Analysis of the Impact of ChatGPT Usage and Digital Competence on the Development of Innovative Ideas in MSME Management

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ABSTRACT

The development of digital technology has transformed various aspects of life, including the business and management sectors. ChatGPT, a natural language-based artificial intelligence model, has significant potential in assisting MSMEs in managing various aspects of their business. This study aims to provide a deeper understanding of the impact of ChatGPT usage and digital competence on the development of innovative ideas in MSME management. This research is a literature review with a qualitative approach. Data were collected from scholarly articles published on Google Scholar from 2018 to 2024. The study results indicate that the use of ChatGPT and the enhancement of digital competence have a significant impact on the development of innovative ideas in MSME management. Through case studies of Warung Pintar, Go-Food, TaniHub, and Tokopedia, it is evident that digital technology and artificial intelligence can improve operational efficiency, expand market reach, and increase customer satisfaction. Adequate digital competence enables entrepreneurs to maximize the use of this technology, resulting in relevant and beneficial innovations for their businesses.

ABSTRAK

Perkembangan teknologi digital telah mengubah berbagai aspek kehidupan, termasuk dalam dunia bisnis dan manajemen. ChatGPT, sebagai model kecerdasan buatan berbasis bahasa alami, memiliki potensi besar dalam membantu UMKM mengelola berbagai aspek bisnis mereka. penelitian ini bertujuan untuk memberikan pemahaman yang lebih mendalam mengenai dampak penggunaan ChatGPT dan kompetensi digital terhadap pengembangan ide-ide inovatif dalam manajemen UMKM. Penelitian ini merupakan tinjauan pustaka dengan pendekatan kualitatif. Data diambil dari artikel-artikel ilmiah yang dipublikasikan di Google Scholar dalam rentang waktu 2018-2024. Hasil studi menunjukkan bahwa penggunaan ChatGPT dan peningkatan kompetensi digital memiliki dampak signifikan terhadap pengembangan ide-ide inovatif dalam manajemen UMKM. Melalui studi kasus Warung Pintar, Go-Food, TaniHub, dan Tokopedia, terlihat bahwa teknologi digital dan kecerdasan buatan dapat meningkatkan efisiensi operasional, memperluas pasar, dan meningkatkan kepuasan pelanggan. Kompetensi digital yang memadai memungkinkan pengusaha untuk memanfaatkan teknologi ini secara maksimal, menghasilkan inovasi yang relevan dan bermanfaat bagi bisnis mereka.

1. INTRODUCTION

The development of digital technology has transformed various aspects of life, including the world of business and management. In Indonesia, Micro, Small, and Medium Enterprises (MSMEs) play a crucial role in the national economy, significantly contributing to job creation and gross domestic product (Sutrisno, Wibowo, et al., 2024). However, in this digital era, MSMEs face significant challenges in adopting technology to enhance efficiency and competitiveness. One technological innovation that can be utilized by MSMEs is ChatGPT, an artificial intelligence model developed by OpenAI.

ChatGPT, as a natural language-based artificial intelligence model, has great potential in helping

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MSMEs manage various aspects of their business. ChatGPT can be an effective tool in improving the operational efficiency of MSMEs by responding to customer inquiries, providing product recommendations, and analyzing sales data (Subagja et al., 2023). For example, in customer relationship management, ChatGPT can respond to customer questions and complaints in real-time, providing a better experience and increasing customer satisfaction.

However, the utilization of ChatGPT and other digital technologies by MSMEs is closely linked to the digital competence of entrepreneurs. Digital competence includes the ability to use management software, understand data analytics, and implement digital marketing strategies. Entrepreneurs with high digital competence tend to be more innovative and capable of adopting new technologies more effectively (Ausat et al., 2022; Subagja et al., 2022). In Indonesia, improving digital competence is one of the main challenges that need to be addressed to maximize the potential of technology in MSME management.

The use of ChatGPT can significantly enhance the efficiency and productivity of MSMEs. Several studies have found that ChatGPT can reduce the time needed to complete administrative tasks and improve customer satisfaction. For instance, a study showed that the use of ChatGPT in customer management could increase customer satisfaction by 20% (Sudirjo, Diantoro, et al., 2023). Another study indicated that using ChatGPT could reduce the administrative workload by up to 30%, allowing entrepreneurs to focus on the strategic aspects of their business (Harahap et al., 2023).

Additionally, digital competence plays a vital role in the successful adoption of technology by MSMEs. Entrepreneurs with high digital competence are more likely to explore and utilize new technologies to enhance their business performance (Ausat & Peirisal, 2021). Research shows that high digital competence correlates with increased innovation in MSMEs, which is a key factor in business sustainability and growth (Ausat & Suherlan, 2021).

In Indonesia, despite increasing internet penetration and the use of digital devices, many MSMEs have not yet optimally utilized digital technology. Factors such as low digital literacy and limited access to training and resources are major obstacles (Sutrisno, Prabowo, et al., 2024). Efforts to improve the digital competence of MSME entrepreneurs are crucial to ensuring they can fully leverage technologies like ChatGPT.

The socio-economic context of Indonesia also affects the ability of MSMEs to innovate and adopt new technologies. Many MSMEs in Indonesia operate in challenging environments, such as limited access to capital, competitive markets, and often complex regulations (Nugroho, 2023). In such conditions, the ability to innovate and leverage new technologies becomes essential. ChatGPT and improved digital competence can provide effective solutions to some of these challenges, enabling MSMEs to enhance operational efficiency, develop innovative ideas, and compete in broader markets.

Therefore, this research aims to provide a deeper understanding of the impact of using ChatGPT and digital competence on the development of innovative ideas in MSME management. By utilizing a literature review, this study will identify existing trends, challenges, and opportunities, as well as provide recommendations that can help MSMEs leverage digital technology to improve their performance and competitiveness.

2. THEORETICAL FRAMEWORK AND HYPOTHESES
ChatGPT
ChatGPT is an artificial intelligence model developed by OpenAI, designed to generate text based on input provided in natural language (Sudirjo, Ausat, et al., 2023). Utilizing deep learning techniques, particularly the Transformer architecture, ChatGPT is trained on a vast amount of textual data to understand and mimic writing styles and content relevant to user requests. ChatGPT can be used in various applications such as customer service, content creation, virtual assistants, and data analysis, helping to enhance efficiency and productivity across different fields, including business and MSME management, with its ability to understand context and provide coherent responses (Ausat, Azzaakiyyah, et al., 2023).

Digital Competence
Digital competence is the ability of individuals to use information and communication technology effectively and efficiently in various contexts (Spante et al., 2018). It includes skills in using hardware and software, accessing and managing digital information, communicating and collaborating online, and understanding and applying digital security. Digital competence also involves critical thinking in evaluating digital re-

sources and solving problems using technology (Załoga & Bryczek-Wróbel, 2023). In a business context, digital competence enables entrepreneurs to optimize operational processes, develop digital marketing strategies, and innovate by leveraging the latest technological tools.

Innovative Ideas

Innovative ideas are new concepts or notions that offer creative and effective solutions to existing problems or needs and have the potential to create added value (Zhang, 2022). These ideas often combine original thinking with new technology or methods to improve products, services, processes, or business models. In the context of MSMEs, innovative ideas can help businesses compete more effectively, enhance operational efficiency, expand markets, and meet customer needs more effectively. Innovative ideas are the primary driving force in fostering business growth and sustainability in dynamic and competitive environments (Sahil Sagar, 2023).

MSME Management

MSME management involves the process of managing micro, small, and medium enterprises, encompassing various operational, strategic, and administrative aspects to ensure business continuity and growth (Nasser, 2022). This includes business planning, resource organization, financial control, marketing, production management, and human resource management. In MSME management, owners or managers must be able to address specific challenges such as limited capital, restricted market access, and the need for continuous innovation. The use of digital technology and the enhancement of managerial competence are often key to optimizing performance and competitiveness in a competitive market (Sutrisno, Susanti, et al., 2024).

3. RESEARCH METHOD

This research is a literature review with a qualitative approach aimed at analyzing the impact of using ChatGPT and digital competence on the development of innovative ideas in MSME management. In this study, descriptive analysis is used to illustrate findings from various relevant sources. Data are collected from scholarly articles published on Google Scholar between 2018 and 2024. The data collection process involves using specific keywords related to the research topic, such as "ChatGPT," "MSME Management," "Digital Competence," and "Innovative Ideas for MSMEs." From the initial search results, 44 articles relevant to the research topic are obtained. Each article is then evaluated based on strict selection criteria, including relevance to the research topic, the quality of the methodology used, and the contribution of the article to the understanding of the impact of ChatGPT and digital competence in MSME management. After the selection process, 26 articles deemed most relevant and of high quality are chosen for further analysis. Descriptive analysis is used to interpret and present the data obtained from the 26 selected articles. Each article is analyzed to identify key findings related to the impact of using ChatGPT and digital competence on the development of innovative ideas in MSME management. The results of the analysis are then synthesized to provide a comprehensive overview of the research topic. A qualitative approach is used to understand the context, perspectives, and experiences reported in the analyzed articles. This approach focuses on gaining a deep understanding of the phenomena being studied rather than on statistical measurement or generalizing the findings. The research is expected to provide in-depth and comprehensive insights into how the use of ChatGPT and digital competence can influence the development of innovative ideas in MSME management and provide relevant recommendations for entrepreneurs, policymakers, and academics using this method.

4. DATA ANALYSIS AND DISCUSSION

The use of digital technology in MSME management has become a significant focus in recent years, especially with innovations like ChatGPT. ChatGPT, as a natural language-based artificial intelligence model, offers extensive benefits for MSMEs, such as improved operational efficiency, better customer management, and support in strategic decision-making (Ausat, Rachman, et al., 2023). This technology can help MSMEs automate various processes, process customer data, and perform real-time market analysis. However, the success of adopting technologies like ChatGPT heavily depends on the digital competence of entrepreneurs. This competence includes the ability to understand, operate, and effectively utilize technology, which is a crucial factor in how well this technology can be integrated into business practices and used to support innovation.

 One prominent case study is PT. Warung Pintar, a startup in Indonesia that has successfully inte-

grated digital technology to empower traditional kiosks. Warung Pintar utilizes various digital tools, including AI-based applications, to help kiosk owners manage inventory, track sales, and interact with suppliers. This technology enables kiosk owners to optimize their operations more efficiently and innovate their services. For instance, through sales data analysis, Warung Pintar can offer products that meet the specific needs and preferences of customers in certain areas, thereby increasing customer satisfaction and sales potential.

Another case study, Go-Food, is part of the Gojek ecosystem that provides food delivery services in Indonesia. MSMEs joining the Go-Food platform can leverage digital technology to expand their market reach, increase sales, and reach more customers. Go-Food utilizes data analytics to provide deep insights into demand trends, which helps MSME partners adjust their menus to match customer preferences (Aristayudha & Rettobjaan, 2022). This innovation boosts MSME partners' revenue and encourages them to develop food products that better meet market needs, enhancing competitiveness in the highly competitive culinary industry.

TaniHub is a platform that connects farmers directly with consumers and businesses, utilizing digital technology to optimize the supply chain and reduce waste. TaniHub uses technology to ensure farmers get fair prices and efficiently distribute their products. TaniHub can offer better customer service, provide product recommendations based on data analysis, and assist farmers in managing their farms with ChatGPT support. Increased digital competence among farmers allows them to adopt more innovative and sustainable farming practices, boosting productivity and agricultural business sustainability (Arulmanikandan et al., 2024).

Tokopedia, one of the largest e-commerce platforms in Indonesia, also demonstrates how digital technology can impact MSME management. MSMEs selling on Tokopedia can utilize various digital features to enhance product visibility, manage inventory, and serve customers more efficiently (Aisyah et al., 2023). Tokopedia uses AI to provide personalized product recommendations to customers, help sellers determine pricing strategies, and offer deep sales analytics. Many MSMEs on Tokopedia have successfully increased their sales and expanded their businesses by leveraging technology to enhance their products' attractiveness and competitiveness in the vast online market.

The use of ChatGPT in MSMEs like Warung Pintar, Go-Food, TaniHub, and Tokopedia can be further enhanced by focusing on improving customer interactions. ChatGPT can be used to respond to customer inquiries in real-time, provide product recommendations based on individual preferences, and efficiently manage customer complaints. This enhanced interaction can increase customer satisfaction, strengthen their loyalty to the business, and support the development of mutually beneficial long-term relationships between MSMEs and customers. However, to maximize the benefits of technologies like ChatGPT, the digital competence of MSME entrepreneurs is crucial. Digital competence includes the ability to understand and use technology effectively, including data analytics basics, software management, and digital marketing strategies. Entrepreneurs with high digital skills are more likely to be open to new technologies and able to utilize them optimally for innovation (Dabbous et al., 2023). This competence allows entrepreneurs to identify new opportunities, develop products or services, and improve their overall business processes.

Research by (Bachmann et al., 2024) reveals a positive correlation between digital competence and innovation ability in MSMEs. Entrepreneurs with good digital skills are more effective in identifying innovation opportunities and implementing them in their products or services. Conversely, a lack of digital competence can be a significant barrier to new technology adoption, reducing the potential for innovation and business growth. This underscores the importance of training and developing digital competence for MSME entrepreneurs to ensure success in technology adoption. In the context of Indonesia, digital literacy challenges remain a significant issue for many MSMEs. A study by (Sijabat, 2022) shows that many MSME entrepreneurs have not fully understood or effectively utilized digital technology. These barriers are often due to a lack of access to appropriate training and resources needed to enhance digital competence. Therefore, greater efforts are needed to provide adequate education and support for MSMEs.

To address these challenges, various training and mentoring initiatives have been launched by the government and non-governmental organizations. Programs like "Go Digital," launched by the Ministry of Communication and Information Technology, aim to increase digital literacy among MSMEs by providing relevant training and resources. This program helps MSME entrepreneurs understand the basics of digital technology and how to use it to improve their business efficiency and competitiveness. Experiences from Warung Pintar, Go-Food, TaniHub, and Tokopedia show that with the right support, MSMEs can success-

fully adopt digital technology and utilize it for innovation. Warung Pintar, for instance, not only uses technology to enhance daily operations but also to develop new business models that are more responsive to customer needs. Warung Pintar can offer the most in-demand products in certain areas, significantly boosting sales and customer satisfaction by analyzing sales data.

Moreover, ChatGPT can play a crucial role in strategic decision-making for MSMEs. ChatGPT can help analyze market trends, provide insights into customer behavior, and forecast future product demand. With this information, entrepreneurs can make more accurate and strategic decisions, reduce risks, and effectively capitalize on existing opportunities. This demonstrates how the integration of advanced technology can positively impact the planning and business strategies of MSMEs. However, using ChatGPT and other digital technologies also faces challenges, particularly in data security. MSMEs must ensure that their customer data and business information are well protected from cyber threats. Besides enhancing digital competence, it is essential for entrepreneurs to understand and implement good digital security practices. This is to protect data from potential leaks or misuse that could harm businesses and customers. A study by (Lucian Dimoso & Utonga, 2024) shows that MSMEs that thoroughly adopt digital technology tend to be more successful in the long term. Entrepreneurs who can integrate technologies like ChatGPT into their daily operations and develop strong digital competence have a greater chance of innovating and competing in the market. This underscores the importance of investing in technology and digital skills development as part of MSME growth strategies.

To support the adoption of digital technology and enhance digital competence, collaboration among various stakeholders is essential. The government, educational institutions, industry, and communities must work together to provide the necessary training, resources, and support for MSMEs. These collaborative initiatives can create an ecosystem that supports MSME innovation and growth in the digital era, ensuring that MSMEs have adequate access to the tools and knowledge needed for success. In essence, the use of ChatGPT and the enhancement of digital competence have significant potential to drive the development of innovative ideas in MSME management. MSMEs can leverage this technology to improve operational efficiency, better respond to customer needs, and develop innovative business models with the right support and effective strategies. Case studies like Warung Pintar, Go-Food, TaniHub, and Tokopedia demonstrate that with the proper technology adoption and digital competence enhancement, MSMEs can achieve significant success in a dynamic and competitive market.

Tabel 1. Key Findings on the Impact of Digital Technology and Competency in MSME Management

No	Key Finding	Description
1	Benefits of Digital Technology	Digital technology, such as ChatGPT, enhances operational efficiency, improves customer management, and supports strategic decision-making for MSMEs.
2	Digital Competency	MSME entrepreneurs' digital competency impacts how effectively technologies like ChatGPT can be adopted and utilized.
3	PT. Warung Pintar	Utilizes digital technology to empower traditional small shops, manage inventory, track sales, and innovate services based on sales data analysis.
4	Go-Food	A digital platform for food delivery that helps MSMEs reach more customers and boost sales using data analytics.
5	TaniHub	Connects farmers directly with consumers and businesses, optimizing supply chains, reducing waste, and ensuring fair prices using digital technology.
6	Tokopedia	An e-commerce platform aiding MSMEs in increasing product visibility, managing inventory, and using AI for personalized product recommendations and sales analytics.
7	Enhancing Customer Interaction	ChatGPT can improve customer interactions through real-time responses, product recommendations, and managing complaints, enhancing customer satisfaction and loyalty.
8	Digital Competency Challenges	Digital competency affects innovation capability; lack of digital skills can hinder the adoption of new technologies and innovation.
9	Digital Literacy Challenges in	Many MSMEs in Indonesia face challenges with digital literacy,

	Indonesia	often due to lack of access to training and resources.
10	Training Initiatives	Programs like "Go Digital" aim to enhance MSME digital literacy by providing relevant training and resources.
11	Technology Support in Decision-Making	ChatGPT can assist in market trend analysis, customer behavior insights, and product demand forecasting, supporting strategic decision-making.
12	Data Security Challenges	Data security is a significant challenge; MSMEs need to protect customer and business data from cyber threats while improving digital competency.
11	Stakeholder Collaboration	Collaboration among government, educational institutions, industry, and communities is crucial for providing training and support to MSMEs.
12	Innovation Potential	With appropriate support and strategies, the use of ChatGPT and improved digital competency can drive innovative ideas and success for MSMEs.

5. CONCLUSION, IMPLICATION, SUGGESTION, AND LIMITATIONS

This study confirms that the implementation of digital technology, particularly ChatGPT, and the enhancement of digital competence significantly impact the development of innovative ideas in MSME management. Case studies like Warung Pintar, Go-Food, TaniHub, and Tokopedia demonstrate that digital technology can improve operational efficiency, expand market reach, and enhance customer service. ChatGPT, as a natural language-based artificial intelligence model, provides significant benefits in information management, customer communication, and decision support. However, the success of adopting this technology heavily depends on the digital competence of MSME entrepreneurs, which determines how well this technology can be utilized for innovation and business growth.

The implications of this study indicate that focusing on improving digital literacy and technological skills should be a strategic priority for MSMEs aiming to compete in the modern market. Collaboration between the government, educational institutions, and industry sectors is needed to develop training programs and resources that support the digital transformation of MSMEs. This will help entrepreneurs overcome technological challenges and capitalize on the innovation opportunities offered by technologies like ChatGPT. Additionally, enhancing digital literacy will strengthen MSMEs' ability to manage data, utilize analytics, and adapt to market changes, ultimately leading to sustainable business growth and increased competitiveness.

It is crucial for the government and educational institutions to launch and expand digital literacy programs specifically designed for MSMEs, emphasizing the use of the latest technologies like ChatGPT and data analytics tools. Moreover, continuous training and mentoring are necessary to ensure MSME entrepreneurs not only understand the technology but can also effectively implement it in their daily operations. Close collaboration among various stakeholders—including the government, industry, and community—can help create an ecosystem that supports digital business innovation and development. Furthermore, education on data security practices should be enhanced so that MSMEs can protect business and customer information from cyber threats.

This study has several limitations that need to be addressed. First, the number of articles used in the literature analysis may not cover the entire spectrum of relevant perspectives and cases, so the results may not be fully representative of all MSMEs. Second, the findings of this study may not be widely generalizable to MSMEs in different regions or sectors due to variability in technology adoption and local market conditions. Additionally, as digital technology and artificial intelligence continue to rapidly evolve, the findings of this study may need to be updated to reflect the latest technological advancements and changes in MSME technology adoption. Lastly, variability in technology access and training among MSMEs can affect how the findings of this study are practically applied, indicating the need for a more tailored approach to the diverse contexts and needs of MSMEs.

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