

Enhancing MSMEs Performance Through Digital Leadership and Organizational Citizenship Behaviour: Does Digital Transformation Matter?

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ABSTRACT

Purpose – This study investigates the effects of Digital Leadership and Organizational Citizenship Behavior (OCB) on MSME performance and examines the mediating role of Digital Transformation from the perspective of Dynamic Capability Theory.

Design/Methodology/Approach – A quantitative explanatory study with a cross-sectional design was conducted involving 220 MSME owners in Kampar Regency, Riau Province, Indonesia, using a census sampling approach. The proposed relationships were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM).

Findings – The results show that Digital Leadership and OCB significantly promote Digital Transformation. Digital Leadership and Digital Transformation positively affect MSME performance, whereas OCB has no direct effect on performance but exerts a significant indirect effect through Digital Transformation. These findings highlight Digital Transformation as a strategic capability that translates leadership quality and positive organizational behavior into improved business performance.

Originality/Value – This study extends Dynamic Capability Theory by integrating Digital Leadership, OCB, and Digital Transformation into a unified framework for explaining MSME performance. The findings demonstrate that successful digital transformation depends not only on technology adoption but also on effective leadership and organizational commitment, providing practical implications for MSME managers and policymakers.

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1. Introduction

The widespread diffusion of digital technologies has significantly transformed the way organizations operate and compete across industries. To remain competitive in an increasingly volatile business environment, firms are required to rethink their business models, optimize internal processes, and develop new strategic capabilities. Technological innovations—including artificial intelligence, cloud-based systems, big data, digital platforms, mobile technologies, and electronic commerce—have redefined how organizations deliver value, engage with customers, allocate resources, and sustain competitive advantage. Under these conditions, digital transformation has evolved from an optional initiative into a fundamental strategic requirement for achieving long-term organizational success. The urgency of this transformation is particularly apparent in emerging economies, where rapid digitalization has generated substantial economic opportunities while simultaneously exposing structural weaknesses among business organizations, particularly Micro, Small, and Medium Enterprises (MSMEs). Indonesia provides an important context for examining this phenomenon because it is recognized as one of Southeast Asia's most dynamic digital economies. Based on data released by the Ministry of Cooperatives and MSMEs (2024), more than 64 million MSMEs operate across the country, accounting for over 60% of Indonesia's Gross Domestic Product while providing employment for nearly 97% of the national labor force. At the same time, digital connectivity has expanded considerably. Current projections estimate that internet penetration will reach approximately 220 million users by 2025, equivalent to around four-fifths of the population, while over 180 million individuals are expected to actively participate in digital commerce activities. These developments offer MSMEs considerable opportunities to increase market reach, streamline operational activities, lower transaction expenses, and strengthen customer engagement through the effective utilization of digital technologies.

Although the digital economy continues to expand rapidly, the progress of digital transformation among Indonesian MSMEs remains uneven. National reports indicate that only a relatively small proportion of MSMEs have been successfully integrated into the digital ecosystem, whereas many businesses continue to operate using conventional management practices. Previous studies identify several factors that hinder this transition, including inadequate digital competencies, limited technological infrastructure, financial limitations, cybersecurity risks, and insufficient managerial capability to strategically implement digital technologies within organizational processes. Consequently, many MSMEs restrict digitalization to the adoption of social media, online marketplaces, or electronic payment systems without redesigning business processes, organizational routines, decision-making mechanisms, or customer relationship management. This distinction demonstrates that adopting digital technologies should not automatically be interpreted as achieving digital transformation because genuine transformation requires comprehensive organizational change rather than the simple implementation of digital tools (Vial, 2019). The gap between technology adoption and organizational transformation raises an important research issue regarding why some digitally enabled MSMEs experience substantial improvements in business performance while others realize only marginal gains. Previous literature consistently suggests that technological resources alone rarely produce sustainable competitive advantages. Instead, organizations generate value from digital technologies when they possess complementary capabilities that facilitate the integration of technological resources with managerial competence, organizational processes, and employee involvement.

Therefore, understanding digital transformation requires a broader organizational perspective that extends beyond technological implementation by incorporating leadership capability, employee behavior, and organizational preparedness as critical determinants of successful transformation.

According to the Resource-Based View (RBV), sustainable organizational performance depends on a firm's ability to possess and effectively utilize strategic resources that are valuable, difficult to imitate, scarce, and deeply embedded within the organization (Barney, 1991). Complementing this perspective, Dynamic Capability Theory emphasizes that organizations remain competitive by continuously identifying environmental changes, capitalizing on emerging opportunities, and reconfiguring their internal resources to respond to evolving market conditions and technological disruption (Teece, Pisano, & Shuen, 1997). Viewed through these theoretical lenses, digital transformation should not be interpreted simply as the adoption of digital technologies; rather, it represents an organizational capability that emerges from the integration of leadership competence, employee engagement, organizational learning, and technological resources. Consequently, explanations of MSME performance that rely exclusively on technological adoption fail to capture the broader organizational processes required to generate sustainable competitive advantage. Building upon these theoretical foundations, this study conceptualizes digital transformation as a strategic organizational capability instead of a purely technological initiative. Although digital technologies create opportunities to improve operational efficiency, innovation, and business competitiveness, organizations can realize these benefits only when they possess the managerial competencies and organizational readiness needed to implement technological change effectively (Vial, 2019). Within this process, Digital Leadership assumes a central role by articulating a clear digital vision, fostering innovation, encouraging experimentation, and guiding organizational members through continuous adaptation to technological change (Mihardjo et al., 2019; Zeike et al., 2019). Effective digital leaders therefore contribute not only by introducing new technologies but also by cultivating an organizational culture that promotes collaboration, continuous learning, and organizational agility. However, previous empirical findings regarding the direct contribution of Digital Leadership to organizational performance remain inconsistent, particularly within MSMEs where leadership effectiveness is frequently constrained by limited resources, relatively simple organizational structures, and lower levels of digital maturity (Wesly et al., 2021).

Beyond leadership capability, successful digital transformation also depends heavily on the willingness of employees to contribute beyond their prescribed job responsibilities. This perspective highlights the importance of Organizational Citizenship Behavior (OCB), which encompasses voluntary employee actions such as helping colleagues, sharing knowledge, cooperating across functions, and proactively solving organizational problems to improve overall organizational effectiveness (Organ, 1988; Widarko & Anwarodin, 2022). As organizations undergo digital transformation, employees are expected to acquire new digital competencies, adjust to redesigned work processes, and actively assist coworkers in overcoming implementation challenges. These discretionary behaviors are especially important for MSMEs because collaboration and organizational flexibility often compensate for shortages in financial capital and technological infrastructure. Therefore, digital transformation should be understood as a socio-technical phenomenon in which technological resources, leadership capability, and employee behavior collectively shape organizational outcomes rather than functioning as independent factors. Although prior research generally

reports positive associations among Digital Leadership, Organizational Citizenship Behavior, Digital Transformation, and organizational performance, most existing studies examine these variables separately or focus primarily on large organizations with relatively advanced digital capabilities. Consequently, empirical evidence explaining how these organizational capabilities interact within MSMEs remains limited, particularly in developing regions where digital transformation is still evolving. As a result, the organizational mechanisms through which leadership capability and employee discretionary behavior jointly facilitate digital transformation and subsequently improve organizational performance have not yet been comprehensively explained.

To address this limitation, the present study develops an integrated research framework that combines Digital Leadership, Organizational Citizenship Behavior, and Digital Transformation within the theoretical perspective of Dynamic Capability Theory. Rather than emphasizing technology adoption alone, this research proposes that superior organizational performance emerges from the interaction between managerial capability, employee behavioral capability, and organizational digital capability. Furthermore, the study investigates whether Organizational Citizenship Behavior contributes more substantially to MSME performance than Digital Leadership and Digital Transformation, thereby providing additional insights into the relative importance of organizational capabilities within resource-constrained business environments. The empirical investigation is conducted among MSMEs located in Kampar Regency, Riau Province, Indonesia. This region has experienced rapid growth in digital technology adoption while continuing to encounter challenges related to digital competence, organizational preparedness, and leadership effectiveness. Such conditions provide an appropriate empirical setting for examining the interplay among leadership, employee behavior, and digital transformation in shaping organizational performance. Accordingly, this study seeks to evaluate the direct effects of Digital Leadership, Organizational Citizenship Behavior, and Digital Transformation on MSME performance while also examining the mediating role of Digital Transformation in explaining these relationships.

2. Literature Review & Hypothesis Development

2.1. Digital Leadership and MSME Performance

The continuous development of digital technologies has transformed organizational environments and altered the way businesses operate. As organizations increasingly rely on digital systems, effective leadership requires competencies, perspectives, and managerial approaches that differ substantially from those needed in traditional settings. Leaders are expected to guide organizational members in embracing technological innovation and integrating digital tools into everyday business activities to enhance organizational effectiveness and long-term performance. This leadership approach is commonly referred to as Digital Leadership. Digital Leadership refers to a leader's capability to leverage digital technologies and innovation in directing organizational activities toward strategic objectives. Beyond introducing new technologies, digital leaders formulate a clear digital vision, establish strategies that align technological initiatives with organizational goals, manage people and organizational resources effectively, and cultivate a culture that encourages adaptability, innovation, and continuous learning. In this regard, Digital Leadership facilitates

organizational readiness to respond to rapid technological change while supporting the successful implementation of digital transformation initiatives.

Previous studies have emphasized that Digital Leadership represents the integration of leadership capability and digital technology utilization to accelerate organizational digital transformation (Tulungen et al., 2022). Likewise, Mihardjo et al. (2019) argue that Digital Leadership serves as a critical organizational capability that enables firms to respond proactively to technological disruption and sustain organizational transformation. In addition to leadership capability, organizational success in the digital era also depends on employees' willingness to contribute beyond their formal job responsibilities. This voluntary behavior is conceptualized as **Organizational Citizenship Behavior (OCB)**, which encompasses discretionary actions that are not formally required but contribute positively to organizational effectiveness. Employees demonstrating OCB willingly assist coworkers, share knowledge, cooperate across organizational functions, and proactively solve work-related problems without expecting formal rewards. Such behaviors strengthen organizational collaboration, improve operational efficiency, and create a supportive work environment that facilitates organizational development. Consequently, OCB represents an important source of organizational value because it reflects employees' commitment to supporting organizational objectives through positive, constructive, and cooperative behavior (Widarko & Anwarodin, 2022). H¹: Digital Leadership has a positive and significant effect on MSME performance.

2.2. Organizational Citizenship Behaviour and MSME Performance

Organizational Citizenship Behavior (OCB) is employee behavior that voluntarily performs work beyond the standard tasks assigned to them to help the company achieve its goals. OCB is a voluntary behavior that requires extra action by employees to improve company performance. This behavior reflects the added value of employees, which is a form of positive, constructive, and meaningful social behavior that helps business development (Widarko & Anwarodin, 2022). In another finding, OCB can strengthen the impact of digital transformation because proactive and collaborative employees are more likely to adopt new technologies and support organizational change (Saad et al., 2024; Putra et al., 2024; Malik et al., 2024)

H₂: Organizational Citizenship Behavior positively and significantly influences MSME performance.

2.3. Digital Transformation to MSME Performance

Digital transformation is a process organizations implement to integrate digital technologies across all areas of the business, fundamentally changing how they deliver value to customers. Companies adopt innovative digital technologies to create cultural and operational changes that better adapt to changing customer demands. Digital transformation is a change in an organization driven by the development of digital technologies accessed by the company, aimed at improving business processes (Putri et al., 2021). Digital transformation is widely recognized as improving organizational performance, including among MSMEs (Teng et al., 2022). However, the impact is not always uniform and is influenced by various factors. Most studies show that digital transformation has the potential to increase efficiency, productivity, and competitiveness, but the results depend heavily on organizational readiness, strategy, and other external factors (Daud, 2024; Hanelt et al., 2021).

H3: Digital transformation positively and significantly influences MSME performance.

2.4. Digital Leadership and MSME Performance through Digital Transformation

Digital Leadership refers to a leader's capability to strategically utilize digital technologies in shaping organizational direction, strengthening organizational culture, and improving business processes in response to rapidly evolving environmental conditions. Rather than serving solely as decision-makers, digital leaders function as catalysts for organizational change by encouraging technological innovation, fostering a culture that embraces digitalization, and preparing the organization for successful digital transformation. By adopting a technology-oriented and adaptive leadership approach, they facilitate the effective implementation of digital solutions including e-commerce platforms, social media, and management information systems to enhance operational effectiveness, optimize organizational processes, and broaden market opportunities. Recent empirical research supports this relationship. Studies show that digital leadership plays a significant role in driving successful digital transformation and improving organizational performance through technology-based innovation (Mihardjo et al., 2023). Digital leadership has a positive impact on company performance by enhancing digital capabilities and the effectiveness of organizational transformation (Gu et al., 2025). Research by Al-Husban et al (2021) revealed that leaders with a strong digital vision can enhance an organization's readiness to adopt technology, ultimately impacting business performance. Digital transformation mediates the relationship between leadership and MSME performance, thus strengthening the strategic role of digital leadership in enhancing small business competitiveness (Prakasa & Jumani, 2024). Based on this description, the researchers argue that digital leadership plays a crucial role in driving effective digital transformation, which ultimately impacts MSME performance improvement. Therefore, the research hypothesis 4 is as follows: H4: Digital transformation positively mediates the relationship between digital leadership and MSME performance.

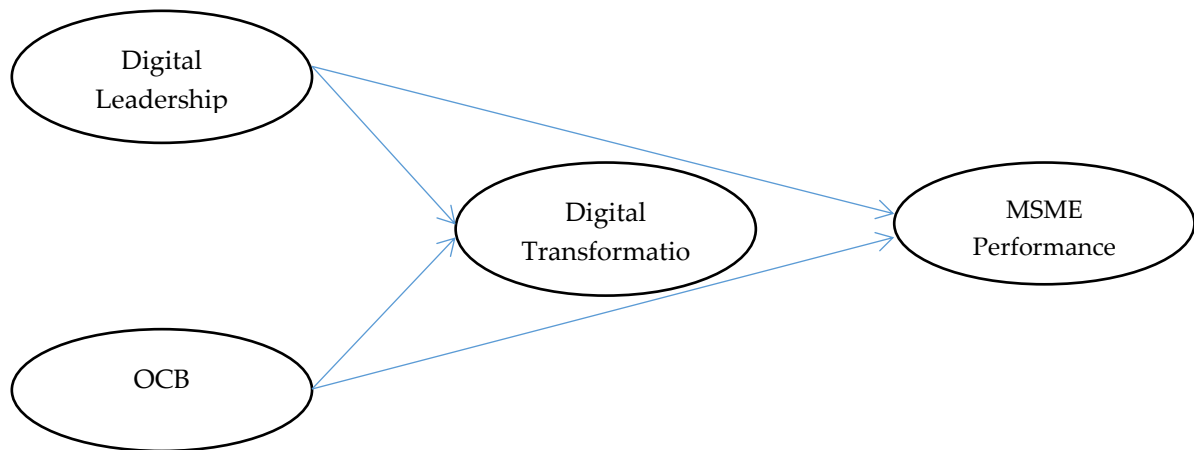
2.5. Organizational Citizenship Behaviour to MSME Performance through Digital Transformation

Organizational Citizenship Behavior (OCB) describes discretionary employee actions that are performed voluntarily beyond formal job requirements and contribute to improving overall organizational effectiveness. Within the context of MSME digital transformation, these behaviors become increasingly important because successful digitalization depends not only on technological competence but also on employees' willingness to embrace change, cooperate with colleagues, and actively support organizational development. Employees who demonstrate high levels of altruism, conscientiousness, and civic virtue are generally more willing to acquire new digital competencies, exchange technological knowledge, and assist coworkers in adapting to new digital systems. Such behaviors facilitate the implementation of digital initiatives and reduce resistance to organizational change, thereby accelerating the digital transformation process. As digital transformation becomes more effectively embedded within organizational activities, MSMEs are better positioned to improve operational efficiency, enhance service delivery, and strengthen their competitive position in an increasingly digital business environment. Recent empirical evidence supports this relationship. Li et al. (2023) reported that proactive and collaborative employee behavior

significantly contributes to the successful implementation of digital transformation by accelerating digital technology adoption and improving organizational outcomes. Similarly, research published in the *Journal of Business Research* demonstrated that OCB functions as an important catalyst for technology-driven organizational change, ultimately leading to superior organizational performance (Gu et al., 2025). Consistent with these findings, Vial (2019) argued that knowledge sharing, employee adaptability, and voluntary organizational support enhance the effectiveness of digital transformation, particularly in organizations where human resources play a critical role in facilitating technological change. This argument is especially relevant for MSMEs, which frequently operate under financial and technological constraints and therefore rely heavily on employees' voluntary contributions to ensure the success of digital initiatives.

Additional empirical support is provided by Prakasa and Jumaní (2024), who found that Digital Transformation serves as an intervening mechanism linking organizational behavior to MSME performance. Their findings indicate that OCB contributes not only directly to organizational effectiveness but also indirectly by improving the quality and effectiveness of digital technology implementation. Drawing upon these theoretical and empirical perspectives, this study proposes that organizations characterized by stronger Organizational Citizenship Behavior are more likely to implement digital transformation successfully. In turn, a more effective digital transformation process is expected to enhance MSME performance by increasing productivity, operational efficiency, and business competitiveness. H⁵: Digital Transformation positively mediates the relationship between Organizational Citizenship Behavior and MSME performance.

Figure 1. Research Framework



3. Methodology

This research adopted a quantitative explanatory methodology with a cross-sectional survey design to investigate the relationships among Digital Leadership, Organizational Citizenship Behavior (OCB), Digital Transformation, and MSME Performance. Primary data were gathered through structured questionnaires distributed once to Micro, Small, and Medium Enterprises (MSMEs) operating in Kampar Regency, Riau Province, Indonesia. The target population comprised 220 MSMEs that had previously participated in government initiatives promoting digital literacy and digital business development and had implemented various

digital technologies in their business activities, such as social media platforms, electronic commerce, digital payment services, and online marketing applications. Given that the number of eligible MSMEs was relatively limited and all members of the population could be reached, this study employed a census approach rather than selecting a subset of respondents. Consequently, every MSME meeting the predetermined criteria was included in the survey, producing a final dataset of 220 complete and usable responses for statistical analysis. To ensure the relevance of the sample, several inclusion criteria were established. Participating businesses were required to (1) be officially operating within Kampar Regency, (2) utilize digital technologies as part of their business operations, (3) employ a minimum of two workers, and (4) provide informed consent to participate voluntarily in the research.

The organizational unit served as the primary unit of analysis, with each MSME represented by its owner. Business owners were intentionally selected as key informants because they hold primary responsibility for organizational decision-making, including the formulation of digital strategies, implementation of technological initiatives, management of organizational resources, supervision of employees, and evaluation of business performance. Within Indonesian MSMEs, owners commonly perform multiple managerial functions simultaneously, allowing them to possess comprehensive knowledge of leadership practices, employee behavior, digital transformation activities, and organizational outcomes. For this reason, one owner represented each participating enterprise so that the collected information reflected organizational conditions rather than individual employee perceptions.

The survey was administered directly during field visits and MSME digital business mentoring programs conducted throughout Kampar Regency. Prior to completing the questionnaire, respondents received an explanation regarding the objectives of the research, the voluntary nature of their participation, and the confidentiality of the information provided. They were also informed that all responses would be used exclusively for academic research purposes. The measurement scales for Digital Leadership, Organizational Citizenship Behavior, Digital Transformation, and MSME Performance were adapted from well-established instruments reported in previous studies. All constructs were measured using a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). Collecting information from MSME owners was considered the most appropriate approach because they are responsible for strategic planning, digital technology adoption, employee management, resource allocation, and organizational performance evaluation, enabling them to provide reliable assessments of the organizational-level constructs examined in this study.

Table 1. Operational Definition and Variable Measurement

Variable	Defenition	Indicators
Digital Leadership	Digital leadership is a combination of leadership style and the use of digital technology in realizing digital transformation (Tulungen et al., 2022).	I encourage the use of digital technology in managing my business. I communicate a clear vision regarding the adoption of digital technology in my business. I encourage innovation by utilizing digital technology to improve business processes. I continuously develop my own and my employees' digital capabilities to support business growth. Tulungen et al. (2022); Kane et al. (2019); El Sawy et al. (2016)

Organizational Citizenship Behavior (OCB)	Organizational Citizenship Behavior (OCB) refers to employees' discretionary behaviors that go beyond formal job requirements and voluntarily contribute to organizational effectiveness (Organ, 1988).	Employees voluntarily help coworkers who experience work-related difficulties. Employees willingly perform tasks beyond their formal job responsibilities when needed. Employees maintain cooperative and respectful relationships with coworkers. Employees demonstrate initiative to support business operations without being instructed. Employees willingly participate in activities that contribute to organizational improvement. Employees voluntarily provide suggestions and additional efforts to improve organizational effectiveness. Organ (1988); Podsakoff et al. (2000)
Digital Transformation	Digital transformation is a change in an organization caused by the development of digital technology accessed by the company with the aim of changing and improving business processes (Putri et al., 2021)	My business has adopted digital technology in its daily operations. I use digital platforms to communicate with customers and business partners. Digital technology has improved the efficiency of my business processes. My business integrates digital technology into various operational activities. Digital technology helps me make business decisions more quickly and accurately. I utilize digital platforms for marketing and sales activities. Digital technology has improved the quality of products and services offered to customers. My business continuously adapts to technological developments. Digital transformation has strengthened my business competitiveness. Putri et al. (2021); Vial (2019); Verhoef et al. (2021)
MSME Performance	Performance is the level of achievement of the work results of an individual/group in an organization in a certain period according to the scope of authority and responsibility of each in	My business sales have improved over the past few years. My business profitability has increased.³ Customer satisfaction with my products or services has improved. The operational efficiency of my business has improved.

an effort to achieve goals, carried out legally, without violating the law, and in accordance with morals and ethics. (Warmana & Widnyana, 2018)

My business has expanded its customer base and market reach.

The performance of my business has improved compared with previous years. Warmana & Widnyana (2018); Venkatraman & Ramanujam (1986); Kaplan & Norton (1996)

Organizational Citizenship Behavior (OCB) was assessed by MSME owners acting as key informants. Although OCB primarily reflects employees' discretionary behaviors beyond formal job requirements (Organ, 1988), MSME owners were considered appropriate respondents because they are directly involved in daily business operations and work closely with their employees. Moreover, one of the sampling criteria required participating MSME to employ at least two employees, ensuring that owners had sufficient opportunities to observe employees' discretionary behaviors in the workplace. This close interaction enables owners to evaluate behaviors such as voluntarily helping coworkers, demonstrating initiative, cooperating beyond formal job responsibilities, and contributing to organizational effectiveness. The use of owners as key informants is consistent with organizational research, where knowledgeable informants are employed to assess organizational practices and employee behaviors (Phillips, 1981; Kumar et al., 1993). Therefore, the OCB construct in this study represents the owners' assessment of their employees' citizenship behaviors rather than their own behaviors.

The collected data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS 4, which is appropriate for examining complex relationships among multiple latent constructs while accommodating prediction-oriented research (Hair et al., 2022). Following the recommended two-stage analytical procedure, the measurement model was first evaluated by assessing indicator reliability through outer loading values, internal consistency reliability using Cronbach's Alpha and Composite Reliability (CR), convergent validity using the Average Variance Extracted (AVE), and discriminant validity using the Fornell–Larcker Criterion, where the square root of the AVE for each construct was required to exceed its correlations with other constructs (Claes Fornell & David F. Larcker, 1981). Once the adequacy of the measurement model had been established through the required reliability and validity assessments, the structural model was subsequently analyzed to test the proposed hypotheses. Hypothesis testing was performed using the bootstrapping technique with 5,000 resampling iterations to estimate the statistical significance of the structural relationships. The significance of each hypothesized path was determined by examining the standardized path coefficients (β), corresponding t^* -values, and probability (p^*) values. In addition, the predictive capability of the model was evaluated using the coefficient of determination (R^2), which indicates the proportion of variance explained by the predictor variables. To further assess the relative contribution of each exogenous construct to the endogenous variables, effect size (f^2) was calculated based on the criteria recommended by Cohen (1988). The indirect relationships proposed in the conceptual model were also investigated by testing the mediating effect of Digital Transformation through the same bootstrapping procedure. This approach enabled a comprehensive examination of both the direct structural relationships and the mediation effects among all constructs included in the research model.

4. Result and Discussion

4.1. Result

Table 2 presents the demographic profile of the respondents and the descriptive statistics of all measurement indicators used in this study. A total of 220 MSME owners participated in the survey, representing a 100% response rate due to the census sampling approach employed.

Table 2. Descriptive Statistics

Variable				Amount	Percentage
Gender					
Male				169	77
Female				51	23
Age					
<30				57	26
30-<40				155	70
40-50				8	4
	N	Min	Max	Mean	Std. Deviation
D1	220	1.00	5.00	3.7955	.69504
D2	220	1.00	5.00	3.7182	.80673
D3	220	1.00	5.00	3.7409	.82271
D4	220	1.00	5.00	3.5864	.76856
D5	220	1.00	5.00	3.9591	.81826
D6	220	1.00	5.00	3.7636	.78137
C1	220	1.00	5.00	2.7682	.94887
C2	220	1.00	5.00	2.7136	.98147
C3	220	1.00	5.00	3.9364	.79700
C4	220	1.00	5.00	3.8864	.82804
C5	220	1.00	4.00	1.9318	.71506
C6	220	1.00	4.00	1.9000	.66139
C7	220	1.00	4.00	1.8591	.69121
C8	220	1.00	5.00	3.8955	.78396
C9	220	1.00	5.00	4.0000	.79954
A1	220	2.00	5.00	4.0000	.70225
A2	220	2.00	5.00	3.8682	.67970
A3	220	2.00	5.00	4.1545	.60721
A4	220	1.00	5.00	3.9091	.72207
B1	220	1.00	5.00	3.4727	.80193
B2	220	1.00	5.00	2.8727	.88734
B3	220	1.00	5.00	3.2045	1.01089
B4	220	1.00	5.00	3.3773	.91083
B5	220	1.00	5.00	3.4182	.93518
B6	220	1.00	5.00	3.5045	.84127

Note: A: Digital Leadership, B: OCB, C: Digital Transformation, D: MSME Performance.
Source: data processed by SPSS Version 26 (2026).

The demographic characteristics of the respondents reveal that male entrepreneurs constituted the majority of the sample, representing 77% of all participants, whereas female entrepreneurs

accounted for the remaining 23%. This composition suggests that ownership and management of MSMEs in Kampar Regency continue to be largely dominated by men. With respect to age distribution, most respondents (70%) were between 30 and 39 years old, while 26% were younger than 30 years and only 4% were within the 40–50-year age group. The predominance of respondents within the productive age category indicates that MSME owners generally possess favorable demographic characteristics for adopting digital innovations and implementing technology-driven business strategies. Descriptive analysis further indicates that respondents expressed generally favorable perceptions across all constructs investigated in this study. Each measurement item was assessed using a five-point Likert scale, where higher values represent stronger agreement with the corresponding statement.

For the Digital Leadership construct (A1–A4), the average scores ranged from 3.87 to 4.15, reflecting a consistently positive evaluation of leadership practices associated with digitalization. Indicator A3 produced the highest average score ($M = 4.15$; $SD = 0.61$), implying that respondents perceived digital leaders as effectively facilitating organizational adaptation and supporting digital development initiatives. By comparison, A2 generated the lowest average ($M = 3.87$; $SD = 0.68$), although the result still indicates a positive assessment. The relatively small standard deviation values, varying between 0.61 and 0.72, demonstrate that respondents exhibited a high degree of consensus regarding the implementation of Digital Leadership within their organizations. The Organizational Citizenship Behavior (OCB) construct (B1–B6) produced mean values between 2.87 and 3.50, suggesting a moderate level of voluntary organizational behavior among MSME owners. The highest ratings were obtained for B6 ($M = 3.50$; $SD = 0.84$), followed by B1 ($M = 3.47$; $SD = 0.80$) and B5 ($M = 3.42$; $SD = 0.94$), indicating that respondents generally demonstrated discretionary behaviors that support organizational effectiveness. In contrast, B2 received the lowest average score ($M = 2.87$; $SD = 0.89$), implying that certain dimensions of citizenship behavior remain less evident. Moreover, the comparatively higher standard deviation observed for B3 ($SD = 1.01$) suggests greater variability in respondents' perceptions of OCB than was observed for the other constructs.

Greater diversity was observed within the Digital Transformation construct (C1–C9). Indicators C3 ($M = 3.94$; $SD = 0.80$), C4 ($M = 3.89$; $SD = 0.83$), C8 ($M = 3.90$; $SD = 0.78$), and C9 ($M = 4.00$; $SD = 0.80$) recorded relatively strong evaluations, indicating that respondents believed their businesses had successfully incorporated digital technologies into business operations, responded to technological developments, and strengthened organizational competitiveness. Conversely, C1 ($M = 2.77$; $SD = 0.95$) and C2 ($M = 2.71$; $SD = 0.98$) obtained noticeably lower averages, suggesting that the routine use of digital technologies and digital communication platforms has not yet become a common practice across all participating MSMEs. Even lower mean values were observed for C5 ($M = 1.93$; $SD = 0.72$), C6 ($M = 1.90$; $SD = 0.66$), and C7 ($M = 1.86$; $SD = 0.69$). Because these indicators did not satisfy the required psychometric criteria during the measurement model evaluation, they were subsequently removed from the final model. Their descriptive statistics are therefore presented solely to provide a complete overview of the initial measurement results. Furthermore, the relatively higher standard deviation values associated with C1 and C2 indicate that respondents differed

considerably in their level of digital technology implementation, particularly with respect to the initial stages of digital adoption and the use of digital communication channels. Regarding the MSME Performance construct (D1–D6), the observed mean scores ranged from 3.59 to 3.96, reflecting generally favorable perceptions of organizational performance. The highest evaluation was recorded for D5 ($M = 3.96$; $SD = 0.82$), suggesting that respondents perceived notable improvements in one dimension of business performance. Meanwhile, D4 produced the lowest average score ($M = 3.59$; $SD = 0.77$), indicating that certain performance dimensions were evaluated less positively than others. Overall, the relatively modest standard deviation values, ranging from 0.70 to 0.82, demonstrate that respondents exhibited a relatively consistent assessment of MSME performance across the sampled organizations.

Table 3. Convergent Validity Test

Construct	Indicator	Outer-Loading	AVE	AVE After Deleted	Validity Status
Digital Leadership	A1	0.823	0.709	0.709	Valid
	A2	0.844			Valid
	A3	0.841			Valid
	A4	0.859			Valid
	C1	0.659 ^b			Valid
	C2	0.485 ^b			Valid
	C3	0.864			Valid
Digital Transformation	C4	0.884	0.425	0.747	Valid
	C5	0.120 ^a			Invalid
	C6	0.031 ^a			Invalid
	C7	0.046 ^a			Invalid
	C8	0.918			Valid
	C9	0.878			Valid
	B1	0.787			Valid
OCB	B2	0.803	0.686	0.686	Valid
	B3	0.843			Valid
	B4	0.841			Valid
	B5	0.846			Valid
	B6	0.849			Valid
	D1	0.801			Valid
	D2	0.823			Valid
MSME Performance	D3	0.784	0.629	0.629	Valid
	D4	0.834			Valid
	D5	0.733			Valid
	D6	0.780			Valid

Source: data by SmartPLS 4 (2026). Note: a: Invalid, b: it is recommended to be deleted if it can increase the AVE value (Hair et al 2022).

Convergent validity was evaluated by examining the outer loading of each indicator and the Average Variance Extracted (AVE). Following the recommendation of Hair et al. (2022), indicators with outer loadings above 0.708 are considered satisfactory, while indicators with loadings between 0.40 and 0.70 may be retained if they contribute to the construct's content

validity and the construct demonstrates acceptable reliability and convergent validity. Furthermore, an AVE value of at least 0.50 indicates that a latent construct explains more than half of the variance of its indicators.

As presented in Table 3, the Digital Leadership construct demonstrated satisfactory convergent validity. All four indicators (A1–A4) exhibited outer loadings ranging from 0.823 to 0.859, exceeding the recommended threshold of 0.708. The construct also achieved an AVE of 0.709, confirming that Digital Leadership possesses adequate convergent validity. Similarly, the Organizational Citizenship Behavior (OCB) construct showed strong convergent validity. All six indicators (B1–B6) recorded outer loadings between 0.787 and 0.849, while the AVE reached 0.686, exceeding the minimum recommended value. These findings indicate that all OCB indicators adequately represent the underlying construct. The MSME Performance construct also satisfied the convergent validity criteria. The outer loadings of indicators D1–D6 ranged from 0.733 to 0.834, all above the recommended threshold. Moreover, the construct achieved an AVE of 0.629, indicating that the indicators explain a substantial proportion of the variance in MSME Performance.

The Digital Transformation construct initially exhibited lower convergent validity than the other constructs. While indicators C3, C4, C8, and C9 demonstrated strong outer loadings ranging from 0.864 to 0.918, indicators C5 (0.120), C6 (0.031), and C7 (0.046) failed to meet the minimum loading criterion and were therefore removed from the measurement model. In addition, indicators C1 (0.659) and C2 (0.485) produced moderate outer loadings. According to Hair et al. (2022), indicators with loadings between 0.40 and 0.70 should be evaluated based on their contribution to construct validity and theoretical relevance. After removing indicators C5–C7, the AVE increased substantially from 0.425 to 0.641, indicating an improvement in convergent validity. Subsequently, indicator C2 was also excluded because its removal further increased the AVE to 0.747 and improved both Cronbach's Alpha and Composite Reliability. Indicator C1 was retained despite its moderate loading because it represents the fundamental dimension of digital technology adoption in daily business operations, which is conceptually central to digital transformation (Vial, 2019; Verhoef et al., 2021). The final measurement model therefore consisted of five indicators (C1, C3, C4, C8, and C9), all of which adequately captured the Digital Transformation construct.

Table 4. Fornell-larcker criterion and reliability tests

Construct	CA	CR	1	2	3	4
Digital Leadership	0.863	0.907	0.842			
Digital Transformation	0.906	0.935	0.463	0.864		
OCB	0.883	0.910	0.611	0.547	0.793	
MSME Performance	0.911	0.929	0.272	0.359	0.098	0.827

Notes: The diagonal line (**bold**) is the AVE square root of the correlation between constructs. CA: Cronbach's Alpha. CR: composite reliability. AVE: average variance extracted.

Source: Data by SmartPLS 4 (2026).

Following the confirmation of convergent validity, the measurement model was further examined to determine its reliability and discriminant validity. Reliability was assessed using Cronbach's Alpha (CA) and Composite Reliability (CR), whereas discriminant validity was

evaluated using the Fornell–Larcker criterion. According to Hair et al. (2022), values of Cronbach's Alpha and Composite Reliability exceeding 0.70 indicate adequate internal consistency among the indicators representing each latent construct. To verify discriminant validity, the Fornell–Larcker approach was employed, which requires the square root of the Average Variance Extracted (AVE) for each construct to be higher than its correlations with all other constructs (Fornell & Larcker, 1981). The results summarized in Table 4 demonstrate that all constructs satisfy the recommended reliability standards. The Digital Leadership construct achieved a Cronbach's Alpha of 0.863 and a Composite Reliability of 0.907, confirming a high level of internal consistency. After refining the measurement model by eliminating indicators that failed to meet the required psychometric criteria, the Digital Transformation construct showed a Cronbach's Alpha of 0.906 and a Composite Reliability of 0.935, indicating that the refinement process substantially improved measurement reliability. Similarly, Organizational Citizenship Behavior (OCB) demonstrated strong reliability, with Cronbach's Alpha and Composite Reliability values of 0.883 and 0.910, respectively. Among all latent variables, MSME Performance exhibited the highest level of reliability, producing a Cronbach's Alpha of 0.911 and a Composite Reliability of 0.929. Since every reliability coefficient exceeded the minimum acceptable value of 0.70, the constructs can be regarded as possessing excellent internal consistency.

Discriminant validity was subsequently examined using the Fornell–Larcker criterion, and the findings provide additional evidence supporting the quality of the measurement model. The diagonal elements of the correlation matrix, representing the square roots of the AVE, were 0.842 for Digital Leadership, 0.864 for Digital Transformation, 0.793 for Organizational Citizenship Behavior, and 0.827 for MSME Performance. Each of these values was greater than the corresponding correlations between that construct and all remaining constructs, indicating that the required criterion was fully satisfied. For example, the square root of the AVE for Digital Leadership (0.842) exceeded its correlations with Digital Transformation (0.463), Organizational Citizenship Behavior (0.611), and MSME Performance (0.272). Likewise, the AVE square root for Digital Transformation (0.864) was larger than its relationships with Digital Leadership (0.463), Organizational Citizenship Behavior (0.547), and MSME Performance (0.359). A similar pattern was observed for Organizational Citizenship Behavior, where the square root of the AVE (0.793) surpassed its correlations with Digital Leadership (0.611), Digital Transformation (0.547), and MSME Performance (0.098). Finally, the MSME Performance construct also fulfilled the discriminant validity requirement, with an AVE square root of 0.827, which was greater than its correlations with Digital Leadership (0.272), Digital Transformation (0.359), and Organizational Citizenship Behavior (0.098). Collectively, these results demonstrate that each latent construct is empirically distinguishable from the others because the indicators explain substantially more variance within their respective construct than across different constructs. Therefore, the measurement model exhibits satisfactory discriminant validity, supporting the adequacy of the construct measurement for subsequent structural model analysis.

Table 5. Heterotrait-monotrait ratio (HTMT) for discriminant validity

Heterotrait-monotrait ratio (HTMT)

Digital Transformation <-> Digital Leadership	0.520
MSME Performance <-> Digital Leadership	0.683
MSME Performance <-> Digital Transformation	0.582
OCB <-> Digital Leadership	0.298
OCB <-> Digital Transformation	0.367
OCB <-> MSME Performance	0.152

The discriminant validity of the measurement model was assessed using both the Fornell–Larcker criterion and the Heterotrait–Monotrait Ratio (HTMT). The Fornell–Larcker criterion requires the square root of the Average Variance Extracted (AVE) of each construct to be greater than its correlations with all other constructs, indicating that each latent variable shares more variance with its own indicators than with other constructs in the model (Fornell & Larcker, 1981). As presented in Table 4, the square roots of the AVE were 0.842 for Digital Leadership, 0.864 for Digital Transformation, 0.793 for Organizational Citizenship Behavior (OCB), and 0.827 for MSME Performance. In all cases, these values exceeded the corresponding inter-construct correlations. For example, the square root of the AVE for Digital Leadership (0.842) was greater than its correlations with Digital Transformation (0.463), OCB (0.611), and MSME Performance (0.272). Likewise, the square root of the AVE for Digital Transformation (0.864) exceeded its correlations with Digital Leadership (0.463), OCB (0.547), and MSME Performance (0.359). Similar patterns were observed for OCB and MSME Performance, confirming that each construct possesses adequate discriminant validity according to the Fornell–Larcker criterion.

To further strengthen the assessment, discriminant validity was also examined using the Heterotrait–Monotrait Ratio (HTMT), which has been recommended as a more rigorous and sensitive criterion for evaluating discriminant validity in PLS-SEM (Hair et al., 2022). The HTMT values ranged from 0.152 to 0.683, with Digital Leadership–MSME Performance exhibiting the highest value (0.683) and OCB–MSME Performance the lowest (0.152). All HTMT values were well below the conservative threshold of 0.85, indicating that the latent constructs are empirically distinct and do not suffer from discriminant validity problems. Specifically, the HTMT values were 0.520 between Digital Leadership and Digital Transformation, 0.683 between Digital Leadership and MSME Performance, 0.582 between Digital Transformation and MSME Performance, 0.298 between Digital Leadership and OCB, 0.367 between Digital Transformation and OCB, and 0.152 between OCB and MSME Performance. Therefore, the consistent results obtained from both the Fornell–Larcker criterion and the HTMT analysis provide robust evidence that the constructs in the measurement model adequately capture distinct conceptual domains and satisfy the requirements for discriminant validity.

Table 6. Collinearity statistics (VIF) for multicollinearity

Indicator	VIF	Decision
A1	2,050	Accepted
A2	2,242	Accepted
A3	2,105	Accepted
A4	2,233	Accepted
B1	1,867	Accepted

B2	1,962	Accepted
B3	3,428	Accepted
B4	2,608	Accepted
B5	3,476	Accepted
B6	3,172	Accepted
C1	1,251	Accepted
C3	4,407	Accepted
C4	7,231	Accepted
C8	4,334	Accepted
C9	4,218	Accepted
D1	3,597	Accepted
D2	3,424	Accepted
D3	2,277	Accepted
D4	2,265	Accepted
D5	1,817	Accepted
D6	2,066	Accepted

Source: data by SmartPLS 4 (2026).

Before testing the hypothesized structural relationships, the measurement model was first evaluated for potential multicollinearity among its indicators using the Variance Inflation Factor (VIF). This assessment is important because excessive collinearity may distort parameter estimation by increasing standard errors, reducing the precision of coefficient estimates, and weakening the overall stability of the structural model. Following the recommendations of Hair et al. (2022), VIF values below 5.00 indicate that multicollinearity does not pose a substantial problem, whereas values below 3.30 provide stronger evidence that collinearity is unlikely to affect the estimation results. The VIF statistics presented in Table 6 indicate that all measurement indicators satisfy the recommended threshold, confirming that multicollinearity is not a significant issue in this study. For the Digital Leadership construct, VIF values varied between 2.050 and 2.242, reflecting a relatively low degree of correlation among the indicators. These results indicate that each indicator contributes distinct information in measuring the latent construct, with minimal overlap among the measurement items. A similar pattern was observed for the Organizational Citizenship Behavior (OCB) construct, where VIF values ranged from 1.867 to 3.476. Although indicators B3 (3.428), B5 (3.476), and B6 (3.172) slightly exceeded the more conservative benchmark of 3.30, all remained comfortably below the maximum acceptable limit of 5.00. Consequently, the observed level of collinearity was considered moderate and did not threaten the robustness of the model estimation. Furthermore, these indicators were retained in the analysis because each captures a different conceptual dimension of Organizational Citizenship Behavior, thereby contributing meaningful information to the measurement of the construct despite the moderate intercorrelations observed.

The Digital Transformation construct exhibited VIF values ranging from 1.251 to 4.407. Indicator C1 recorded the lowest VIF (1.251), suggesting minimal overlap with the remaining indicators. Meanwhile, indicators C3 (4.407), C4 (4.231), C8 (4.334), and C9 (4.218)

demonstrated relatively higher VIF values. This finding is expected because these indicators collectively capture closely related aspects of digital transformation, including digital integration, operational digitalization, organizational adaptation to technological change, and enhanced business competitiveness. Despite their relatively high interrelationships, all VIF values remained below the recommended threshold of 5.00, indicating that the shared variance among these indicators was not sufficiently large to threaten the stability or interpretability of the measurement model. For the MSME Performance construct, the VIF values ranged from 1.817 to 3.597. Indicators D1 (3.597) and D2 (3.424) recorded the highest VIF values within this construct, while the remaining indicators ranged between 1.817 and 2.277. Similar to the Digital Transformation construct, these values indicate moderate correlations among the indicators, reflecting that different aspects of MSME performance are naturally associated with one another. Nevertheless, because all VIF values remained below the recommended maximum threshold, the indicators were considered sufficiently distinct to represent the construct without introducing problematic multicollinearity.

Table 7. Common Method Bias Testing

Component	Total Variance Explained					
	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.672	36.533	36.533	7.672	36.533	36.533

Following the recommendation of Podsakoff et al. (2003), Harman's single-factor test was employed by conducting an unrotated exploratory factor analysis on all measurement items. The underlying assumption of this test is that if a single factor accounts for the majority of the total variance (i.e., more than 50%), common method bias may be a serious concern. As presented in Table 7, the first unrotated factor explained 36.533% of the total variance, which is substantially below the recommended threshold of 50%. This result indicates that no single latent factor dominates the covariance among the measurement items, suggesting that the responses were not primarily influenced by common method variance. Therefore, common method bias is unlikely to threaten the validity of the measurement model or substantially bias the estimated relationships among the constructs. Furthermore, this finding provides additional confidence that the observed relationships among Digital Leadership, Organizational Citizenship Behavior, Digital Transformation, and MSME Performance reflect substantive theoretical associations rather than artifacts arising from the data collection method. Consequently, the results suggest that common method bias does not represent a significant issue in the present study, allowing the subsequent structural model analysis to be interpreted with greater confidence (Podsakoff et al., 2003).

Table 8. Structural model test

Construct	Direct Effect	Indirect Effect	Decision	Effect Size
Digital Leadership -> Digital Transformation	0.412 (0.000)		Supported	0.217
OCB -> Digital Transformation	0.287 (0.000)		Supported	0.116
Digital Leadership -> MSME Performance	0.466 (0.000)		Supported	0.330

OCB -> MSME Performance	-0.192 (0.000)	Not-Supported	0.060
Digital Transformation -> MSME Performance	0.400 (0.000)	Supported	0.205
Digital Leadership -> Digital Transformation -> MSME Performance	0.165 (0.000)	Supported	
OCB -> Digital Transformation -> MSME Performance	0.115 (0.000)	Supported	
R ²	0.273	0.487	

Notes: n=220. Source: data by SmartPLS 4 (2026).

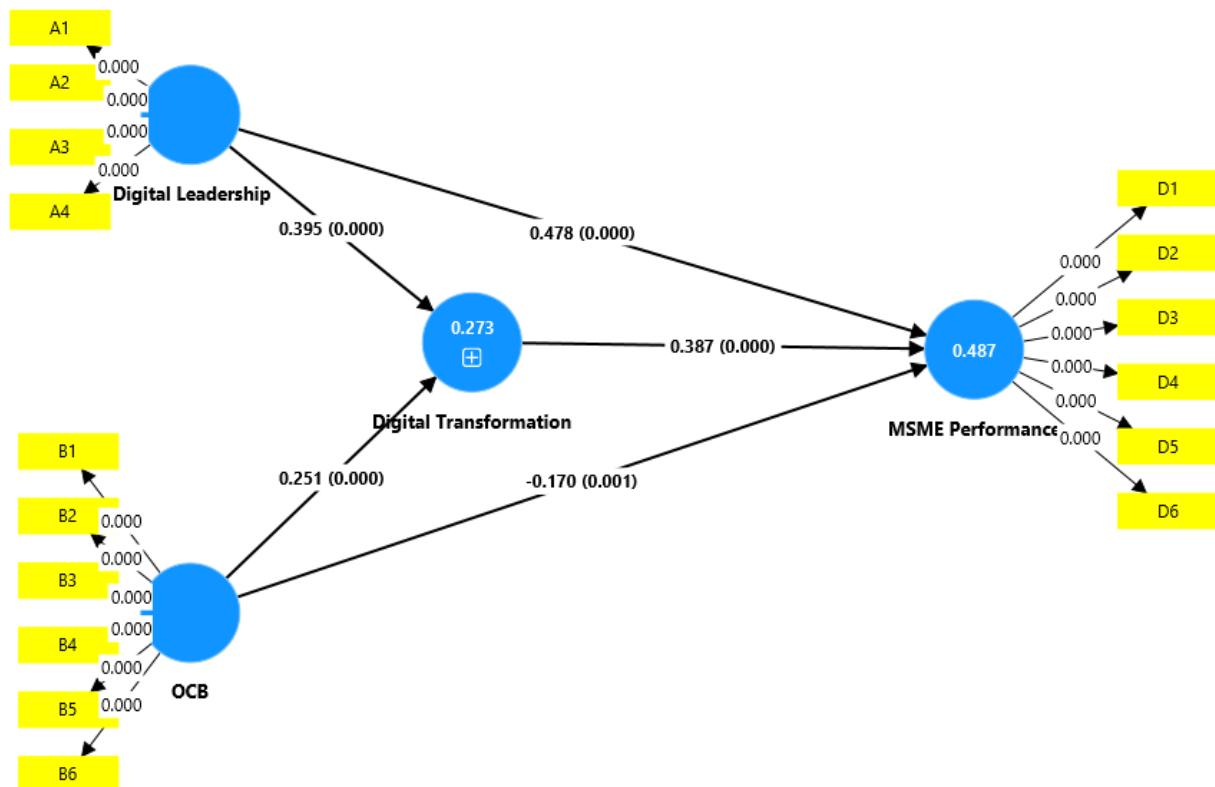
After the measurement model was confirmed to meet the required psychometric standards, the structural model was analyzed to evaluate the proposed research hypotheses. The assessment focused on estimating the direct and indirect relationships among the latent variables, together with the model's explanatory capability (R^2) and the magnitude of each predictor's contribution (f^2). Statistical significance was determined using the bootstrapping procedure with 5,000 resampling iterations. As summarized in Table 7, the empirical findings support six of the seven proposed hypotheses. One hypothesized direct relationship was rejected because, although statistically significant, the estimated coefficient was in the opposite direction from that predicted by the conceptual framework. The analysis shows that Digital Leadership exerts a positive and statistically significant influence on Digital Transformation ($\beta = 0.412$, $p < 0.001$), providing support for H1. The associated effect size ($f^2 = 0.217$) indicates that Digital Leadership makes a moderate contribution to explaining variation in Digital Transformation. A similar pattern is observed for Organizational Citizenship Behavior (OCB), which also demonstrates a positive and significant effect on Digital Transformation ($\beta = 0.287$, $p < 0.001$), thereby confirming H2. However, its contribution is comparatively weaker, as reflected by an effect size of 0.116.

With respect to MSME Performance, Digital Leadership remains a significant determinant, exhibiting a positive direct effect ($\beta = 0.466$, $p < 0.001$). This finding provides empirical support for H3 and identifies Digital Leadership as the most influential direct predictor in the proposed model, as evidenced by its relatively large effect size ($f^2 = 0.330$). Conversely, Organizational Citizenship Behavior demonstrates a statistically significant but negative relationship with MSME Performance ($\beta = -0.192$, $p < 0.001$). Because the observed direction contradicts the positive association proposed in the hypothesis, the corresponding hypothesis cannot be accepted despite its statistical significance. Moreover, the calculated effect size ($f^2 = 0.060$) indicates that the direct influence of OCB on organizational performance is relatively weak. The results further reveal that Digital Transformation positively contributes to MSME Performance ($\beta = 0.400$, $p < 0.001$), providing support for H4. The corresponding effect size ($f^2 = 0.205$) suggests a moderate level of explanatory contribution, indicating that Digital Transformation plays an important role in improving organizational outcomes.

The mediation analysis provides additional insights into the underlying mechanisms linking the study variables. The indirect effect of Digital Leadership on MSME Performance through Digital Transformation is positive and statistically significant ($\beta = 0.165$, $p < 0.001$), thereby

supporting H5. Likewise, Digital Transformation significantly mediates the relationship between Organizational Citizenship Behavior and MSME Performance, with an indirect coefficient of 0.115 ($p < 0.001$). This finding suggests that although OCB does not generate a positive direct impact on organizational performance, it enhances MSME performance indirectly by strengthening the implementation of Digital Transformation. Overall, these findings underscore the strategic role of Digital Transformation as a key organizational mechanism through which leadership capability and employee discretionary behavior are translated into improved business performance.

Figure 2. Graphical output SmartPLS 4.



4.2. Discussion

The results of this research offer a deeper understanding of how organizational capabilities shape the performance of Micro, Small, and Medium Enterprises (MSMEs) in an increasingly digital business environment. From the perspective of Dynamic Capabilities Theory, organizational success is achieved not simply through the acquisition of digital technologies but through the organization's capacity to continuously sense environmental changes, reconfigure internal resources, and deploy those resources effectively to address evolving market conditions (Teece, 2018). Similarly, the Resource-Based View (RBV) proposes that long-term competitive advantage stems from strategic organizational assets that are valuable, rare, difficult to imitate, and supported by appropriate organizational systems rather than from technological investments alone (Barney, 1991). Consistent with these theoretical foundations, the findings reveal that digital leadership and organizational capabilities do not contribute to MSME performance in identical ways. Instead, digital transformation serves as a critical intermediary process that enables these organizational strengths to be converted into improved business performance.

The structural model further indicates that Digital Leadership exerts a significant positive effect on both Digital Transformation and MSME Performance. This finding highlights the central role of leaders in guiding organizations through digital change and supporting organizational adaptation to rapidly evolving technologies. In line with Dynamic Capabilities Theory, digital leaders are expected to identify emerging technological opportunities, coordinate organizational resources, and redesign business processes to maintain organizational competitiveness in dynamic environments. Their responsibilities extend beyond implementing digital technologies; they also cultivate innovation, strengthen organizational learning, and establish a strategic direction that supports successful digital transformation initiatives. Furthermore, the positive direct influence of Digital Leadership on organizational performance reinforces the Resource-Based View by suggesting that leadership itself represents a strategic organizational capability capable of generating competitive advantage. These findings are consistent with previous empirical evidence demonstrating that digital leadership strengthens organizational performance by enhancing strategic decision-making and accelerating digital innovation (Mollah et al., 2024; Saddique et al., 2023). In addition, Cyfert et al. (2025) and Shin et al. (2023) emphasize that the effectiveness of digital leadership increases when technological initiatives are accompanied by employee readiness, organizational learning, and supportive internal capabilities. Interestingly, unlike several earlier studies that identified only an indirect relationship between digital leadership and organizational performance, the present study demonstrates a significant direct effect within MSMEs operating in Kampar Regency. One possible explanation is the managerial characteristics of Indonesian MSMEs, where business owners commonly perform multiple roles simultaneously as organizational leaders, operational managers, and strategic decision-makers. Such centralized authority enables leadership decisions to be translated rapidly into organizational actions, thereby producing a more immediate impact on business performance. A noteworthy finding of this study is that Organizational Citizenship Behavior (OCB) does not directly enhance MSME Performance, despite exhibiting a significant positive influence on Digital Transformation. This result contrasts with many previous studies that have reported a direct positive contribution of OCB to organizational performance (Margahana, 2020; Saryadi et al., 2024). From the perspective of the Resource-Based View (RBV), OCB represents an intangible organizational asset that fosters collaboration, mutual trust, and knowledge exchange among employees. Nevertheless, the present findings suggest that these voluntary and discretionary behaviors alone are insufficient to produce measurable improvements in organizational outcomes. Rather than acting as a direct performance driver, OCB appears to strengthen the organizational environment needed to support digital transformation, which subsequently leads to better business performance.

This evidence implies that employees' willingness to go beyond their formal responsibilities creates value only when such behaviors facilitate organizational change through digitalization. Activities such as voluntarily sharing technological knowledge, assisting colleagues in adopting digital applications, or actively supporting organizational initiatives do not immediately increase profitability, productivity, or sales. Instead, these behaviors become strategically valuable when they accelerate the implementation of digital business practices. For instance, employees who proactively develop digital competencies can facilitate the adoption of social media marketing, improve the utilization of digital payment platforms, strengthen customer relationship management through online channels, support digital inventory systems, and encourage the effective use of e-commerce platforms. These

organizational improvements subsequently contribute to greater operational efficiency, broader market access, higher service quality, and stronger competitive positioning. Consequently, the contribution of OCB to organizational success is realized indirectly through its ability to facilitate digital transformation rather than through discretionary behavior itself. The institutional characteristics of Indonesian MSMEs may further explain this finding. Because most MSMEs operate with centralized and owner-driven management structures, strategic decisions, technological investments, and resource allocation remain largely concentrated in the hands of business owners. As a result, employee initiatives, regardless of their quality, cannot substantially improve organizational performance unless they receive strategic support and are incorporated into broader digital transformation programs. Within this context, OCB functions primarily as an organizational capability that enhances readiness for change and supports transformation initiatives instead of serving as an independent determinant of organizational performance. Another major contribution of this study concerns the strategic importance of Digital Transformation. The empirical results demonstrate that Digital Transformation not only exerts a significant positive influence on MSME Performance but also serves as the mechanism through which both Digital Leadership and Organizational Citizenship Behavior create organizational value. This finding reinforces the central argument of Dynamic Capabilities Theory, which maintains that organizational resources and capabilities generate competitive advantage only when they are effectively integrated into organizational processes and strategic actions. Accordingly, digital transformation should not be interpreted merely as the introduction of digital technologies but as a comprehensive process of organizational renewal involving changes in business models, operational workflows, decision-making systems, customer engagement, and internal coordination. Although many MSMEs have already implemented technologies such as online marketplaces, social media platforms, and digital payment applications, these practices largely represent digital adoption rather than genuine digital transformation. Authentic transformation requires organizations to redesign core business processes, improve data-driven decision-making, strengthen customer relationship management, optimize internal coordination, and establish systematic performance monitoring supported by digital technologies (Guo & Xu, 2021). The significant mediating effect observed in this study therefore indicates that both leadership capability and employees' discretionary behaviors improve organizational performance because they enable these deeper organizational changes. In this regard, Digital Transformation operates as the critical organizational mechanism that converts intangible resources—including leadership competence and employees' extra-role behaviors—into tangible business outcomes.

The findings further indicate that the benefits of Digital Leadership and OCB are unlikely to materialize if organizations fail to embed digital practices into their daily operations. The implementation of digital marketing strategies, integrated digital payment systems, online customer relationship management, digital inventory control, and technology-enabled operational processes constitutes the practical pathway through which organizational capabilities create economic value. Therefore, employee commitment and leadership capability should be viewed as foundational resources whose effectiveness depends on the organization's ability to integrate them into comprehensive digital transformation initiatives. These results are consistent with previous empirical studies demonstrating that the performance benefits of digital leadership are contingent upon successful digital transformation processes (Senadjki et al., 2024; Chen et al., 2024; Mollah Ibrahim et al., 2024;

Lyu, 2024). Similarly, Zavrzhnyi and Kulyk (2023) argue that sustainable digital transformation requires strategic leadership, continuous organizational learning, systematic capability development, and long-term investment in organizational resources. Taken together, the present findings suggest that digital transformation should be conceptualized as a dynamic organizational capability that continuously reshapes organizational resources and business processes rather than as a one-time technological implementation. The findings of this study also generate several practical implications for both MSME practitioners and policymakers responsible for supporting digital economic development. The results suggest that initiatives aimed at promoting digitalization should not be confined to increasing the adoption of digital technologies alone. Instead, greater emphasis should be placed on strengthening the organizational capabilities required to sustain digital transformation over the long term. Existing government support programs frequently prioritize the introduction of digital tools, such as e-commerce platforms, digital payment applications, and social media marketing. However, the present findings indicate that technological adoption by itself does not necessarily translate into superior organizational performance. Sustainable performance improvements require complementary investments in leadership capability, organizational learning, employee participation, and the development of internal competencies that enhance an organization's capacity to adapt to continuous technological change.

The findings further highlight the importance of designing leadership development initiatives that equip MSME owners with strategic managerial competencies rather than focusing solely on digital literacy. Effective digital leadership requires the ability to manage organizational change, formulate innovation-oriented strategies, and make data-driven decisions that align technological investments with business objectives. In parallel, organizations should cultivate a work environment that promotes collaboration, knowledge sharing, and discretionary employee behaviors associated with Organizational Citizenship Behavior (OCB). Although OCB was not found to have a direct influence on organizational performance, it plays an essential role in facilitating successful digital transformation, which subsequently enhances business outcomes. Collectively, these findings emphasize that long-term competitiveness among MSMEs is achieved through the integration of technological advancement with the continuous development of human capital and organizational capabilities.

5. Conclusion and Suggestion

This study investigated how Digital Leadership, Organizational Citizenship Behavior (OCB), and Digital Transformation interact to influence the performance of Micro, Small, and Medium Enterprises (MSMEs). The empirical evidence reveals that Digital Leadership significantly strengthens both Digital Transformation and organizational performance, confirming that leadership capability is a strategic organizational asset for sustaining competitiveness in an increasingly digital business environment. Conversely, Organizational Citizenship Behavior does not exert a direct influence on MSME performance, even though it plays a significant role in accelerating Digital Transformation. These findings indicate that employees' voluntary behaviors contribute to business success indirectly by creating a supportive organizational environment for digital transformation rather than by immediately improving organizational outcomes. Accordingly, Digital Transformation functions as the key organizational pathway through which leadership capability and employees' collaborative behaviors are converted into measurable performance gains.

The study also offers important theoretical contributions by providing empirical support for both the Resource-Based View (RBV) and Dynamic Capabilities Theory. The findings demonstrate that superior organizational performance cannot be explained solely by investments in digital technologies. Instead, sustainable competitive advantage emerges when organizations effectively combine leadership capability, employee behavioral resources, and the continuous reconfiguration of strategic organizational assets. A further contribution of this study is the clear distinction between digital adoption and digital transformation. While many MSMEs have introduced technologies such as online marketplaces, social media marketing, and digital payment applications into their operations, these initiatives largely reflect the adoption of digital tools rather than comprehensive organizational transformation. True digital transformation requires substantial changes in organizational structures and business processes, including customer relationship management, managerial decision-making, employee coordination, operational workflows, and performance evaluation systems. Consequently, simply adopting digital technologies is unlikely to produce lasting competitive benefits unless those technologies are integrated with organizational capability development and supported by strong strategic leadership.

The practical implications of these findings are relevant for both MSME owners and public policymakers. For business managers, digitalization should be approached as a long-term organizational strategy rather than a purely technological initiative. Efforts to strengthen Digital Leadership should therefore extend beyond improving digital literacy by emphasizing strategic vision, organizational innovation, continuous employee learning, and the development of a collaborative organizational culture capable of supporting change. Similarly, initiatives aimed at fostering Organizational Citizenship Behavior should encourage knowledge sharing, employee commitment, mutual trust, and cooperation, as these behaviors establish the organizational conditions necessary for successful digital transformation. From a policy perspective, programs designed to accelerate MSME digitalization should not be limited to expanding the use of social media, digital marketplaces, or e-commerce platforms. Instead, government support should incorporate leadership development, organizational capability enhancement, change management, and practical digital skill development into digitalization initiatives. By integrating technological advancement with human and organizational capability development, policymakers can promote more sustainable improvements in MSME performance and ensure that digital technologies become embedded within core organizational processes rather than serving merely as supporting operational instruments.

6. Limitations and Future Research

Several limitations should be acknowledged when interpreting the findings of this study. The first concerns the use of a cross-sectional research design, which captures organizational conditions at a single point in time. As a result, the study is unable to examine how Digital Leadership, Organizational Citizenship Behavior (OCB), Digital Transformation, and MSME Performance develop or interact throughout different stages of organizational growth. Considering that digital transformation represents a continuous organizational journey rather than a one-time initiative, future research should employ longitudinal approaches to provide a deeper understanding of the temporal relationships among these constructs and to identify how organizational capabilities influence performance over extended periods. Another limitation relates to the geographical scope of the research. The empirical analysis was

conducted exclusively among MSMEs located in Kampar Regency, Indonesia. Although this setting offers valuable insights into the digitalization process within MSMEs operating in a developing regional economy, the findings may not fully represent organizations operating under different institutional, technological, or socioeconomic conditions. Variations in digital infrastructure, government support, market characteristics, and technological readiness across regions may produce different organizational outcomes. Accordingly, future investigations should consider comparative studies involving multiple provinces or cross-national samples to examine whether the observed relationships remain consistent across diverse business environments.

Furthermore, while the proposed research model explains a considerable proportion of the variance in MSME Performance, organizational success is influenced by a wider range of strategic resources and contextual factors than those examined in this study. Future research would benefit from expanding the conceptual framework by incorporating additional organizational capabilities, including innovation capability, entrepreneurial orientation, organizational learning, absorptive capacity, digital capability, organizational resilience, institutional support, and environmental dynamism. Integrating these constructs into future models would provide a more comprehensive explanation of the mechanisms through which organizations develop competitive advantage and achieve superior performance during digital transformation. A final issue concerns the conceptual distinction between digital adoption and digital transformation. Many MSMEs have introduced digital technologies into their business activities; however, the implementation of digital tools alone does not necessarily indicate that organizations have undergone comprehensive digital transformation. Genuine transformation requires fundamental changes in organizational processes, customer engagement practices, managerial decision-making, internal coordination, and performance management systems. Future studies should therefore investigate different stages of digital maturity to better understand how organizations progress from initial technology adoption toward fully integrated digital business models. Such evidence would not only enrich the theoretical understanding of digital transformation but also provide practical guidance for policymakers in designing digitalization initiatives that extend beyond technology deployment. Effective policy interventions should simultaneously strengthen leadership capability, organizational readiness, employee engagement, and implementation quality to ensure that digital transformation produces sustainable improvements in MSME competitiveness and long-term organizational performance.

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