

A Study on the Influence of Digital Leadership on Employees' Deviant Innovations

Changpeng Lu^{1,a,*}

¹School of Business, Guangxi University, Nanning, 530004, China

^a1377047000@qq.com

*Corresponding author

Abstract: Deviant innovation behavior by employees is a significant contributor to innovative activities within firms, and successful deviant innovation has a positive effect on firm innovation and performance. Digital leadership, a new type of leadership that has emerged due to the disruptive impact and challenges of digital technology in companies, requires further investigation regarding its influence on individual employees. Based on social cognitive theory and triadic reciprocal determinism, we constructed a moderated mediation model. In this model, employee role breadth self-efficacy served as the mediating variable and error management climate as the moderating variable. The analysis results of 201 employees indicate that: digital leadership has a positive influence on employees' role-width self-efficacy and their deviant innovation; employees' role-width self-efficacy mediates the relationship between digital leadership and their deviant innovation; the error management climate not only positively moderates the role of digital leadership in employees' role-width self-efficacy, but also positively moderates the role of employees' role-width self-efficacy in the relationship between digital leadership and employee deviant innovation. The above findings reveal the relationship between digital leadership and employee deviant innovation, contributing to research on digital leadership theory and the factors that influence deviant innovation.

Keywords: digital leadership; deviant innovations; role breadth self-efficacy; error management climate

1. Introduction

In the era of the digital economy, digital technology's disruptive nature has led to significant changes in the form and content of work. Enterprises are being forced to reconsider their original mode of operation and revamp it to tackle the challenges of digitization in an ever more volatile, complex, uncertain, and ambiguous environment. Globally competitive corporations, including Huawei, Apple, and Google, understand the significance of digitization in obtaining a competitive advantage in innovation, and they have made a firm commitment to digitalize their businesses. However, based on the overall progress of digitalization, enterprise digital transformation has a success rate of less than 30%. Most enterprises encounter challenges during the digital transformation process, emphasizing the importance of support from middle and senior management and their digital leadership skills for successful implementation. The digital economy has brought significant changes to the nature and performance of leadership among business managers. This includes providing immediate access to information, making decisions based on intelligent analysis of big data, and developing new types of leadership positions. To remain competitive in this environment, companies must cultivate a new style of leadership known as digital leadership, which is dynamic, continuously learning, and responsive to change^[1]. Although the significance of digital leadership in digital transformation and innovation is widely acknowledged, research on digital leadership remains in its preliminary stage. Presently, research predominantly concentrates on the organizational level, affirming the correlation between digital leadership and innovation management, strategic alliances, and innovation performance, with limited investigation into the effects of digital leadership on individual employees. On the other hand, in order to achieve digital transformation, companies must encourage their employees to participate actively in innovation activities^[2]. However, during this turbulent period of transformation, limited resources and environmental risks constrain innovative ideas and behaviors of employees. To reduce resistance to innovation, more employees now opt for deviant innovation in pursuit of personal or organizational benefits.

Employees engage in deviant innovation behavior to improve organizational effectiveness. However,

such behavior is typically not authorized by the organization, which prevents individuals from obtaining the necessary organizational resources and support for innovation through legal means. As a result, individuals are forced to accept the uncertainty of input and the high risk of results. Compared to planned innovation behavior, deviant innovation behavior with a high degree of employee innovation consciousness tends to break the organization's planned innovation rhythm. Employees firmly believe that innovative behavior can bring benefits to the organization by carrying out unplanned innovation behavior, which has become an essential way to break the core rigidity of the organization to achieve unintended and even disruptive innovation. Employee deviant innovation is a significant contributor to organizational innovation. However, compared to general innovation behavior, it demands stronger endogenous motivation and higher individual and organizational resource supply.

Previous studies have demonstrated that leadership style significantly impacts employees' deviant innovation^[3]. Therefore, it is worth exploring if the novel digital leadership style has any effect on the said behavior. Digital leadership endows teams with higher responsibility and greater autonomy, ultimately resulting in increased employee motivation^[4]. Does digital leadership support improve employees' confidence in their work and motivate them to take on additional responsibilities outside their job requirements, leading to greater confidence when approaching uncertain outcomes in proactive innovation? Can a favorable error management climate, which encourages exploration and experimentation, accommodates work errors from employees, and provides psychological safety support, motivate employees to implement deviant innovations with more bravery?

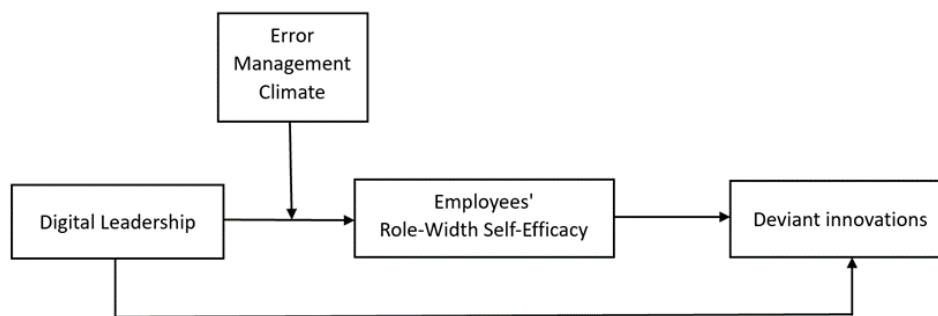


Figure 1. Hypothesized model

In summary, this study combines social cognitive theory and Bandura's reciprocal determinism, introducing role breadth self-efficacy as a mediator and error management climate as a moderator to investigate the relationship between digital leadership and employee deviant innovation. The goal of this research is to enhance relevant theories and provide practical references for managing digital transformation in enterprises. In the following sections, we review theoretical foundations for our model and develop specific hypotheses. We then present findings. Figure 1 summarizes our model.

2. Theory and Hypotheses

2.1 Digital Leadership and Employee Deviant Innovation

Digital leadership (DL) is a leadership style where leaders utilize digital thinking to establish precise and purposeful objectives for the digital transformation of an organization, and facilitate employee commitment to digital transformation by means of inclusive decision-making and empowerment. This approach requires leaders to possess certain qualities such as a transformational vision, a forward-looking perspective, digital literacy, and adaptability^[1]. Digital Leadership: Studies confirm that digital leadership positively impacts organizational performance and employee innovation behavior^[5].

Deviant innovation (DI) is an out-of-role behavior that is implemented by an employee without the permission of the organization or the leader, individually and autonomously, for the purpose of improving organizational performance^[6]. Deviant innovation is an autonomous and pro-organizational behavior which aligns with the behavioral manifestations of digital leadership preferences. The transformational vision of digital leaders fosters a supportive atmosphere for innovation, encourages employees to adopt new ideas and methods to address problems during organizational change and transformation, and emphasizes the cultivation and enhancement of their digital literacy^[7]. The favorable qualities of digital leaders, including perception and vision, promote inclusivity of employee innovation. Digital leaders

relinquish authority during organizational change, granting workers autonomy^[8]. This mitigates the psychological stress accompanying innovative activities and fosters a sense of security, encouraging employees to take innovative risks. For these reasons, we propose:

Hypothesis 1: Digital leadership has a positive influence on employees' deviant innovation behavior.

2.2 The mediating role of role breadth self-efficacy

Role breadth self-efficacy (RBSE) refers to an individual's perception of their ability to actively pursue and take on tasks beyond the immediate scope of their job responsibilities. Studies have demonstrated that leadership style, as a personal characteristic, can have an impact on employees' perceived level of role breadth self-efficacy^[9]. Digital leaders with a forward-thinking mindset anticipate that their employees will challenge convention and exhibit increasing digital competence and innovative behaviors as part of organizational change initiatives aimed at promoting digitalization within the company^[10]. The emergence of new opportunities and resources during this process not only elevates employee motivation but also enhances their sense of self-control^[11], ultimately inspiring them to explore more work beyond the scope of their traditional roles. Digital leadership emphasizes integrating leaders, employees, and organizations in digital transformation, with leaders sharing power downwards. Empowerment enables employees to trust and gain a higher degree of work autonomy and flexibility. Increased emotional and cognitive resources enhance motivation^[8] and role-breadth self-efficacy.

Social cognitive theory asserts that an individual's sense of efficacy serves as a crucial motivator for agency exertion. Moreover, individuals with elevated self-efficacy tend to have optimistic psychological beliefs which drive proactive response behaviors. During the digital transformation process in enterprises, employees with high self-efficacy related to their job roles are more confident in their capability to generate innovative ideas and add value to the organization by creatively resolving work-related challenges^[12]. Second, employees with high role breadth efficacy are more inclined to establish a sense of corporate responsibility and mission during the digital transformation process, leading to an increased likelihood of initiating extra-role behaviors that benefit the organization. Moreover, deviant innovation behavior among employees constitutes proactive extra-role tasks that result in benefits for the organization. Meanwhile, employees possessing high levels of role breadth self-efficacy exhibit a mindset imbued with confidence and persistence. Consequently, when confronted with obstacles impeding innovative ideas and activities, they will approach them proactively with a positive attitude^[13] and are more likely to engage in deviant innovation to accomplish creative tasks. Previous studies have also established the positive influence of role breadth self-efficacy on employees' deviant innovation^[13]. In summary, digital leaders can affect their employees' deviant behavior towards innovation through the employees' self-efficacy regarding their role width. Taken together, we propose:

Hypothesis 2: Digital leadership has a positive influence on employee role breadth self-efficacy.

Hypothesis 3: Employee role breadth self-efficacy moderates the association between digital leadership and employee deviant innovation behavior.

2.3 The moderating role of error management climate

Error management climate (EMC) relates to the attitudes of organizations and their leaders toward employee errors^[14]. According to the Bandura's reciprocal determinism, organizational culture impacts employee behavior and influences the achievement of organizational goals. As innovation outcomes are uncertain, the attitudes of organizational and leadership towards innovation failure can affect employee motivation to innovate. Digital leadership is characterized by a transformational vision, where the leadership goal is to use digital technologies to transform the business to adapt to the digital age. Digital leaders motivate their employees to innovate and actively take part in digital transformation^[1]. Consequently, within a high error management setting, digital leaders increasingly incorporate their employees, who have stronger role identity perceptions, heightened role breadth self-efficacy perceptions, and augmented exploratory motivation and error-learning opportunities. As a result, employees tend to finish more work. Conversely, when error management is poor, employees become defensive even in the face of change and innovation promoted by digital leaders, because the organization has a zero-tolerance policy towards errors.

Research has indicated a positive correlation between error management climate and employee deviant and innovative behavior^[15]. A high error management climate signals encouragement for exploration of new areas^[15] and activates positive psychology in employees. When strengthened,

employees' role breadth self-efficacy can increase their willingness to innovate, be more proactive in implementing creative ideas, and more likely to engage in deviant innovation. In a high error management climate, the positive attributes of digital leaders are more likely to activate employees' role-width self-efficacy, thereby increasing their courage to engage in out-of-role behaviors and implement off-track innovations. On the other hand, in a low-error management climate, even if the digital leader fosters innovation, employees are more prone to avoidance, which weakens their self-efficacy in a broad range of roles and leads to the abandonment of deviant innovation. Upon these premises and related evidence, we contend:

Hypothesis 4: Error management climate positively moderates the relationship between digital leadership and employee role breadth self-efficacy.

Hypothesis 5: Error management climate positively moderates the mediating role of employee role breadth self-efficacy between digital leadership and employee deviant innovation.

3. Research design

3.1 Data

In this research, a questionnaire survey was utilized to collect sample data using the "Questionnaire Star" platform. A total of 240 questionnaires were distributed, of which 201 were valid (an effective response rate of 83.75%). Regarding the valid responses, the following key demographic distributions were found: 34.83% of employees were male and 65.17% were female; 8.46% of employees are under the age of 18, 74.12% are between the ages of 18 and 30, 12.94% are between the ages of 30 and 45, and 4.48% are over the age of 45; 13.93% of employees had a junior college degree, 73.63% had a Bachelor's degree and 12.44% held a master's degree; 12.43% of employees have been working in their current organization for less than a year, 65.67% have been working in their current organization for 1-5 years, 7.96% have been working in their current organization for 5-10 years, and 13.94% have been working in their current organization for more than 10 years.

3.2 Variables

This paper draws on mature scales at home and abroad, and without affecting the key content of the scale, the items and wording of the scale were modified and adjusted in conjunction with the research topic of this paper. Except for the control variables, the question items of all variables were measured using the Likert 5-point scale. The description of the variables is as follows: digital leadership utilized a 6-item scale developed by Zeike et al. (2019)^[6], the reliability of the scale is 0.910; deviant innovations utilized a 5-item scale developed by Criscuolo et al. (2014)^[6], the reliability of the scale is 0.926; role breadth self-efficacy utilized a 7-item scale developed by Parker et al. (1998)^[9], the reliability of the scale is 0.895; error management climate utilized a 16-item scale developed by Cigularov (2010)^[17], the reliability of the scale is 0.930.

4. Analysis and results

4.1 Common method bias test and confirmatory factor analysis

Harman's one-way analysis of variance (ANOVA) was utilized to test for common method bias in this study. A factor analysis was conducted on all the question items related to digital leadership, employee role breadth self-efficacy, error management climate, and employee deviant innovation. The results showed that the first factor explained variance of 40.778%, which is less than 50%. Therefore, there is no significant common method bias problem in this study.

Validated factor analysis was conducted using Amos software. The measurement model had a χ^2/df of 1.820, with GFI=0.911, CFI=0.945, and RMSEA=0.060, and each indicator exceeded the minimum acceptable value. The model fit was excellent and there was good discriminant validity among the variables. The CR value of digital leadership, employee role width self-efficacy, error management climate, and employee deviant innovation is 0.878, 0.901, 0.939, and 0.929, respectively - all greater than 0.7. Additionally, the AVE values of digital leadership, employee role width self-efficacy, error management climate, and employee deviant innovation are 0.552, 0.568, 0.513, and 0.723, which are all greater than 0.5. This shows that each variable has strong internal consistency and superior convergent

validity.

4.2 Descriptive statistical analysis

The results of the correlation analysis of the research are shown in table 1, in which the mean value, standard deviation, and correlation coefficient of the variables are given. Digital leadership has a significant positive correlation with deviant innovation ($r = 0.847, p < 0.01$), and digital leadership has a significant positive correlation with employee role breadth self-efficacy ($r=0.697, p<0.01$). Employee role breadth self-efficacy has a significant positive correlation with employee deviant innovation ($r=0.740, p<0.01$). These results offer preliminary backing for the hypotheses put forth in this paper.

Table 1. Descriptive statistical results for the variables

Variables	Mean	SD	1	2	3	4	5	6	7	8
1.Gender	1.652	0.478	1							
2.Age	2.134	0.614	-0.300**	1						
3.Education	2.015	0.596	-0.034	0.665**	1					
4 .work seniority	1.791	1.306	0.444**	-0.133	-0.015	1				
5.DL	3.570	0.821	0.020	-0.016	-0.046	0.198**	1			
6.RBSE	3.620	0.626	0.172*	0.009	0.033	0.218**	0.697**	1		
7.DI	3.516	0.814	0.064	0.011	-0.057	0.192**	0.847**	0.740**	1	
8.EMC	3.615	0.608	0.134	-0.029	0.088	-0.039	-0.468**	-0.354**	-0.485**	1

Symbol*denotes $p<0.05$,**denotes $p<0.01$.

4.3 Hypothesis testing

The study used multilevel regression to test the research hypotheses. The study used the demographic variables of gender, age, education and years of working experience as control variables. The regression results are shown in Table 2.

First, the direct effect is tested. From model 2, digital leadership has a positive and significant effect on employees' deviant innovation ($\beta=0.834, p<0.01$), which verifies hypothesis 1. From model 5, digital leadership has a positive and significant effect on employees' role breadth self-efficacy ($\beta=0.529, p<0.01$), which verifies hypothesis 2.

Secondly, the mediating effect was tested. In the above, we can know that the direct effect of digital leadership on employee role self-efficacy has been confirmed (Model 5, $\beta=0.529, p<0.01$). On the basis of model 2, model 3 adds the mediating variable employee role width self-efficacy for regression, and the results show that the coefficient of employee role width self-efficacy is 0.380, $p<0.01$, while the coefficient of digital leadership is 0.634, $p<0.01$, but smaller than the coefficient of model 1, 0.834, that is, the effect of digital leadership is reduced by adding the employee role width self-efficacy. decreases. The above data confirms that employee role width self-efficacy plays a partial mediating role between digital leadership and employee deviant innovation, and hypothesis 3 is verified.

Finally, moderating effects were tested. Before regression, the leadership and error management climate was standardized. The first step is to add control variables in the regression model, which is model 4; the second step is to add digital leadership and error management climate on the basis of model 4, which is model 6; and the third step is to add the interaction term between digital leadership and error management climate on the basis of model 6, which is model 7. As can be seen in model 7, the interaction coefficient is 0.131, $p<0.05$, which means that error management climate positively moderates the relationship between digital leadership and the relationship between employees' role breadth self-efficacy, which verified hypothesis 4. In order to test the moderating mediating role of error management climate, Bootstrap method was used for the test, and the results are shown in Table 3. The mediating path effect value of "digital leadership→ employee role width self-efficacy→ employee deviant innovation" for the matching difference between high and low levels of error management climate is 0.589, and the 95% confidence interval is [0.490,0.688], which doesn't include 0, indicating that the error management climate positively regulates the mediating path effect of "digital leadership→ employee role width self-efficacy→ employee deviant innovation". sense of mediation between digital leadership and employee deviant innovation, and Hypothesis 5 is supported.

Table 2. Summary of regression results

Variable	DI			RBSE			
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Constant	3.275***	0.273	-0.174	3.080**	1.178**	3.040**	3.110***
Gender	0.015	0.121	0.038	0.151	0.218	0.230**	0.219*
Age	0.181	0.133	0.117	0.075	0.045	0.038	0.044
Education	-0.198	-0.113	-0.129*	-0.010	0.044	0.053	0.036
Work seniority	0.127**	0.004	0.002	0.084*	0.006	0.006	0.008
DL		0.834**	0.634**		0.529**	0.504**	0.500**
RBSE			0.380**				
EMC						-0.073*	-0.078*
DL*EMC							0.131*
R ²	0.050	0.725	0.766	0.051	0.516	0.520	0.532
Δ R ²	0.030	0.718	0.759	0.022	0.504	0.505	0.515
F	2.557*	102.600***	105.746***	3.050*	41.634***	35.045***	31.343***

Symbol*denotes p<0.05, ** denotes p<0.01, *** denotes p<0.001.

Table 3. Test of moderated mediating effects

Mediating path	EMC	Effect value	SE	95% CI
RBSE	High(+1SD)	0.529	0.062	[0.407,0.651]
RBSE	Low(-1SD)	0.649	0.058	[0.535,0.764]
RBSE	Middle	0.589	0.051	[0.490,0.688]

5. Conclusions and Implications

5.1 Conclusion

Based on Social Cognitive Theory and Bandura's reciprocal determinism, this study analyzes how digital leadership affects employees' deviant innovation behavior. The results verify all five hypotheses, confirming that: (1) Digital leadership has a positive impact on deviant innovation (H1), suggesting that in the period of enterprise transformation, employees are more likely to engage in deviant innovation under digital leadership. This study's conventional format and clear, objective language make its findings useful for academics and practitioners alike. (2) Digital leadership has a positive impact on employees' role breadth self-efficacy (H2), demonstrating that it aids workers in enhancing their insider perception and allowing them to complete extra tasks with greater confidence and autonomy. (3) Employee role breadth self-efficacy acts as a mediator between digital leadership and employee deviant innovation behavior (H3). This suggests that the favorable characteristics that digital leaders possess can provide employees with psychological support and resources to enhance their role breadth self-efficacy, increasing the chances of deviant innovation. (4) Positive moderation of the error management climate had a significant impact. Error management climate moderates the positive impact of employees' self-efficacy in their role breadth on their deviant innovative behavior (H4), indicating that a high error management climate enhances the influence of employees' role breadth on deviant innovative behavior, and vice versa. Error management climate positively moderated the mediating role of employee role breadth self-efficacy between digital leadership and employee deviant innovation (H5). In other words, employee role breadth self-efficacy had a stronger mediating role between digital leadership and employee deviant innovation in high error management climates, and vice versa. This finding suggests that when employees perceive that the organization has a strong error management climate, their self-efficacy in performing tasks beyond their specific role increases, leading to greater levels of deviant innovation.

5.2 Theoretical significance

First, the theory of digital leadership is enriched by its emergence as a leadership style during the era of enterprise digital transformation. The far-reaching significance of digital leadership lies in its exploration of its role and impact on employees and organizations. While previous studies have focused on digital leadership at the organizational level, this study examines the individual level of digital

leadership and its positive effects on the main innovation body, namely employees. This expands the analysis of digital leadership's outcome variables.

Secondly, the text explains and verifies the effect of digital leadership on employees' deviant behavior. Additionally, the text enriches the mechanism of the effect of leadership style on employees' deviant innovation. Leadership style has always been a vital antecedent variable in forecasting employees' deviant innovative behavior. Nonetheless, the linkage between digital leadership, which is a current paradigm shift in leadership style, and employee deviant innovation has not been established. This study investigates the impact of digital leadership on employee deviant innovation and examines how digital leadership positively affects employee deviant innovation through their self-efficacy in expanding their roles.

Finally, the study broadens the understanding of the factors that influence the effect of digital leadership on employee deviant innovation. This study discovered that the level of error management atmosphere impacts the relationship between digital leadership and employees' role breadth self-efficacy. Specifically, when the error management atmosphere is high, digital leadership has a positive effect on employees' role breadth self-efficacy. Additionally, this study unveils the conditions under which digital leadership indirectly influences employees' deviant innovation through their role breadth self-efficacy.

5.3 Practical significance

First, enterprises should actively cultivate digital leaders. In the era of digital economy, data has become a core asset to drive the transformation and development of enterprises, and the profound changes brought by digitalization have led to unprecedented pressure and challenges for managers, and digital leadership has become indispensable in the era of digital economy. Digital leaders are distinguished from traditional leaders by their knowledge, expertise and personal experience in digital transformation. By portraying a transformative vision, proposing appropriate strategic approaches with forward thinking and powerful insights, and leading the internal digitization of the organization with digital literacy, digital leaders have a profound impact on both the organization and the employees. Therefore, in the process of digital transformation, organizations can cultivate digital leaders through the following three aspects: guide existing leaders to face challenges with a positive mindset and shape their own digital leadership; develop different training programs for digital leadership shaping for members of different levels of the organization; develop a reasonable procedure for selecting and examining leaders' digital leadership, and incorporate the organization's and employees' views on digital leadership into the performance appraisal standards leadership into the performance appraisal standard.

Secondly, the enterprise should strengthen the employees' "insider" identity perception, improve the employees' role width cognition, and drive the employees to deviant innovation. Deviant innovation is an important way for employees to obtain innovation autonomy. First of all, digital leaders should give full play to their strong collaborative ability and communication ability, share information and power in the process of enterprise digital transformation, encourage and organize employees to express their opinions on the development of the organization, let employees participate in the specific decision-making process of the enterprise, strengthen the connection between employees and the organization, and strengthen their insider identity perception, in order to improve the employees' role breadth self-efficacy, and then implement the deviant innovation behavior. Secondly, the digital leader encourages employees to participate in the specific decision-making process of the organization. Second, the digital leadership in encouraging employees to break the routine, deviant innovation, expect employees to bring unexpected performance to the organization at the same time, for the staff's daily work and innovation attempts to give timely affirmation and help, and through the increase of training to improve efficiency and digital literacy to enhance the competence of the staff, the development of the staff's potential, in order to activate the staff's role breadth of self-efficacy, to promote the deviant of the innovation.

Finally, enterprises should create a good error management atmosphere. Deviant innovation is a kind of unknown result innovation, with risk. When errors occur, the organization and digital leaders should not just punish, but communicate to employees in a timely manner, convey the concept of "failure is an opportunity to learn and grow", and encourage employees to face failure. Organizational and digital leaders can make use of the error opportunities, such as through the implementation of failure experience sharing sessions and other activities to enhance the psychological security of the employees to cross the track of innovation, from the actual action to let employees feel the positive error management atmosphere. At the same time, the organization and digital leaders can hold regular meetings on workflow and other aspects of the source of inspiration for innovation, encourage employees to try to innovate, and create a positive error management atmosphere for innovative activities. In addition, digital leaders

should raise the awareness of the important role of employee deviant innovation in promoting the digital transformation of the enterprise, and correctly and objectively guide employees in the face of deviant innovation behavior.

References

- [1] KANE G C, ANH N, PHILLIPS J C, and GARTH A. *How digital leadership is(n't) different*[J]. *MIT Sloan Manage*, 2019, 60(3): 34-39.
- [2] Yu Shujun, Qiao Jinjie. *Research on the influence of employees' sense of overqualification on deviant innovation behavior in the context of digital transformation*[J]. *Technology and Economy*, 2023,36(04):71-75.
- [3] Deng Yanfang. *A review and outlook of employee deviant innovation research*[J]. *Leadership Science*,2019(12):61-64.
- [4] ERHAN T, UZUNBACAK H H, AYDIN E. *From conventional to digital leadership: exploring digitalization of leadership and innovative work behavior*[J].*Management Research Review*, 2022, 45(11): 1524–1543.
- [5] MOHAMED D S M. *Employee performance as affected by the digital training, the digital leadership, and subjective wellbeing during COVID-19*[J]. *Journal of School Psychology*, 2022, 6(6):540–553.
- [6] CRISCUOLO P, SALTER A, WAL A L J T. *Going underground: Bootlegging and individual innovative performance*[J]. *Organization Science*,2014, 25(5):1287-1305.
- [7] OBERBER B, ERKOLLAR A. *Leadership4.0: digital leaders in the age of industry4.0*[J]. *International Journal of Organizational Leadership*,2018,33(5):1-9.
- [8] GIERLICH-LOAS M, HESS T, NEUBURGER R, et al. *More self-organization, more control—or even both? Inverse transparency as a digital leadership concept*[J]. *Business Research*, 2020, 13(3):1-27.
- [9] PARKER S K. *Enhancing role breadth self-efficacy: the roles of job enrichment and other organizational interventions*[J].*The Journal of applied psychology*, 1998, 83(6): 835-852.
- [10] GOZMAN D, WILLCOCKS L. *The emerging Cloud Dilemma: Balancing innovation with cross-border privacy and outsourcing regulations*[J].*Journal of Business Research*, 2019,97(5):235-256.
- [11] SCHAUFELI, WILMA B. *Applying the job demands-resources model: A 'how to' guide to measuring and tackling work engagement and burnout*[J].*Organizational Dynamics*, 2017, 46(2):120-132.
- [12] LEE H W, PAR J, KIM S, et al. *Effects of human resource management systems on employee proactivity and group innovation*[J].*Journal of Management*, 2019, 45 (2) : 819-846.
- [13] Gao Zhonghua, Yuan Kangkang. *Review and prospect of role breadth self-efficacy*[J]. *Management Modernization*,2019,39(05):105-109.
- [14] YU Haiyun, SUN Yuji. *How error management climate inspires employees to transgress innovation - a test of a two-mediation model*[J]. *Operation and Management*,2022(11):98-104.
- [15] Jian Jinan, Kong Xiangxue, Wang Shenyue. *Research on the influence of error management atmosphere on innovation behavior of new generation employees*[J]. *Research Management*, 2020,41(09):238-246.
- [16] ZEIKES, BRADBURY K, LINDERT L, et al. *Digital leadership skills and associations with psychological wellbeing*[J].*International Journal of Environmental Research and Public Health*, 2019, 16(14):2628.
- [17] CIGULAROV K P, CHEN P Y, ROSECRANCE J. *The effects of error management climate and safety communication on safety: a multi-level study*[J].*Accident Analysis and Prevention*,2010,42(5):1498-1506.