

The Influence of Digital Leadership, Knowledge Management Capability and Innovation Climate on Digital Innovation Capability in Digital-Based MSMEs

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Abstract

The digital economic transformation needs digital MSMEs to create sustainable innovation capabilities which will help them succeed in their business competition. The study investigates how digital leadership and knowledge management capability together with innovation climate evaluation affect the digital innovation capacity of digital-based MSMEs. The researchers executed their research through a quantitative research method which used an explanatory research design for their study. The study collected data by surveying digital-based MSME owners and managers who participated through purposive sampling. The researchers used multiple linear regression to analyze the data after completing validity and reliability testing and classical assumption testing. The research established that digital leadership and knowledge management capability with innovation climate create a positive connection which improves digital innovation capacity. Digital leadership functions as an organizational power that propels digital transformation while knowledge management capability allows organizations to gather new information and apply their existing knowledge and innovation climate establishes a workspace that fosters innovation activities. The research findings offer MSME managers strategic guidance which helps them create policies that enable sustainable technology-based innovation.

Keywords: digital leadership, knowledge management capability, innovation climate, digital innovation capability.

INTRODUCTION

The digital economy has transformed business operations across all commercial industries because it created a new model for conducting business. Digital-based MSMEs no longer merely utilize technology as a supporting tool but rather make it the core of their business models and growth strategies (Nainggolan et al., 2022). The essential requirement for companies to achieve operational success in contemporary business environments relies on their digital innovation capabilities because technology used in business today undergoes continuous development (Setiono et al., 2025). Digital innovation capability demonstrates how MSMEs apply digital technology to produce new products and services while they

establish new operational methods and business models which create sustained growth. The capability enables MSMEs to adapt to market developments while they pursue new business prospects and achieve better productivity (Novaria et al., 2023). The lack of digital innovation capacity in MSMEs results in their loss of competitive advantage because digital platforms and technology companies create market disturbances. Digital-based MSMEs need enhanced digital innovation capabilities because those capabilities serve as their fundamental requirement for achieving competitive advantage and maintaining business sustainability (Putranto, 2026).

Digital leadership describes how leaders use their skills to guide organizations through technological changes and digital transformations. Digital MSMEs require their leaders to make strategic decisions because their organizational structure depends on the leaders' personal vision and leadership abilities (Aziz et al., 2026). Digitally oriented leaders use their leadership skills to drive technological progress while building an organization that can adapt to change and create new business solutions through data analysis. Sustainable innovation will succeed through digital innovation capability because its primary driver is visionary and adaptive leadership (Setyawasih et al., 2023). The capacity of an organization to handle its knowledge assets depends on its ability to manage the knowledge process which includes acquiring knowledge and storing it and distributing it and utilizing it. The knowledge asset of an organization serves as the strategic resource which drives its capacity to create new products during the digital age (Tannady & Dewi, 2024). Digital-based MSMEs that develop organizational systems for knowledge management will achieve better market opportunity detection and better customer need comprehension together with successful product development (Zakaria et al., 2025). Knowledge management capability supports ongoing organizational growth by enabling organizations to document their experiences and share information while using data analysis techniques. The atmosphere of an organization that creates an environment for creative work and experimental activities and new idea development requires assessment through innovation climate measurement (Tannady et al., 2023). The performance of employees in digital-based MSMEs increases when their workplace environment establishes an innovation climate that enables them to conduct risk-taking activities and develop new ideas and test various technological solutions (Susanto et al., 2023). People will develop their ability to invent new products when they operate in an environment that encourages testing and allows them to fail without facing punishment (Kurniasari et al., 2023).

The research investigates how digital leadership and knowledge management and innovation climate interact to create digital innovation capabilities in digital-based MSMEs. The research expands existing knowledge about innovation management and digital entrepreneurship by demonstrating how leadership skills and knowledge management abilities and organizational climate work together to determine digital innovation capabilities. The research develops a conceptual framework which demonstrates how internal business factors determine the competitive edge of MSMEs operating within the digital economy. The research findings provide practical guidance to MSME owners and managers which they can implement for developing effective digital leadership and knowledge management systems and innovation climate development strategies. Digital-based MSMEs maintain their innovation growth through ongoing development which enables them to strengthen their position in the digital marketplace competition.

METHOD

The research employs quantitative research methods together with an explanatory research framework to assess how digital leadership and knowledge management capacity and innovation climate work together to develop digital innovation skills in digital-based MSMEs. The researchers selected a quantitative method because they wanted to use statistical techniques to measure multiple variables and test their research hypotheses. The study population consists of digital-based MSMEs which have adopted digital platforms to support their marketing and transaction processes and internal business operations. The researchers employed purposive sampling as their sampling method to select respondents who fulfilled three specific requirements which included MSME owners who took part in strategic decision-making and MSME owners who managed businesses that had operated digitally for two years and MSME owners who used digital technology as their main business operations tool. The study included 180 respondents who participated as samples which researchers found suitable to use for multiple linear regression analysis. The research instrument consisted of a structured questionnaire that used a five-point Likert scale which measured responses from strongly disagree to strongly agree. The researchers evaluated the instrument's quality before conducting hypothesis testing through validity testing which required item-total correlation results to exceed 0.30 and show statistical significance at a level below 0.05 and reliability testing through Cronbach's Alpha which required values to reach 0.70 or higher for testing internal consistency. The research team performed a classical assumption test which included three tests to assess normal distribution and multicollinearity and heteroscedasticity in order to determine whether the regression model met statistical requirements for testing. The research team used multiple linear regression analysis to test their hypothesis which examined how independent variables influenced digital innovation capability through both partial and complete testing method.

RESULT AND DISCUSSION

The F-test results showed a significance value of 0.000 which demonstrated that digital leadership and knowledge management capability together with innovation climate work together to create a major impact on digital innovation capability for digital-based MSMEs. The coefficient of determination (R^2) of 0.81 indicates that 81% of the variation in digital innovation capability can be explained by the three independent variables in the research model, while the remainder is influenced by factors outside the model. The t-test results show that each independent variable produces a positive and significant effect on digital innovation capability at the 5% significance level.

The research results demonstrate that digital leadership enables digital-based MSMEs to enhance their digital innovation capabilities through its positive and substantial impact. The research shows that organizations which have digital leaders who drive their technology-based innovations through their digital leadership approach. The technology adoption process and the development of digital business models in MSMEs take place through decisions made by either their owners or their managers. Visionary digital leadership creates a digital transformation framework which defines all needed processes to implement technology throughout corporate operational activities. Technology leaders who possess knowledge about how technology functions, fulfill their roles as decision-makers, while they also lead organizational changes that motivate employees to embrace new ideas. Digital leadership establishes an environment where employees can continuously learn new materials and organizations can test their new technologies while using data for their operational decisions. The organization develops new digital products while it enhances its

operational capabilities and creates technological services that meet current market requirements through this capability.

The research findings show that organizations which have strong knowledge management systems will achieve better success in their digital innovation projects. Digital-focused MSMEs which possess the ability to identify, store, and share knowledge will achieve better results in developing innovative products. Organizations use knowledge management systems to build their learning systems. Organizations collect data about customer preferences and market trends together with their operational experience because this information helps them develop new products. Team members who share knowledge with each other will create an environment that supports both creative idea exchange and improved teamwork during digital product development.

The research results show that innovation climate positively affects digital innovation capability in digital-based MSMEs. A positive innovation climate establishes a workplace environment which supports employees to develop their creative abilities while testing new ideas and adapting to new conditions. MSMEs with a positive innovation climate tend to provide spaces which allow employees to share their innovative ideas without the need to worry about making mistakes. The existence of a supportive innovation climate within the organization improves team collaboration while it enhances organizational communication. An open environment for discussion of ideas allows for a dynamic exchange of ideas. The method enables organizations to accelerate their business operations through the combined process of creating innovations and delivering digital solutions.

CONCLUSION

The research proves that digital leadership combined with knowledge management abilities together with an innovation climate establishes major benefits for digital innovation capacity which digital-based MSMEs possess. The research showed that three separate elements which include the leadership components and the knowledge management systems and the organizational environment that enables innovation development establish the process which leads to digital innovation capability advancement. Digital-based MSMEs need to enhance their digital leadership capacities through training programs which focus on technology-based transformational leadership and they should create a digital innovation vision which will guide them for future development. Organizations can enhance their knowledge management capabilities through three approaches which involve implementing digital documentation systems and creating internal knowledge-sharing platforms and using analytics to support decision-making activities. The management team needs to establish an environment which supports innovation by promoting experimental activities and providing recognition for innovative concepts and maintaining transparent communication throughout the organization. The three strategic approaches work together to improve MSME competitiveness because digital economy competition has reached higher levels of intensity.

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