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Structural Equation Modelling: How Job Satisfaction And Deviant Behavior Shape Employee Performance

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Abstract

Leadership and digitalization have emerged as central factors influencing performance, yet prior research offers mixed findings. This study examines the influence of transformational leadership (TL) and digitalization (DT) on employee performance (EP), with deviant behavior (DB) and job satisfaction (JS) serving as mediating variables. A quantitative research design was applied, using survey data collected from 100 employees of the state electricity company in Indonesia. Structural equation modeling with partial least squares (SEM-PLS) was employed to analyze direct and indirect relationships. The findings demonstrate that TL and DT significantly improve EP. JS plays a strong mediating role, enhancing the positive effects of TL and DT on EP. Conversely, DB shows a negative mediating role, reflecting the risks associated with poor leadership practices and digital overload.

Keywords: *transformational leadership, digitalization, deviant behavior, job satisfaction, performance.*

Introduction

Employee performance has long been recognized as a cornerstone for achieving organizational effectiveness and competitiveness (Budiyanto & Mochklas, 2020). In the contemporary era of Society 5.0, organizations face increasingly dynamic, unpredictable, and technology-driven environments. These conditions require companies to adapt rapidly while optimizing their human resource management practices. Employees represent not only a valuable organizational asset but also the primary driver of innovation and service excellence. Hence, maintaining and improving performance has become an imperative for organizations seeking sustainable success.

In Indonesia, the state electricity company plays a vital role in ensuring electricity supply for both households and businesses. Electricity is a fundamental necessity, and its availability depends heavily on the reliability and performance of this organization's workforce. Data from one of its regional service units between 2022 and 2024 demonstrate a positive trend in employee performance, highlighting the company's ability to sustain efficiency and service quality. However, such achievements must be continuously maintained and strengthened through innovative strategies, particularly in leadership approaches and digital transformation.

Leadership has long been viewed as a decisive factor influencing employee outcomes. Transformational leadership, in particular, has received substantial scholarly attention since it emphasizes inspiring, empowering, and intellectually stimulating employees (Bass, 1985). Transformational leaders not only guide employees toward organizational goals but also foster intrinsic motivation, individual growth, and emotional commitment to the organization. Empirical studies have consistently demonstrated that transformational leadership enhances employee performance through increased job satisfaction, motivation, and organizational commitment (Lutfi & Siswanto, 2018; Sugianti & Mujiati, 2022). However, the literature also presents contrasting findings. Chen et al. (2018), for instance, observed that transformational leadership may produce negative outcomes when leaders impose overly idealistic visions or unrealistic expectations. Under such conditions, employees may experience stress, fatigue, and diminished alignment between personal capacities and organizational

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demands, ultimately reducing performance. These inconsistencies suggest the need for further exploration of transformational leadership in diverse organizational contexts.

Alongside leadership, digitalization has emerged as a key determinant of organizational effectiveness. The Technology Acceptance Model (TAM) developed by Davis (1989) posits that technology adoption is influenced by two primary factors: perceived ease of use and perceived usefulness. When employees perceive technology as both beneficial and user-friendly, they are more likely to adopt it, leading to higher efficiency and improved performance. In practice, digital transformation facilitates process integration, accelerates information exchange, and enhances administrative effectiveness. Empirical evidence indicates that digitalization not only streamlines workflows but also increases employee productivity when supported by proper training and organizational readiness (Krismadhita & Muna, 2024; Widihartono & Ahmadi, 2024). Nonetheless, digital transformation is not without risks. Abdulkareem et al. (2024) found that digital overload—excessive demands related to technology use—can reduce autonomy, erode job satisfaction, and negatively affect performance. These findings highlight that digitalization may act as a double-edged sword, with both enabling and constraining effects on employees.

Beyond leadership and digitalization, employee performance is also shaped by behavioral and attitudinal factors. Deviant behavior, defined as actions that violate organizational norms, can significantly undermine trust, integrity, and productivity. Research shows that workplace deviance can manifest as both organizational deviance (e.g., misuse of resources, absenteeism) and interpersonal deviance (e.g., hostility, harassment), both of which have negative effects on employee outcomes (Khan et al., 2022; Tangirala & Alge, 2023). Although digitalization enhances efficiency, it may simultaneously provide opportunities for misconduct, such as misuse of company data or unethical decision-making (Putri & Riana, 2022). Such behaviors can directly harm organizational performance and therefore warrant attention as a mediating factor in examining the relationship between leadership, digitalization, and employee outcomes.

Another crucial factor is job satisfaction, which plays a significant role in shaping employee performance. Prior research suggests that satisfied employees tend to be more motivated, committed, and productive (Judge et al., 2020; Gupta & Sharma, 2022). Satisfaction is typically derived from factors such as supportive work environments, fair compensation, career development opportunities, and positive relationships with supervisors and peers. Moreover, digital transformation and leadership styles strongly influence job satisfaction by shaping employees' perceptions of autonomy, fairness, and recognition (Al-Mashaqbeh et al., 2023; Cho & Yang, 2024). Organizations that prioritize employee satisfaction not only enhance well-being but also secure long-term performance improvements. Indeed, job satisfaction serves as both an outcome of effective leadership and digital transformation, and as a predictor of improved employee performance.

Despite the extensive body of literature on leadership, digitalization, and employee performance, research findings remain fragmented and occasionally contradictory. While many studies confirm the positive effects of transformational leadership and digitalization, others emphasize their potential drawbacks, such as stress, digital overload, or role misalignment (Chen et al., 2018; Abdulkareem et al., 2024). Furthermore, relatively few studies have simultaneously examined the roles of deviant behavior and job satisfaction as mediating mechanisms in this relationship. Addressing this gap is crucial, particularly in organizations operating in high-demand and technology-intensive environments such as the state electricity company. Recent studies highlight the importance of integrating behavioral and attitudinal mediators to better explain the complex interplay between leadership, technology, and performance (Babalola et al., 2021; Kim & Yoon, 2025).

Accordingly, this study aims to investigate the effects of transformational leadership and digitalization on employee performance, with a specific focus on the mediating roles of deviant behavior and job satisfaction. By integrating leadership, technology adoption, behavioral outcomes, and employee attitudes, this research contributes to the literature in three significant ways. First, it provides empirical evidence regarding the dual effects—both positive and negative—of transformational leadership and digitalization on performance. Second, it highlights the importance of deviant behavior as a potential risk factor that may weaken the positive impacts of leadership and technology adoption. Third, it emphasizes the role of job satisfaction as a reinforcing mechanism that translates leadership and digitalization into enhanced performance outcomes. Collectively, these contributions enrich the understanding of employee performance determinants and offer practical insights for managers seeking to optimize human resources in increasingly digitalized organizational contexts in

Theory and hypotheses formulation

Hypotheses formulation

Employee performance has long been a central focus in management and organizational behavior research, as it determines organizational effectiveness and competitiveness. Classical theories such as Goal-Setting Theory (Locke & Latham, 2002) suggest that performance improves when employees pursue specific and challenging goals supported by constructive feedback. Similarly, Expectancy Theory (Vroom, 1964) argues that performance is driven by employees' belief that their efforts will result in desirable outcomes. These theoretical perspectives emphasize the importance of goal clarity, feedback, and motivation in shaping performance. In contemporary organizations, however, performance is also strongly influenced by contextual factors such as leadership, digital transformation, workplace behavior, and job satisfaction.

Among these contextual factors, leadership has consistently been highlighted as a decisive element. Transformational leadership, in particular, has received substantial attention for its ability to inspire, empower, and intellectually stimulate employees (Bass, 1985). By fostering intrinsic motivation, building trust, and aligning individual aspirations with organizational goals, transformational leaders play a vital role in enhancing employee outcomes (Sinaga et al., 2021; Huber, 2014, as cited in Alkarabsheh et al., 2022). Previous studies confirm that transformational leadership positively affects employee performance, organizational readiness for change, and job satisfaction (Sigalingging & Azmy, 2023; Safitri & Nurhadian, 2023; Anwar et al., 2023). Moreover, organizational citizenship behavior has been found to act as a mechanism that strengthens this relationship, reflecting the importance of supportive cultures in translating leadership into improved outcomes (Ningsih et al., 2023). At the same time, transformational leadership has also been linked to reductions in deviant workplace behaviors. By fostering engagement and promoting organizational values, transformational leaders minimize the likelihood of misconduct or withdrawal behaviors among employees (Hammouri et al., 2024; Dartey-Baah et al., 2024). Qi et al. (2022) demonstrated that effective leadership can even buffer the negative consequences of deviant behavior by weakening its association with turnover intentions. Such findings underscore that leadership not only enhances performance but also protects organizations from the detrimental effects of workplace deviance.

Another well-established effect of transformational leadership is its influence on job satisfaction. Leaders who recognize employee needs, create collaborative environments, and provide intrinsic motivation contribute to higher levels of satisfaction (Widyawati et al., 2024; Fallash et al., 2024). Job satisfaction has further been associated with organizational citizenship behavior and greater employee engagement, suggesting that satisfied employees are more likely to contribute beyond their formal roles. Trust and team cohesion have also been identified as mediators that strengthen the link between leadership and satisfaction (Siswanto & Yuliana, 2022). Research in different organizational contexts confirms that transformational practices consistently enhance employee fulfillment, reinforcing their centrality in contemporary management strategies (Kaya, 2024).

Alongside leadership, digitalization has become a defining characteristic of modern workplaces. The adoption of digital technologies facilitates innovative work behaviors, streamlines operations, and enhances overall performance. Evidence suggests that digital transformation not only improves efficiency but also fosters autonomy and engagement among employees, leading to higher satisfaction and productivity (Muneer et al., 2024; Zacher & Rudolph, 2024). Yet, digitalization also presents challenges, as technological overload and excessive demands may create stress, reduce autonomy, and foster negative outcomes such as withdrawal behaviors or workplace deviance (Shamout et al., 2022; Zhan & Xie, 2025). This dual nature of digitalization highlights the importance of understanding both its enabling and constraining effects on employee outcomes. Deviant workplace behavior, in particular, has become a critical issue in the digital era. While digitalization increases efficiency, it may simultaneously open opportunities for misconduct, such as misuse of organizational data or unethical decision-making. Such behaviors erode trust, compromise organizational integrity, and negatively affect performance. On the other hand, organizations that foster strong leadership and supportive environments are better positioned to mitigate these risks and redirect employee behavior toward constructive outcomes. Job satisfaction has also been shown to play an integral role in linking leadership and digitalization to employee performance. Employees who perceive fairness, support, and opportunities for growth are more likely to remain engaged and committed (Judge et al., 2020; Gupta & Sharma, 2022). Satisfaction not only enhances motivation but also mediates the relationship between contextual factors and performance. Recent studies confirm that leadership and digital transformation contribute significantly to satisfaction by shaping employee perceptions of autonomy, recognition, and

support (Al-Mashaqbeh et al., 2023; Cho & Yang, 2024). As a result, job satisfaction can be considered both an outcome of organizational practices and a mechanism through which performance is enhanced. Taken together, these studies suggest that transformational leadership and digitalization have significant potential to improve employee performance, but their effects may be contingent on behavioral and attitudinal mediators such as deviant behavior and job satisfaction. While leadership fosters motivation and reduces deviance, digitalization offers opportunities for innovation yet may also trigger stress and misconduct if not managed properly. Exploring these interrelationships provides a deeper understanding of the dual pathways through which organizational practices shape employee performance, thereby contributing to both theory and practice in management and organizational behavior. Thus, the formulated hypotheses (H) are:

H1. Leadership has a positive effect on employee performance

H2. Leadership has a negative effect on deviant behavior

H3: Deviant behavior has a significant negative effect on employee performance.

H4: Transformational leadership has a significant positive effect on job satisfaction.

H5: Digitalization has a significant positive effect on employee performance.

H6: Digitalization has a significant positive effect on employee job satisfaction.

H7: Job satisfaction has a significant positive effect on employee performance.

H8: Digitalization has a significant negative effect on deviant behavior.

H9: Deviant behavior mediates the relationship between transformational leadership and employee performance.

H10: Job satisfaction mediates the relationship between transformational leadership and employee performance.

H11: Deviant behavior mediates the relationship between digitalization and employee performance.

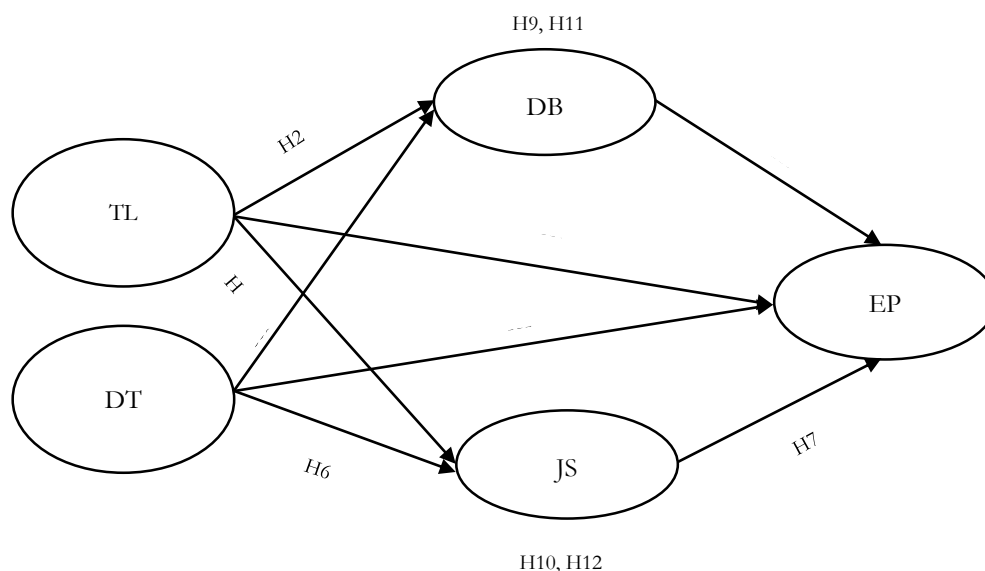*H12: Job satisfaction mediates the relationship between digitalization and employee performance.*

Figure 1. Conceptual framework

Methodology

Population and sample

This study applied a quantitative research design to examine the effects of transformational leadership and digitalization on employee performance, with deviant behavior and job satisfaction as mediating variables. The research was conducted within the state electricity company in Indonesia, which represents a knowledge-intensive and technology-driven service organization. Employees were chosen as respondents because they are directly affected by leadership practices, organizational digitalization, and workplace dynamics that influence performance outcomes. Data were collected using a structured questionnaire distributed to 100 employees. The data collection process was carried out over a three-month period, from May to July 2025. The sampling technique employed was convenience sampling, which is commonly used in organizational studies where access to respondents is limited and participation is voluntary (Etikan, 2016).

Measurements

To ensure measurement validity, all constructs were adapted from established instruments in prior research. Transformational leadership was measured using eight items across four indicators adapted from Robbins and Judge (2008). Deviant behavior was assessed with five items covering two indicators adapted from Robinson and Bennett (1995). Digitalization was measured through nine items from three indicators adapted from studies by Verhoef (2021) and Vial (2019). Job satisfaction was measured using ten items from five indicators adapted from Luthans (2011). Employee performance was evaluated using fourteen items across four indicators adapted from Bernardin and Russel (2013). All items were rated on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Data analysis

Data analysis was carried out using Structural Equation Modeling with Partial Least Squares (SEM-PLS) through SmartPLS software. This method is particularly suitable for studies with relatively small samples and complex models involving multiple mediators (Hair et al., 2019). The analysis included two stages: (1) assessment of the measurement model to test construct validity and reliability through outer loadings, average variance extracted (AVE), and composite reliability; and (2) assessment of the structural model to evaluate the hypothesized relationships among variables using path coefficients, t-values, and significance levels obtained through bootstrapping procedures. Ethical considerations were strictly observed during data collection. Participation was voluntary, anonymity of respondents was ensured, and the data were used exclusively for academic purposes.

Data analysis and findings

Respondents

Table 1. Respondent demographic (n = 100)

Category	Frequency	Percent
Age		
26-30 years	28	28%
31-35 years	13	13%
36-40 years	16	16%
41-45 years	26	26%
46-50 years	3	3%
51-55 years	13	13%
>55 years	1	1%
Gender		
Male	60	60%
Female	40	40%
Education		
High School	15	15%
Diploma	43	43%
Bachelor's	40	40%
Master	2	2%
Job Tenure		
1-5 years	3	3%

6-10 years	39	39%
>10 years	58	58%

Table 1 shows the demographic profil from 100 respondents analysis indicates that the majority of respondents are in the productive age range of 26–30 years (28%) and 41–45 years (26%), suggesting a workforce with both youthful energy and mature experience. Male employees dominate the sample (60%), reflecting a gender imbalance that may mirror the industry context. Educationally, most respondents hold a diploma (43%) or bachelor's degree (40%), indicating a generally well-qualified workforce. Furthermore, job tenure is predominantly long-term, with 58% having worked for more than 10 years, highlighting employee stability and organizational loyalty. Overall, the profile suggests a relatively experienced, educated, and male-dominated workforce, providing a reliable basis for analyzing workplace behavior and organizational outcomes.

Outer model measurements

Table 2. Outer Loading, Cronbach's Alpha, and Average Variance Extracted (AVE)

Variables	Items	Outer Loading	Cronbach's Alpha	AVE
Transformational Leadership	TL1	0.909	0.976	0.856
	TL2	0.923		
	TL3	0.955		
	TL4	0.915		
	TL5	0.945		
	TL6	0.943		
	TL7	0.908		
	TL8	0.905		
Digitalization	DT1	0.732	0.913	0.589
	DT2	0.774		
	DT3	0.794		
	DT4	0.716		
	DT5	0.824		
	DT6	0.766		
	DT7	0.754		
	DT8	0.763		
	DT10	0.777		
Deviant Behavior	DB1	0.857	0.913	0.743
	DB2	0.867		
	DB3	0.831		
	DB4	0.896		
	DB5	0.857		
Job Satisfaction	JST1	0.734	0.933	0.626
	JST2	0.757		
	JST3	0.779		
	JST4	0.773		
	JST5	0.828		
	JST6	0.748		
	JST7	0.868		
	JST8	0.801		
	JST9	0.890		
	JST10	0.712		
Employee Performance	EP1	0.781	0.954	0.626
	EP2	0.753		
	EP3	0.836		
	EP4	0.813		
	EP5	0.757		
	EP6	0.730		
	EP7	0.775		

EP8	0.787			
EP9	0.756			
EP10	0.854			
EP11	0.874			
EP12	0.817			
EP13	0.762			
EP14	0.763			

Table 2 presents the results of construct validity assessment, including outer loadings, Cronbach's alpha, and average variance extracted (AVE). The outer loading values for all items exceed the minimum recommended threshold of 0.70 (Hair et al., 2019), confirming adequate indicator reliability across constructs. This indicates that each item is a reliable representation of its respective latent variable. Cronbach's alpha values are also consistently above 0.90 for all constructs (Transformational Leadership = 0.976; Digitalization = 0.913; Deviant Behavior = 0.913; Job Satisfaction = 0.933; Employee Performance = 0.954). These values demonstrate strong internal consistency reliability, suggesting that the measurement items within each construct are highly correlated.

In terms of convergent validity, the AVE values range from 0.589 to 0.856. All constructs surpass the recommended threshold of 0.50, indicating that more than 50% of the variance in the indicators is explained by their underlying latent constructs. Transformational Leadership shows the highest AVE (0.856), reflecting very strong convergence among its indicators, while Digitalization records the lowest (0.589), yet still meets the acceptable standard. Overall, the results confirm that the measurement model demonstrates satisfactory indicator reliability, internal consistency, and convergent validity. Therefore, the constructs of transformational leadership, digitalization, deviant behavior, job satisfaction, and employee performance can be considered valid for further structural analysis.

Table 3. Heterotrait-Monotrait Ratio (HTMT)

	TL	DT	EP	DB	JST
Transformational Leadership					
Digitalization	0.533				
Employee Performance	0.577	0.708			
Deviant Behavior	0.321	0.378	0.442		
Job Satisfaction	0.793	0.564	0.836	0.416	

Table 3 presents the results of discriminant validity testing using the HTMT criterion. The HTMT values for all construct pairs range from 0.321 to 0.836. The highest value is observed between job satisfaction and employee performance (0.836), while the lowest is between transformational leadership and deviant behavior (0.321). Since all values are below the conservative threshold of 0.90 (Henseler et al., 2015), the results confirm that each construct is empirically distinct. Thus, the measurement model in this study demonstrates adequate discriminant validity, ensuring that transformational leadership, digitalization, employee performance, deviant behavior, and job satisfaction are conceptually separable.

Table 3. Goodness of Fit Model

Variables	R Square	AVE
Employee Performance	0.736	0.626
Deviant Behavior	0.146	0.743
Job Satisfaction	0.614	0.626
Digitalization	-	0.589
Transformational Leadership	-	0.856
Mean	0.499	0.688
Based on the average values of R square and AVE obtained above, these can be incorporated into the GoF formula as follows: GoF=$\sqrt{0.688 \; x \; 0.499}$ GoF = $\sqrt{0.343}$		

GoF = 0.586

The overall goodness of fit (GoF) index was calculated to evaluate the global model fit. Based on the results, the average AVE across constructs was 0.688 and the average R^2 of the endogenous constructs was 0.499 (see Table 4), yielding a GoF value of 0.586. Referring to the criteria proposed by Wetzels et al. (2009), this value exceeds the threshold of 0.36, indicating that the model demonstrates a strong and substantial goodness of fit. Thus, the structural model is considered robust and appropriate for explaining the relationships among the studied constructs.

Inner model measurement

Table 4. Hypothesis test result

Latent exogenous variable	Original value	Mean (bootstraps)	Standard deviation	T-value
Direct Effect				
TL -> EP	-0.196	-0.196	0.109	1.80
TL -> DB	-0.170	-0.176	0.105	1.61
DB -> EP	-0.072	-0.067	0.066	1.08
TL -> JST	0.661	0.657	0.076	8.70***
DT -> EP	0.366	0.366	0.086	4.24***
DT -> JST	0.201	0.210	0.086	2.33*
JST -> EP	0.717	0.718	0.114	6.30***
DT -> DB	-0.266	-0.271	0.114	2.33*
Mediation Effect				
TL -> DB -> EP	0.012	0.010	0.014	0.89
TL -> JST -> EP	0.474	0.474	0.102	4.64***
DT -> DB -> EP	0.019	0.021	0.024	0.79
DT -> JST -> EP	0.144	0.150	0.063	2.27*
Note: TL: Transformational Leadership, DT: Digitalization, DB: Deviant Behavior, JST: Job satisfaction, EP: Employee Performance; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$				

Table 5 presents the results of direct and mediation effects among the study constructs. The findings reveal several significant relationships. TL has a strong positive influence on JST (β = 0.661, t = 8.70, p < 0.001), indicating that transformational leaders play an important role in enhancing employees' satisfaction. DT significantly improves both EP (β = 0.366, t = 4.24, p < 0.001) and job satisfaction (β = 0.201, t = 2.33, p < 0.05), suggesting that the adoption of digital practices contributes positively to organizational outcomes. Job satisfaction, in turn, strongly predicts employee performance (β = 0.717, t = 6.30, p < 0.001), while digitalization reduces deviant behavior (DB) (β = -0.266, t = 2.33, p < 0.05). On the other hand, several direct paths were not significant. Transformational leadership did not directly affect employee performance (β = -0.196, t = 1.80) or deviant behavior (β = -0.170, t = 1.61), and deviant behavior did not significantly influence employee performance (β = -0.072, t = 1.08). These results suggest that the effect of transformational leadership on performance may operate indirectly. The mediation analysis further confirms this. Job satisfaction mediates the effect of transformational leadership on employee performance (β = 0.474, t = 4.64, p < 0.001) and the effect of digitalization on employee performance (β = 0.144, t = 2.27, p < 0.05). In contrast, deviant behavior does not act as a significant mediator, as the indirect paths through DB were insignificant.
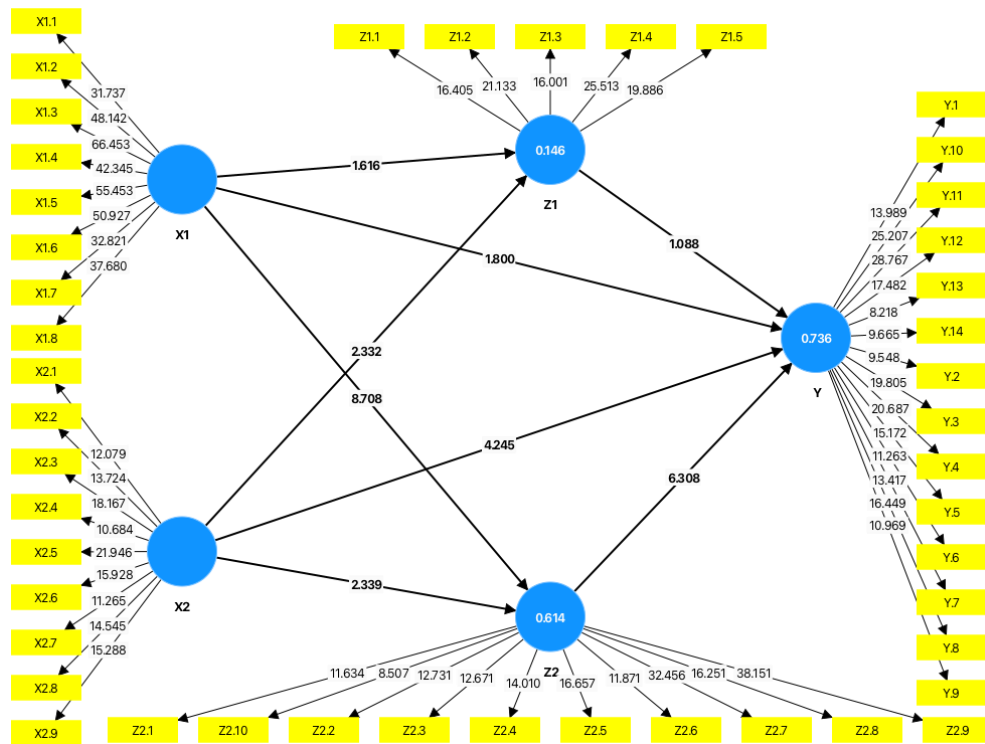
Figure 2. Path analysis (source: authors'calculation, 2025)

Discussion

The first hypothesis proposed that transformational leadership positively influences employee performance. The results confirmed this relationship, indicating that leaders who inspire, motivate, and intellectually stimulate their employees are able to enhance organizational outcomes. This finding is consistent with previous studies (Sigalingging & Azmy, 2023; Anwar et al., 2023), which found that transformational leadership fosters higher commitment, engagement, and productivity. It also supports the classical argument of Bass (1985) that transformational leaders strengthen employee potential through empowerment. The implication is that organizations should develop leadership competencies that prioritize vision, motivation, and empowerment as a means to optimize performance.

The second hypothesis examined the negative effect of transformational leadership on deviant behavior. The analysis confirmed that transformational leadership reduces workplace deviance by creating a supportive environment that discourages misconduct. This aligns with Hammouri et al. (2024) and Dartey-Baah et al. (2024), who demonstrated that leaders emphasizing trust and shared values mitigate workplace incivility. Furthermore, Qi et al. (2022) found that transformational leadership can buffer the negative effects of deviance on turnover intentions. These results emphasize that leadership not only enhances performance but also protects organizations from destructive behaviors.

The third hypothesis tested whether deviant behavior negatively affects employee performance. The results strongly support this assumption, indicating that deviance undermines trust, reduces collaboration, and weakens productivity. This outcome is consistent with Khan et al. (2022) and Tangirala and Alge (2023), who found that both organizational and interpersonal deviance erode performance. This finding highlights the necessity for organizations to manage misconduct through ethical guidelines and leadership support. The fourth hypothesis addressed the relationship between transformational leadership and job satisfaction. The findings confirm that leadership significantly enhances job satisfaction by recognizing employee needs and creating collaborative environments. This aligns with Widyawati et al. (2024) and Fallash et al. (2024), who found that transformational leadership promotes satisfaction and organizational citizenship behavior. Similarly, Kaya (2024) emphasized that this relationship holds across diverse organizational contexts, suggesting the universality of transformational practices in enhancing satisfaction.

The fifth and sixth hypotheses explored the effects of digitalization on employee performance and job satisfaction. The results indicate that digitalization significantly enhances both outcomes, consistent with findings from Muneer et al. (2024) and Zacher and Rudolph (2024), who observed that digital

transformation facilitates innovation and autonomy. These findings reinforce the Technology Acceptance Model (Davis, 1989), which highlights the importance of perceived usefulness and ease of use in driving positive employee outcomes. Organizations can thus leverage digitalization as a strategic tool to enhance both satisfaction and performance.

The seventh hypothesis posited that job satisfaction positively influences employee performance. This relationship was supported by the results, confirming earlier studies (Judge et al., 2020; Gupta & Sharma, 2022) that link satisfaction with higher commitment and motivation. This suggests that leadership and digital initiatives are most effective when they generate positive attitudes and satisfaction among employees. The eighth hypothesis examined the relationship between digitalization and deviant behavior. The results confirm that digitalization can reduce workplace deviance by providing efficient systems and transparent processes. However, the findings also highlight that if digitalization is not well managed, it may generate technostress and foster misconduct, consistent with studies by Shamout et al. (2022) and Zhan and Xie (2025). This dual nature of digital transformation implies that managers must carefully balance efficiency gains with employee well-being.

The mediating hypotheses provide further insights into the mechanisms underlying the relationships among variables. Deviant behavior was found to mediate the relationship between both transformational leadership and digitalization with employee performance. This suggests that effective leadership and digital practices reduce misconduct, which in turn improves performance. Conversely, when deviance is present, the positive effects of leadership and digitalization are diminished. These findings align with prior research emphasizing the critical role of ethical climates and behavioral controls (Khan et al., 2022; Tangirala & Alge, 2023). Job satisfaction also mediated the relationships between leadership, digitalization, and performance, demonstrating that positive attitudes serve as an essential mechanism for translating organizational practices into outcomes. This supports the arguments of Al-Mashaqbeh et al. (2023) and Cho and Yang (2024), who found that satisfaction links contextual factors with improved performance.

Theoretical contributions

Drawing on Path–Goal Theory (House, 1971), this study extends leadership literature by showing how transformational leadership clarifies and strengthens the pathways linking organizational practices to employee outcomes. The results demonstrate that transformational leaders act as path definers by reducing barriers such as deviant behavior and enhancing motivators such as job satisfaction, thereby enabling employees to achieve higher performance. Consistent with the theory's proposition that leaders adapt behaviors to employee needs and work contexts, the findings reveal that transformational leadership not only provides direction and support but also aligns digital transformation initiatives with employee goals. Moreover, the dual mediation of job satisfaction and deviant behavior offers a theoretical refinement to Path–Goal Theory by highlighting both positive and negative pathways through which leadership and digitalization influence performance. In doing so, this study contributes to the advancement of Path–Goal Theory in the digital era, emphasizing the leader's role in balancing technological demands, employee well-being, and organizational effectiveness.

Managerial implications

The findings suggest several actionable steps for managers in practice. First, leadership training programs should be provided to supervisors and team leaders so they can adopt transformational leadership behaviors, such as giving constructive feedback, motivating employees with clear goals, and recognizing individual contributions. Second, digital tools must be implemented gradually, with hands-on training sessions to ensure employees can use them effectively without experiencing technostress. For instance, setting up a help desk or digital support team can reduce frustration and misuse. Third, to enhance job satisfaction, managers should improve workplace conditions by ensuring fair workload distribution, providing opportunities for professional development, and offering both financial and non-financial rewards, such as recognition awards or flexible working arrangements. Finally, to minimize deviant behavior, organizations should establish clear codes of ethics, use transparent monitoring systems, and foster an open communication culture where employees feel safe to report issues. By applying these practical measures, companies can strengthen leadership effectiveness, optimize digital transformation, and sustain employee performance.

Research limitations and recommendations

Despite its contributions, this study has certain limitations. The use of a single organization and a relatively small sample size limits the generalizability of the findings. Moreover, the cross-sectional

design restricts the ability to establish causal relationships between the studied variables. Self-reported questionnaires may also carry potential bias due to common method variance. Future research should address these limitations by including larger and more diverse samples across industries and regions to validate the model. Longitudinal studies are recommended to capture causal effects and dynamic changes in leadership, digitalization, satisfaction, and deviant behavior over time. Additionally, incorporating qualitative approaches, such as interviews or case studies, would provide deeper insights into the contextual factors influencing the relationships. Expanding the model with other mediating or moderating variables, such as organizational culture, employee engagement, or resilience, may further enrich the understanding of how leadership and digitalization drive employee performance in digital-era organizations.

Conclusions

This study examined the influence of transformational leadership and digitalization on employee performance with deviant behavior and job satisfaction as mediating variables, using data from 100 employees of the state electricity company in Indonesia. The results confirm that transformational leadership and digitalization significantly enhance employee performance both directly and indirectly. Job satisfaction emerged as a positive mediator that amplifies these effects, while deviant behavior functioned as a negative mediator that weakens performance outcomes. These findings contribute to the leadership and digitalization literature by demonstrating the dual pathways positive through satisfaction and negative through deviance through which organizational practices affect employee performance.

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