation, and thus bring better digital-enabled innovation performance. Based on the above analysis, this study proposes the following assumption:

H3: Digital exploitative learning has a positive impact on employee digital-enabled innovation performance.

5.Transformational Leadership and Digital Explorative Learning

Transformational leaders themselves have a sense of change and innovation, constantly instilling in employees the idea of utilizing new technologies for change (Chen, 2010), and setting a good example for employees. Transformational leaders view difficulties and threats as opportunities and driving forces for change, influencing employees through their own change and innovative behaviors, and continuously attempting to break through themselves through digital exploratory learning. Cigdem and Ozturk (2016) believe that organizational learning is a knowledge reserve established by enterprises to cope with business needs in order to survive in the constantly changing business environment and fierce competition. Therefore, transformational leadership guides organizational members to actively take on the risks of exploring innovation and solving the challenges brought about by new technologies with a vision for the future; Leaders support employees to propose and share diverse perspectives, improve task conflicts among organizational members, and facilitate diversity in technology, solutions, and creativity, thereby promoting and popularizing digital exploratory learning. The high risks and uncertainties faced by digital exploratory learning can to some extent lead to a lack of confidence in the future among members of the organization and a decrease in work enthusiasm. However, personalized care from transformational leaders can greatly enhance employee work enthusiasm and confidence by providing technical platforms and guarantees, which helps to improve employee digital exploratory learning behavior. Based on the above analysis, the following assumption can be proposed:

H4: Transformational leadership has a positive impact on digital exploratory learning.

6. Digital Explorative Learning and Digital-Enabled Task Performance

Digital exploratory learning encourages employees to explore unknown fields and try new methods to solve problems using digital technology. This learning approach promotes the development of creative thinking (Benitez et al., 2018), enabling individuals to solve challenges in tasks more flexibly and creatively, and improving their problem-solving abilities. The process of digital exploratory learning can help employees accumulate broader and deeper digital knowledge, and this diverse accumulation of digital knowledge and skills helps to cope with the diversity and complexity of digital tasks, improve individual application abilities in different fields (Vial, 2019), and thus enhance employee digital-enabled task performance. Digital exploratory learning can cultivate employees' flexibility and adaptability when using digital technology to solve new problems which helps employees better adjust strategies and methods when facing changes and uncertainties in standard tasks, and improve task performance. Digital exploratory learning emphasizes individuals' autonomous and self driven learning of digital technology, which cultivates their self-management abilities and enables them to plan and execute tasks more effectively, improving work efficiency and performance. In summary, digital exploratory learning has a positive impact on digital task performance by enhancing problem-solving abilities, expanding knowledge and skills, strengthening adaptability, and promoting self-directed learning. Individuals using digital exploratory learning in their work can more efficiently complete tasks, cope with complex and ever-changing work requirements, and achieve better digital task performance results. Based on the above analysis, the following assumptions can be proposed:

H5: Digital exploratory learning has a positive impact on employee digital-enabled task performance.

7. Digital Explorative Learning and Digital-Enabled Innovative Performance

The use of digital technology ensures the breadth and speed of knowledge acquisition, and improves the reliability and accuracy of knowledge and information (Tian & Li, 2022). Therefore, digital technology provides an effective means for exploratory learning, improves

the success rate of new choice experiments to a certain extent, and promotes employee digital-enabled innovation performance. Employee digital exploratory learning activities mainly involve enterprise employees using digital technology to explore novel, heterogeneous, and future related knowledge, and developing new products and technologies based on this knowledge. Therefore, employee digital exploratory learning is of great significance for improving personal abilities and enhancing their own value. It is an important means and source for employees to achieve personal digital-enabled innovation performance, and has a positive impact on the future technological development and market competitiveness of enterprises (Eden et al., 2018). In addition, facing the accelerating pace of technological iteration, increasing knowledge update rate, and extremely competitive external environment, constantly trying new technologies and product research and development, changing the original product structure, is the only way for enterprises to develop in the long term. And employees are the source of enterprise innovation. In order to improve the competitive advantage and innovation performance of the enterprise in future technology and market with new technologies and products (Garcia et al., 2003), employees can integrate personal performance goals with enterprise performance goals through digital exploratory learning activities. This integration greatly stimulates employees' work enthusiasm and confidence, thereby improving their digital-enabled innovation performance. Based on the above analysis, the following assumptions can be proposed:

H6: Digital exploratory learning has a positive impact on employee digital-enabled innovation performance.

8.Theoretical Model

Based on the basic viewpoints of transformational leadership theory and organizational learning theory, this study regards transformational leadership behavior as an important source of adjusting business operations in the new context of the digital economy, encourages and helps employees use digital technology to achieve personal performance. At the same time, transformational leadership behavior promotes digital learning among employees through sensitivity to the external environment and influence on subordinates, thus having a certain impact on employee digital performance. In summary, this study constructs a theoretical model, incorporating transformational leadership, employee digital learning, and employee digital-enabled performance to explore the interaction between the three.

Methodology

1. Sample and Data Collection

The questionnaire was designed on the basis of the extant literature and adapted to the context of digital economy. Most of the scales were adopted from the original literature, but many scales were adapted or modified to fit the digital context. A pilot study was conducted first before the final data collection to improve the quality of the instrument. A total of 132 employees from 4 companies in China were invited to participate, and 103 completed questionnaires were received. Data analysis suggested that most of the items loaded high on their intended constructs.

Considering the close relationship between regional economic development level and the degree of digital development of enterprises, this study selected employees from 14 enterprises in 6 cities (Jinhua, Quanzhou, Yantai, Zhengzhou, Wuhan, and Chengdu) from the second tier of 6 provinces (Zhejiang, Fujian, Shandong, Henan, Hubei, and Sichuan) based on the GDP of each province in China in 2023 as the research subjects. The research subjects need to meet the conditions for using digital technology to complete work task processes in daily work. This study collected data through on-site distribution of paper questionnaires, with a total of 400 questionnaires distributed and 385 questionnaires ultimately collected.

2. Common Method Bias

Harman's one factor test was conducted to check the impact of bias. Based on the results of the principle component analysis (PCA), eleven components loaded for 75.836% of the total variance, and the first component loaded for less than 40% of the variance. Therefore, this study does not suffer from common method bias (Podsakoff et al. 2003).

3. Measures

To test the hypotheses, a survey-based approach was used in this research. The structured survey questionnaire was created based on a previous literature review and developed during different sessions with expert researchers. Each construct consists of 3 items, and all items were measured on a seven-point Likert scale. Table 1 shows the measurement instruments, including constructs, sub constructs, their references and Cronbach's α.

3.1 Independent Variable

In this study, transformational leadership has been identified as independent variable and assessed by MLQ-5X form in five dimensions, including idealised attribute, idealised behaviour, inspirational motivation, intellectual stimulation, and interpersonal consideration (Bass & Avolio, 2000).

3.2 Mediating Variable

Digital learning is the mediating variable, which is measured by 2 sub constructs, digital exploitative learning and digital explorative learning. This study contextualized the items of exploitative leaning and explorative learning (March, 1991) with reference to the use of data analytics enabled by smart technologies.

3.3 Dependent Variable

Digital-enabled performance is the dependent variable in this research and defined as digital-enabled task performance and digital-enabled innovative performance, each measured by three items (Shao et al. 2022).

3.4 Control Variables

Eight control variables, including employee age, gender, education level, years of work experience, and company size, location, nature, years of operation, were defined in this study (Shao et al. 2022).

Table 1. Measurement instruments

Construct	Sub construct	Reference	Cronbach's α
Transformational Leadership (TL)	Idealized Attribute	Bass & Avolio, (2000)	0.825
	Idealized Behavior		0.864
	Inspirational Motivation		0.846
	Intellectual Stimulation		0.839
	Interpersonal Consideration		0.857
Digital Learning	Digital Exploitative Learning (DIL)	March(1991); Seo et al.(2015)	0.820
	Digital Explorative Learning (DRL)		0.820
Digital-Enabled Performance	Digital-Enabled Task Performance (DTP)	Zhang(2017); Ogbanufe and	0.809
	Digital-Enabled Innovative Performance (DIP)	Gerhart(2020);Shao et al. 2022	0.833

4. Results

The reliability and validity of the data were assessed before testing the hypotheses. Cronbach's alpha (α) was used to test the reliability of the scales. As shown in Table 1, all the values are greater than 0.7, which confirmed an acceptable level of reliability for all constructs (Hair et al., 1998). Additionally cross loading is not an issue in this study due to the high loadings on each particular factor. As a result, discriminant validity is supported in this study.

4.1 Correlation and Multicollinearity

Correlation analysis was used to check the validity of the research as shown in Table 2. A high correlation between independent variables might cause problems related to multicollinearity. Thus, multicollinearity was checked by the variance inflation factors (VIF) and the tolerance value. Multicollinearity is not a problem if the recommended value for VIF is 5 with the tolerance greater than 0.2 (Kleinbaum, et al., 1988). In this study, the range of VIF is 1.179–1.379 with a tolerance of 0.725–0.848, both of which are in the suggested ranges. Consequently, in this case multicollinearity is not a problem. All these analyses are perquisites for testing hypotheses and supporting the reliability and validity of the research. As a result, the testing of the hypotheses can continue due to the supportive results provided.

Table 2. Correlation matrix

	TL	DIL	DRL	DTP	DIP
TL	1				
DIL	0.353**	1			
DRL	0.426**	0.277**	1		
DTP	0.483**	0.362**	0.382**	1	
DIP	0.407**	0.386**	0.388**	0.255**	1

**p<.01, *p<.05

4.2 Regression Analysis

This research concentrated on mediation analysis to provide a deep understanding about the relationships between transformational leadership and employee digital-enabled performance. Three steps were conducted to analyze the hypotheses. First, regression analysis was employed between dependent variables and independent variables. Next, the effect of independent variables on the mediator was checked, and finally, regression analysis was conducted with all the variables (Baron & Kenny, 1986). Based on previous research, the model has full mediation if there was a significant mediated effect but no significant direct effect between dependent variables and indirect variables. Table 3 shows the result of mediation analysis for transformational leadership and employee digital-enabled performance. In all these regressions, employee age, gender, education level, years of work experience, and company size, location, nature, years of operation were applied as control variables. The results of the seven models are presented as follows.

Model 1 analyses the relationship between transformational leadership and employee digital-enabled performance. As mentioned earlier, the direct impact of transformational leadership must first be tested on employee digital-enabled performance. Therefore, the results in Table 3 show significant direct effect between transformational leadership and employee digital-enabled performance.

Model 2 analyses the relationship between transformational leadership and digital exploitative learning. As noted earlier, the second step is to check the relationship between transformational leadership (independent variables) and digital exploitative learning (mediator). As shown in Table 3, the direct effect of transformational leadership ($\beta = 0.451$; $P < 0.01$) on digital exploitative learning is significant.

Model 3 analyses the relationship between transformational leadership, digital exploitative learning and digital-enabled task performance. Based on the abovementioned, the last step is to check the relationships between transformational leadership (independent variables), digital exploitative learning (mediator) and digital-enabled task performance (dependent variable). The results revealed that the mediation effect of digital exploitative learning is significant between transformational leadership and digital-enabled task performance ($\beta = 0.158$; $P < 0.01$). Thus, it can be concluded that transformational leadership influence digital-enabled task performance through their effect on digital exploitative learning.

Model 4 analyses the relationship between transformational leadership, digital exploitative learning and digital-enabled innovative performance. Based on the abovementioned, the last step is to check the relationships between transformational leadership (independent variables), digital exploitative learning (mediator) and digital-enabled innovative performance (dependent variable). The results revealed that the mediation effect of digital exploitative learning is significant between transformational leadership and digital-enabled innovative performance ($\beta = 0.203$; $P < 0.01$). Thus, it can be concluded that transformational leadership influence digital-enabled innovative performance through their effect on digital exploitative learning.

Model 5 analyses the relationship between transformational leadership and digital explorative learning. As noted earlier, the second step is to check the relationship between transformational leadership (independent variables) and digital explorative learning (mediator). As shown in Table 3, the direct effect of transformational leadership ($\beta = 0.583$; $P < 0.01$) on digital explorative learning is significant.

Model 6 analyses the relationship between transformational leadership, digital explorative learning and digital-enabled task performance. Based on the abovementioned, the last step is to check the relationships between transformational leadership (independent variables), digital explorative learning (mediator) and digital-enabled task performance (dependent variable). The results revealed that the mediation effect of digital explorative learning is significant between transformational leadership and digital-enabled task performance ($\beta = 0.177$; $P < 0.01$). Thus, it can be concluded that transformational leadership influence digital-enabled task performance through their effect on digital explorative learning.

Model 7 analyses the relationship between transformational leadership, digital explorative learning and digital-enabled innovative performance. Based on the abovementioned, the last step is to check the relationships between transformational leadership (independent variables), digital explorative learning (mediator) and digital-enabled innovative performance (dependent variable). The results revealed that the mediation effect of digital explorative learning is significant between transformational leadership and digital-enabled innovative performance ($\beta = 0.198$; $P < 0.01$). Thus, it can be concluded that transformational leadership influence digital-enabled innovative performance through their effect on digital explorative learning.

Table 3. Regression analysis results

Variables	B	t	R^2	Adj. R^2	F
M1 *Dependent: employee digital-enabled performance*					
Age	0.12	1.267			
Gender	-0.092	-1.839			
Educational level	0.418**	3.714			
Years of work experience	0.195**	3.469			
Company size	-0.024	-0.536			
Years of operation	-0.031	-0.456			
Company nature	-0.057	-1.059			
Company location	-0.170**	-2.987			
Transformational leadership	0.525**	11.171	0.439	0.423	27.846**
M2 *Dependent: digital exploitative learning*					
Age	0.259	1.748			
Gender	-0.064	-0.809			
Educational level	0.114	0.647			
Years of work experience	0.172	1.952			
Company size	-0.028	-0.396			
Years of operation	-0.038	-0.363			
Company nature	-0.005	-0.057			
Company location	0.042	0.467			

Transformational leadership	0.451**	6.117	0.158	0.134	6.676**
M3 *Dependent: digital-enabled task performance*					
Age	0.058	0.444			
Gender	-0.049	-0.715			
Educational level	0.221	1.43			
Years of work experience	0.051	0.661			
Company size	0.023	0.381			
Years of operation	0.016	0.178			
Company nature	0.022	0.298			
Company location	-0.125	-1.615			
Transformational leadership	0.423**	5.876			
Digital exploitative learning	0.158**	3.402	0.342	0.32	15.338**
M4 *Dependent: digital-enabled innovative performance*					
Age	0.069	0.534			
Gender	-0.085	-1.24			
Educational level	0.457**	2.964			
Years of work experience	0.264**	3.421			
Variables	B	t	R^2	Adj. R^2	F
Company size	-0.037	-0.6			
Years of operation	-0.066	-0.721			
Company nature	-0.08	-1.093			
Company location	-0.214**	-2.77			
Transformational leadership	0.245**	3.409			
Digital exploitative learning	0.203**	4.368	0.358	0.336	16.439**
M5 *Dependent: digital explorative learning*					
Age	0.052	0.364			
Gender	-0.074	-0.98			
Educational level	0.314	1.86			
Years of work experience	0.037	0.433			
Company size	-0.066	-0.98			
Years of operation	0.006	0.059			
Company nature	-0.143	-1.779			
Company location	-0.039	-0.463			
Transformational leadership	0.583**	8.286	0.201	0.179	8.956**
M6 *Dependent: digital-enabled task performance*					
Age	0.058	0.444			
Gender	-0.049	-0.715			
Educational level	0.221	1.43			
Years of work experience	0.051	0.661			
Company size	0.023	0.381			
Years of operation	0.016	0.178			
Company nature	0.022	0.298			
Company location	-0.125	-1.615			
Transformational leadership	0.423**	5.876			
Digital explorative learning	0.177**	3.626	0.342	0.32	15.338**
M7 *Dependent: digital-enabled innovative performance*					
Age	0.069	0.534			
Gender	-0.085	-1.24			
Educational level	0.457**	2.964			
Years of work experience	0.264**	3.421			
Company size	-0.037	-0.6			

Years of operation	-0.066	-0.721			
Company nature	-0.08	-1.093			
Company location	-0.214**	-2.77			
Transformational leadership	0.245**	3.409			
Digital explorative learning	0.198**	4.072	0.358	0.336	16.439**

**p<.01, *p<.05

Therefore, the results support all the six hypotheses, which is that digital learning indirectly mediate the relationship between transformational leadership and digital-enabled performance. As shown in Table 3, company location has a negative significant effect on digital-enabled innovative performance, but educational level and years of operation have a positive significant effect on the mediating model.

Conclusion and Suggestion

1. Conclusion

This paper, based on transformational leadership theory and organizational learning theory, constructed a theoretical model of the influencing factors of employee digital-enabled performance, including the mediation effect model of employee digital learning. Questionnaire survey is conducted and regression analysis and Bootstrap-analysis are used. The research results show that: (1) Transformational leadership behavior positively affects the digital-enabled performance of employees; (2) Transformational leadership behavior affects employee digital-enabled performance through employee digital learning.

2. Managerial Implications

The research results indicate that transformational leadership style has a significant positive impact on employee digital-enabled performance. Therefore, this article believes that in the process of organizational digital transformation, especially in the early stages of organizational transformation, leaders should actively adopt transformational leadership strategies, cultivate their digital skills and beliefs, construct the ideal or vision of the organization's future digitalization, and stimulate employees' innovation motivation from the depths of their hearts (Wang et al., 2023) , pay attention to building a good organizational innovation atmosphere, encourage employees to be brave in innovation and not afraid of failure, and drive employees to actively learn and improve their work skills and abilities.

Transformational leadership behavior can promote employee digital exploratory learning and digital exploitative learning, thereby promoting the improvement of employee digital-enabled performance. Therefore, in the digital context, enterprises should stay consistent with external environmental changes and choose appropriate digital learning models for employees based on their own technological development stage. Transformational leadership behavior encourages employees to actively utilize digital technology to acquire homogeneous and heterogeneous knowledge, promoting digital exploitative and exploratory learning. At the same time, personalized support is provided in the digital learning process of employees, promoting their continuous improvement of personal abilities and innovative value.

3. Limitations and Further Research

Reflecting on the limitations of this research will provide several opportunities for further research in the future. First, the data was collected from employees only from14 companies in China, which might limit this study’s generalizability since the data is from one country. Second, the data collected in this study can only reflect the characteristics of variables at a certain point in time, and there is no long-term tracking of sample enterprises to collect longitudinal evidence of their digital transformation. Third, as an emerging research topic in recent years, there is still a lack of comparative analysis based on large samples of different types of enterprises and enterprises in different regions, such as classifying and exploring the digital transformation and digital performance realization of manufacturing and IT enterprises, large enterprises, and small and medium-sized startups. Building on this, further research could

further compare the digital transformation processes of enterprises in different regions, industries, scales, and ownership types through empirical methods, in order to evaluate commonalities and differences, and provide empirical guidance for successful digital transformation of different types of enterprises.

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