

DIGITAL TRANSFORMATION IN THE CREATIVE ECONOMY: OPPORTUNITIES AND RISKS

Feibry F W Senduk¹, Syalomitha Pongayouw², Riza Mokoginta³

¹²³ Universitas Negeri Manado, Indonesia

*Corresponding Author: feibrysenduk@unima.ac.id

ABSTRACT

This research aims to analyze the impact of digital transformation on strengthening the creative economy sector, focusing on three main subsectors in Tomohon City, namely culinary, handicrafts, and fashion. The research approach used is descriptive qualitative with data collection techniques through in-depth interviews, participatory observations, and documentation. The results of the study show that digitalization has brought significant changes to the way MSMEs produce, transact, and market products. In the culinary subsector, digital technology is mainly used for payment systems and delivery services. In the handicraft subsector, social media is the main means of promoting and strengthening product image. Meanwhile, the fashion subsector showed the highest digital integration through the use of various online platforms and data-based financial management systems. Digital transformation has proven to be able to increase efficiency, expand markets, and strengthen local brand identities, but it also presents challenges in the form of low digital literacy, limited infrastructure, and data security risks. This research emphasizes the importance of strategies for increasing the digital capacity of MSME actors as well as supporting policies that favor equitable access to technology. Thus, digital transformation is not only a tool for adaptation, but also a key driver in building an inclusive and sustainable creative economy ecosystem in the digital era.

Keywords: Digital transformation; Creative economy; MSMEs, Culinary; Handicrafts

INTRODUCTION

The development of the creative economy has become one of the important pillars in global and national economic growth. In today's digital era, digital transformation plays a central role in encouraging innovation and expanding market access for creative industry players. According to Amaliya (2023), the creative economy in Indonesia has accelerated significantly thanks to advances in digital technology that have changed the way creative products are produced, distributed, and consumed. Digital transformation not only provides digital platforms and e-commerce, but also presents advanced technologies such as artificial intelligence (AI) and the Internet of Things (IoT) that enable the creation of innovative products as well as the expansion of global markets. The role of the creative economy in the global economy is increasingly real, reflected in the trend of exports of creative products and services that continue to increase despite the crisis.

The data in Figure 1 shows that the export value of creative services is relatively stable and even tends to increase even though the world is facing a global crisis, including during the pandemic. This condition confirms that the creative economy has high durability, as well as a great opportunity for Indonesia to maximize local potential such as batik, culinary, music, and art in penetrating the global market (Chusumastuti et al., 2024, p. 18). This durability advantage shows that the creative economy is able to become a new growth engine in the context of the digital economy.

Digital transformation has also changed the pattern of social and economic interaction of the world's people. The development of information technology encourages more and more people to be connected through the internet and social media, thus creating a very wide digital market. The *We Are Social* (2022) report, a global research firm that monitors digital trends, shows that more than half of the world's population is now actively using the internet and social media. This is in line with the findings of the *United Nations Conference on Trade and Development (UNCTAD)* (2022), the UN agency that deals with trade and development issues, which affirms that digitalization expands cross-border trade opportunities for creative products. Meanwhile, *the Organisation for Economic Co-operation and*

Development (OECD) (2021), an international organization of 38 countries, emphasized that digital technology accelerates cross-border collaboration and encourages the birth of new business models. Thus, digitalization is not only a distribution medium, but also a catalyst for the birth of a more adaptive business model.

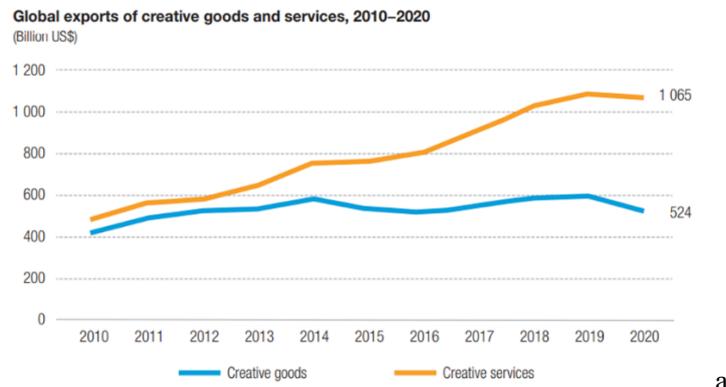


Figure 1. Global exports of creative goods and services, 2010–2020 (billion US\$).

Source: UNCTAD (2022), *Creative Economy Outlook 2022*.

<https://unctad.org/publication/creative-economy-outlook-2022>

Digital transformation opportunities in the creative economy can be seen from various sectors. Putri and Abidin (2025) explained that the use of AI, IoT, smart packaging, and big data has accelerated the growth of the halal creative economy in Indonesia. This technology supports halal certification automation, real-time product monitoring, and more targeted marketing strategies. This innovation shows that digitalization creates a new ecosystem that strengthens the competitiveness of creative products, especially in the face of an increasingly competitive global market.

However, digital transformation also poses complex risks. The challenges that arise include unclear regulations, tax problems, and unfair competition that can harm small business actors. In addition, uneven digitalization has led to skills gaps, changing labor needs, and low digital literacy in a number of regions. Other factors such as limited technology infrastructure, limited internet access, and poor network quality further widen the disparity. If this condition is not immediately addressed, the use of digital technology in the creative economy will slow down and reduce competitiveness in the global market (Sudiantini et al., 2023).

In Indonesia, the impact of digital transformation is clearly seen in the creative economy subsector. Amaliya (2023) emphasized that digitalization has become a major driver in the art, design, music, film, animation, model, and gaming subsectors to develop more rapidly. The government through programs such as "1000 Digital Startups" and "Making Indonesia 4.0" seeks to create a technology-based creative ecosystem to be able to compete at the global level. However, challenges in the form of limited infrastructure, low digital literacy, and weak copyright protection are still obstacles (Amaliya, 2023; Sudiantini et al., 2023). Without a comprehensive solution, digital transformation can actually widen the gap between creative industry players who are ready and those who are not ready.

A real example can be seen in the halal creative economy sector in Indonesia. Putri and Abidin (2025) found that the use of digital technology such as AI, IoT, smart packaging, and big data is able to improve production efficiency, quality control, and halal product marketing strategies. This positive impact strengthens the competitiveness of halal products in the global market and encourages the sustainable growth of the halal creative economy. However, the limited skills of the workforce and the readiness of digital infrastructure are still determining factors that affect the optimization of the benefits of technology. This shows that the success of digital transformation requires the readiness of human resources and adequate infrastructure support.

In addition, appropriate and flexible regulations are needed to support digital transformation in the creative economy sector. Sudiantini et al. (2023) emphasized that consumer protection, data privacy, and intellectual property rights should be a priority in digital policy. Digital skills education and training

must also be prioritized to increase people's capacity to face technological changes. An even and quality internet infrastructure is a key factor so that digital transformation can run inclusively. Collaboration between government, industry, and society is needed to optimize the benefits of technology while reducing emerging risks.

Although digital transformation has an impact on various subsectors of the creative economy, this research is focused on three main subsectors, namely culinary, fashion, and handicrafts. All three were chosen because they have made a major contribution to strengthening the creative economy in Indonesia while representing a variety of forms of digitalization — ranging from digital transactions (culinary), promotion and branding (handicrafts), to multi-platform integration (fashion). With this focus, the research is expected to describe the dynamics of digital transformation in more depth.

Therefore, the formulation of the problem in this article is: first, how does digital transformation affect the development of the creative economy? Second, what are the opportunities and risks arising from digital transformation in the creative economy sector? This question is important to answer in order to provide a comprehensive overview of the dynamics of change and effective strategies for optimizing opportunities and overcoming challenges. The purpose of writing this article is to describe the digital transformation in the creative economy subsector as a whole, as well as identify the opportunities and risks faced by creative industry players in the digital era. As such, this article is expected to make an academic contribution on the relationship between digital transformation and the creative economy, as well as offer practical insights for policymakers and industry players in designing inclusive, competitive, and sustainable growth strategies.

Digital Transformation Concept

Digital transformation is the process of integrating technology into various aspects of business and organization. According to Anggoro et al. (2024), these changes are not only about the adoption of new technologies, but also concerns shifts in strategy, culture, and business models. Technologies such as artificial intelligence, big data, cloud computing, and IoT are driving companies to operate faster and more efficiently. This transformation requires companies to adapt to changes in consumer behavior that are increasingly digital. Sudiantini et al. (2023) emphasized that the success of digital transformation depends on infrastructure readiness, digital literacy, and workforce skills. This means that transformation cannot stand alone without adequate ecosystem support. Therefore, a thorough understanding of this concept is important as the basis for the development of the creative economy.

Creative Economy in the Digital Era

The creative economy is a sector that relies on creativity, ideas, and human skills to create added value. Syafitri & Nisa (2024) show that digital subsectors such as applications and games now dominate Indonesia's creative economy. This growth can be seen from the significant contribution to the Gross Domestic Product (GDP) and labor absorption. According to Sudirwo et al. (2025), digitalization strengthens the competitiveness of MSMEs through product innovation, online marketing, and cross-industry collaboration. Digital technology allows the distribution of creative products to penetrate the global market at a lower cost. On the other hand, Putri & Abidin (2025) found that the Industrial Revolution 4.0 supports the strengthening of the halal creative economy through the use of AI, IoT, and big data. This proves that digitalization not only increases efficiency, but also expands the scope of the creative sector to specific areas. Thus, the creative economy is increasingly dependent on the success of digital transformation.

Digital Transformation Opportunities in the Creative Economy

Digitalization opens up many strategic opportunities for creative economy actors. First, e-commerce and social media provide access to global markets that were previously difficult for MSMEs to reach (Irawati et al., 2024). Second, digital technology triggers product and service innovation according to consumer needs. Sulaiman et al. (2022) emphasized the importance of the TOE model that encourages the diffusion of e-business innovation to create a competitive advantage. Third, operational efficiency has increased thanks to better data management, trend prediction, and supply chain optimization

(Anggoro et al., 2024). Fourth, collaboration between business actors is strengthened through digital platforms and creative ecosystems (Sudirwo et al., 2025). Fifth, digitalization encourages more effective branding and creative marketing, especially through social media. All of these opportunities show that digital transformation can be the main driving force for creative economy growth.

Risks and Challenges of Digital Transformation

While it opens up great opportunities, digital transformation also presents risks. Sudiantini et al. (2023) emphasized that the digital divide due to low literacy and limited infrastructure is still the main obstacle. In addition, data security and consumer privacy are important issues that must be anticipated (Anggoro et al., 2024). Unstable regulations, for example related to taxation or digital copyright, also cause legal uncertainty. Global competition is getting tighter, so it demands creative products that have high quality and uniqueness (Syafitri & Nisa, 2024). Irawati et al. (2024) added that limited capital and digital literacy in MSMEs can increase social disparities. On the other hand, the use of technology also has the potential to shift the traditional workforce, causing new social problems. Therefore, the success of digital transformation must take into account a comprehensive risk mitigation strategy.

Integration of Digital Transformation and Creative Economy

Digital transformation and the creative economy have a symbiotic relationship. According to Putri & Abidin (2025), digital technology strengthens the halal creative economy through production efficiency and consumer trust. Sudirwo et al. (2025) stated that without digital-based innovation, the creative economy will be difficult to compete in the global market. On the contrary, without creativity, digital technology will only become a tool with no added value. Therefore, the integration of the two results in products that are unique, efficient, and have cultural value. Syafitri & Nisa (2024) emphasized that the dominance of digital subsectors such as apps and games is clear evidence of this collaboration. However, successful integration requires public policies that support innovation. Sudiantini et al. (2023) highlight the need to improve digital literacy so that people are not left behind. Anggoro et al. (2024) added that leadership and an open organizational culture are important factors in the success of transformation. Irawati et al. (2024) show that social impacts, such as improving the welfare of MSME actors' families, can be achieved with the right digital strategy. At the same time, Sulaiman et al. (2022) suggest using the TOE framework as a conceptual model for more targeted transformation. Thus, the integration of digital transformation and the creative economy must be understood as a long-term strategy. If done systematically, this integration not only drives economic growth, but also creates a sustainable creative ecosystem.

Relevance of the Culinary, Handicrafts, and Fashion Sub-Sectors

In the Indonesian context, the culinary, handicraft and fashion subsectors also show a vital role in strengthening the creative economy. Research by Hasan et al. (2021) revealed that digital transformation in culinary MSMEs through digital delivery and payment platforms is able to increase market reach, expand business networks, and provide benefits for both business actors and consumers. This shows that digitalization provides a great opportunity for culinary MSMEs to adapt to the needs of modern consumers. In addition, the handicraft subsector also has an important role in supporting the local creative economy. Handicraft products such as ornamental flowers, weaving, and regional souvenirs have become cultural identities while having high market potential through promotional digitization. According to Wuisan et al. (2024), visual strategies through social media such as Facebook and TikTok play an important role in expanding market reach and strengthening the image of local products. This shows that digitalization in the handicraft subsector not only increases sales, but also supports the preservation of regional cultural values. On the other hand, Pertiwi, Nurbaiti, and Dharma (2024) emphasized that the fashion subsector, especially Muslim fashion, faces serious challenges due to the rise of e-commerce. However, traditional traders are able to survive by implementing a strategy of focus, differentiation, and low-cost advantage. This strategy not only maintains product quality and customer loyalty, but is also an important form of adaptation in the face of digital disruption. Therefore, culinary,

handicrafts and fashion are seen as the main subsectors in analyzing the dynamics of digital transformation in Indonesia's creative economy.

METHOD

This study uses a descriptive qualitative approach with the aim of in-depth describing the digital transformation process experienced by Micro, Small, and Medium Enterprises (MSMEs) in the creative economy sector in Tomohon City. This approach was chosen because it is able to explain socio-economic phenomena holistically and contextually, especially in identifying digitalization practices, challenges, and opportunities that arise in the midst of business actors' adaptation to technology. The data collected is descriptive in the form of words, narratives, and documents that reflect the informant's direct experience.

Data Sources and Types

Research data consists of two types, namely primary and secondary data. Primary data was obtained through in-depth interviews with MSME actors representing three main subsectors of the creative economy, namely: traditional culinary subsector (Sate Ragei Amor); handicraft sub-sector (Kios Berkat Anugerah); and local fashion subsector (Hades Store). The selection of the three informants was carried out by purposive sampling, which is based on the criteria of active involvement in digital activities such as the use of social media, electronic payment systems, and participation in digital training. Secondary data was obtained from scientific journals that discuss strengthening the creative economy and digitalization strategies of MSMEs in North Sulawesi, including Tomohon City. Some of the main reference sources come from academic publications such as the *EMBA Journal* (Adam et al., 2022), the *JASMIEN Journal* (Wuisan et al., 2024), and the *Empiricism Journal* (Maradesa & Hullah, 2025).

Research Location and Time

This research was carried out in Tomohon City, North Sulawesi Province, which is known as one of the creative cities with a high concentration in the culinary, handicrafts, and fashion subsectors. Tomohon City is also included in the areas with creative tourism potential identified by ERIA (2023) in the Tourism Satellite Account (TSA) for North Sulawesi. The selection of the location is based on empirical considerations that most MSME actors in this area are starting to switch to using digital platforms in marketing, transactions, and business communication. The research period lasted for two months, namely September to October 2025, including the preparation stage, data collection, field observation, and analysis of interview results.

Data Collection Techniques

The data collection technique is carried out through three main methods: In-depth interviews, conducted in a semi-structured manner to explore the experiences of MSME actors regarding changes in business behavior, digital constraints, and adaptation strategies. Participatory observation is carried out by observing the operational activities and digital interaction of MSME actors at their business locations. Documentation, through the collection of secondary data such as business profiles, training program reports, photos of activities, and relevant regulations regarding the development of the creative economy in Tomohon.

Data Analysis Techniques

Data analysis was carried out using the interactive model of Miles and Huberman (1994) which included three main stages, namely: Data reduction, in the form of filtering and grouping interview results and observations into main themes such as forms of digital adaptation, benefits, risks, and challenges. Data presentation, compiled in the form of descriptive narratives and thematic tables to show the relationships between phenomena found in the field. Conclusion drawing or verification, which is the stage of interpreting the results of the analysis that answers the formulation of research problems about the impacts, opportunities, and risks of digital transformation on MSMEs in the creative economy sector.

Data Validity

To ensure the validity of the research results, the triangulation technique of sources and methods is used. Source triangulation was carried out by comparing interview results from three different MSME subsectors, while method triangulation was carried out by matching interview data, observations, and documentation. This approach ensures that the information obtained is valid, consistent, and scientifically accountable. With this method, the research is expected to be able to provide a comprehensive overview of the dynamics of the digital transformation of MSMEs in Tomohon City, as well as its implications for the sustainability of the regional creative economy.

RESULTS AND DISCUSSIONS

Overview of Research Results

The results of this study show that digitalization plays an important role in strengthening the competitiveness and sustainability of MSMEs in Tomohon City, especially in three main subsectors: culinary, handicrafts, and fashion. Through a descriptive qualitative approach, it was found that the adoption of digital technology has brought significant changes in production, promotion, and transaction activities, although with varying levels of adaptation among business actors. In general, digitalization is seen as a tool to expand the market and improve operational efficiency, but at the same time it also presents technical challenges and limitations of digital literacy among MSME actors.

Culinary Subsector

The culinary subsector is the main focus of this research because of its dominant role in the Tomohon creative economy ecosystem. Based on the results of the interview, Sate Ragei Amor's culinary business shows that digitalization is used mainly in the aspect of financial transactions. Business actors use digital wallets such as DANA and mobile banking to make it easier for customers to pay, thereby speeding up the daily transaction process. However, this business has not utilized social media for promotion, as it still relies on regular customers from direct relationships. However, business actors consider that the use of digital payment systems has increased efficiency and accelerated cash flow, although sometimes they face technical obstacles such as QRIS transactions that have been paid by customers but are not recorded in the bank system, so that funds do not enter the business account. This case shows that there are real risks in the use of digital technology, especially in the aspects of security and reliability of payment systems. This condition illustrates the early stages of digitalization adoption that are more functional than strategic.

Table 1. Digitization of MSMEs in the Culinary Subsector in Tomohon City

MSME Name	Use of Digital Technology	Media/Platform	Benefits	Constraints
Sate Ragei Amor	Digital payments (DANA, mobile banking, bank transfer)	Not yet using social media	Simplify transactions and payment efficiency	Technical malfunction of the payment system (QRIS not recorded)
Martabak Mas Narto	Utilization of delivery apps	Grab	Expand customers and increase sales	Cancellation of customer orders
Rujak Alfa Omega	Digital payments	-	Simplify transactions and revenue efficiency	Haven't taken advantage of online promotions

MSME Name	Use of Digital Technology	Media/Platform	Benefits	Constraints
Satay Ragey Brayden	Digital promotion	Posted on Facebook	Increase customers and sales	Unstable internet network

From the observation results, the level of digital adoption in the culinary subsector is still classified as *basic digitalization*, which focuses on transactions and distribution. Digital innovations such as online promotion or digital financial recording have not been fully implemented. However, the main benefits felt are time efficiency and increased cash flow. Obstacles that often arise are internet network disruptions and electronic payment system errors, such as the case of QRIS that is not recorded. This condition emphasizes the need for simple digital literacy and accounting training so that culinary actors can switch from functional use to a more comprehensive digital strategy.

This phenomenon is in line with the findings of ERIA (2023) which explains that most culinary MSMEs in North Sulawesi are still in the "basic digitalization" phase, where technology is used for transaction and distribution efficiency, not for marketing innovation. These results show that digital literacy and online promotional training are still an urgent need for local culinary MSMEs. In the context of Sate Ragei Amor, the limited use of social media hinders the potential for market expansion, even though the culinary sector has a strong attraction in the Tourism Satellite Account (TSA) as a sector that drives the regional tourism economy. Therefore, increasing digital capacity is a strategic factor to optimize the potential of the culinary subsector in Tomohon.

In addition to Sate Ragei Amor, other culinary players such as Martabak Mas Narto and Martabak Mas Memet also show a similar pattern: the use of the Grab application for delivery services, but without an integrated digital marketing strategy. The use of this platform helps to expand customer reach and increase revenue, but it is not accompanied by digital financial record-keeping. This strengthens the view of Maradesa and Hullah (2025) that digital accounting is still an area that is underutilized by culinary MSMEs in Tomohon. Although digital systems improve transaction efficiency, most businesses still rely on manual record-keeping. This gap shows the need for intervention through simple digital accounting training so that MSMEs can manage their finances in a more transparent and sustainable manner.

Technical obstacles such as internet network disruptions are also common obstacles in the culinary sector. However, despite facing these challenges, business actors still recognize the great benefits of digital technology. Wuisan et al. (2024) explained that the adoption of social media and digital payment systems has contributed significantly to increasing turnover and sustainability of culinary MSMEs in Tomohon, especially for businesses that are active in online promotion. This shows that digitalization has a strong potential to strengthen the local economy if supported by adequate infrastructure and literacy. Thus, the culinary sector can be the main motor in the transition to a digital economy based on regional tourism.

Handicraft Subsector

In the handicraft subsector, digitalization has a different impact, especially in terms of product promotion and branding. Kios Berkat Anugerah, as a florist business that has been operating for 15 years, is a real example of how social media helps expand the market beyond the region. The use of Facebook and TikTok is used to display ornamental flower products visually and attractively. Although financial recording is still done manually, the use of digital technology in promotions and transactions has increased turnover and expanded customer network. These results are in line with the analysis of Wuisan et al. (2024) which emphasizes the importance of visual strategies and content consistency in building consumer trust and strengthening the brand image of MSMEs.

The changes experienced by Kios Berkat Anugerah also reflect the shift in business patterns from traditional to semi-modern. Even without formal training support, business actors are able to adapt to digital trends independently. This shows that motivation and experience are internal factors that drive

technological adaptation. In the context of ERIA theory (2023), internal driving factors such as entrepreneurial motivation and the desire to expand the market are key to the success of digital adoption in the creative sector.

Table 2. Digitization of MSMEs in Handicraft Subsector in Tomohon City

MSME Name	Use of Digital Technology	Media/Platform	Benefits	Constraints
Florist Award Blessing Kiosk	Digital promotions and transactions	Copyright © 2019 Copyright ©	Increase turnover and market reach outside the region	The internet is unstable
Evangelical Furniture	Online promotions	Posted on Facebook	Increase sales and market reach	Network disruption
Areza Kiosk Bamboo Weave	Online promotion and communication	Posted on Facebook	Facilitate promotion and introduce special products	Internet outages
Krysan Souvenir	Online promotion and sales	Instagram, InDrive	Expand the market and increase sales	Network disruption

The findings show that social media is the main means for handicraft actors in carrying out digital transformation. Visual promotion through platforms such as Facebook, TikTok, and Instagram has been proven to increase visibility and expand consumer reach beyond the region. However, most business actors still manage recording manually and have never participated in formal digital training. Kios Berkas Anugerah is an example of adaptive MSMEs that utilize visual content to strengthen the brand without relying on government programs. This shows the importance of digital adaptation self-learning strategies in strengthening the competitiveness of the handicraft sector in the digital era. The Anugerah Blessing Kiosk thus reflects how businesses can become agents of local transformation, which strengthens the value chain of the creative economy through simple but effective digital innovations.

Fashion Subsector

The fashion subsector, represented by Hades Store, shows the highest level of digital adaptation among the three categories. This effort integrates various digital platforms such as TikTok, Instagram, Facebook, Shopee, and a financial recording system based on Google Sheets. The use of technology not only for promotion but also for financial supervision, indicates a more comprehensive digital maturity. Hades Store has successfully built a strong local brand through a data-oriented digital marketing strategy and customer interaction.

The fashion subsector features the most mature digital integration through the use of various platforms such as TikTok, Shopee, and Google Sheets. Hades Store is an example of *best practice* because it is able to combine promotions, transactions, and financial management in an integrated manner. Digitalization in this sector not only has an impact on increasing sales, but also strengthens brand identity and relationships with consumers. The striking difference between the fashion subsector and the other two subsectors confirms that the success of digital transformation is highly dependent on managerial strategies, digital skills, and adaptability to online market trends. This is in line with the findings of Silaban et al. (2025) that MSMEs that utilize digital systems in an integrated manner have a greater opportunity to build brand identity and achieve long-term business sustainability.

Table 3. Digitization of MSMEs in the Fashion Subsector in Tomohon City

MSME Name	Use of Digital Technology	Media/Platform	Benefits	Constraints
Hades Store	Online sales, promotions, and financial recording	TikTok, Instagram, Facebook, Shopee, InDrive, J&T	Building a brand, improving efficiency, and financial oversight	Customers are not serious on social media
Aspar Clothing Store	Digital marketing and transactions	Copyright © 2019 InDriver. All Rights T	Facilitate online transactions and promotions	No significant obstacles
FZ Optical Glass House	Digital marketing and branding	Facebook, Instagram, InDrive	Improve customer image and reach	No significant obstacles

From an operational perspective, Hades Store shows the relevance of technology application in three main aspects: production, marketing, and management. Social media is used to adapt designs to market trends, marketplaces are used to expand distribution, and digital record-keeping systems are used for internal oversight by investors. This integration strengthens the research results of Adam et al. (2022) who affirm that the effectiveness of MSME digital marketing depends on the synergy between content creativity and the strategic use of online platforms. Thus, Hades Store can be used as a model of best practice for other MSMEs in Tomohon in building a digital-based business system.

Comparison Between Sub-Sectors and the Implications of Digitalization

When compared between sub-sectors, the level of digital maturity of MSMEs in Tomohon shows a gradual pattern: the culinary sub-sector is in the early phase (digital transactions), the handicraft subsector is in the intermediate phase (digital promotion and branding), while the fashion subsector has reached the advanced phase (multi-platform integration and digital management). This pattern reinforces the theory of Wuisan et al. (2024) that the effectiveness of digitalization depends not only on technology, but also on the readiness of human resources and management strategies. This inequality illustrates that each sub-sector has different needs for policy intervention and training.

In general, digitalization opens up great opportunities for MSMEs in Tomohon to contribute to tourism-based and cultural economic growth. Through digital platforms, local culinary and handicraft products can reach tourists and consumers outside the region more widely. This supports the findings of ERIA (2023) which places the culinary and fashion subsectors as the main drivers in the Tourism Satellite Account (TSA) in North Sulawesi. However, risks that arise such as dependence on certain platforms, network disruptions, and lack of understanding of the digital accounting system still need to be anticipated so that digitalization does not create new gaps between business actors.

Thus, the main opportunity of digitalization for MSMEs in Tomohon lies in its ability to expand the market, increase transaction efficiency, and strengthen the competitiveness of local products in the digital realm. However, on the other hand, there are real risks in the form of dependence on digital payment systems that are prone to errors, the potential for loss of transaction data such as unrecorded QRIS cases, and weak cybersecurity for small business actors. Therefore, efforts to increase digital literacy and strengthen infrastructure are key so that digitalization opportunities can be maximized while minimizing risks. These field findings show that digital transformation at the MSME level is not only a technical process, but also a social and economic change that requires collaboration between local governments, business actors, and educational institutions as affirmed by Silaban et al. (2025) to build an inclusive and sustainable digital ecosystem.

CONCLUSION

This research confirms that digital transformation has a strategic role in strengthening the competitiveness, efficiency, and sustainability of Micro, Small, and Medium Enterprises (MSMEs) in the creative economy sector of Tomohon City. Through the application of digital technology, especially in the aspects of transactions, promotions, and business management, MSMEs can expand market reach, increase productivity, and strengthen local brand identity. However, the rate of digital adoption in each subsector shows significant variation. The culinary sub-sector is still in its early stages with a focus on transaction efficiency; the handicraft subsector has taken advantage of online promotions to expand the market; Meanwhile, the fashion subsector is reaching a more mature stage of digital integration through multi-platform and data-based management systems. However, challenges such as limited digital literacy, internet network disruptions, lack of training, and dependence on certain platforms are still major obstacles. This condition shows that the success of digital transformation depends not only on the availability of technology, but also on the readiness of human resources and inclusive policy support. Therefore, increasing the digital capacity of business actors, strengthening network infrastructure, and developing community-based mentoring programs are strategic steps to create an adaptive, competitive, and sustainable creative economy ecosystem. This research also emphasizes the need for collaboration between local governments, industry players, and educational institutions in accelerating digital transformation that is equitable and has a wide impact on regional economic growth.

REFERENCES

- Adam, A. A., Worang, F. G., & Wenas, R. S. (2022). Digital marketing through social media as a marketing strategy for MSMEs in Tomohon City. *EMBA Journal*, 10(4), 2231–2242. <https://ejournal.unsrat.ac.id/index.php/emba/article/view/41411>
- Amaliya, D. (2023). The effect of digitalization on the creative economy sector in Indonesia. *Maliki Interdisciplinary Journal*, 2(6), 1444–1452. <https://ejournal.uingsudur.ac.id/sahmiyya/article/view/10298>
- Anggoro, S., Nurhayati, S., Ismail, A., & Yakub. (2024). *Digital transformation: A practical guide to technology-based management*. PT Media Penerbit Indonesia. <https://mediapenerbitindonesia.com>
- ERUPTION. (2023). Analysis of drivers of MSME development in the tourism and creative economy sector in North Sulawesi through the tourism satellite account (TSA) and SWOT approaches. In *Building MSMEs in Eastern Indonesia: A regional study*. Economic Research Institute for ASEAN and East Asia (ERIA). https://www.eria.org/uploads/media/Books/2023-Membangun-UMKM-Indonesia-Timur/8_ch.4-Sulawesi-Utara-UMKM.pdf
- Hasan, M., Dzakiyyah, A., Kumalasari, D. A., Safira, N., & Aini, S. N. (2021). Digital transformation of MSMEs in the culinary sector in Jatinegara Village, East Jakarta. *Journal of Business & Entrepreneurship*, 17(2), 35–147. <https://ojs.pnb.ac.id/index.php/JBK/article/view/2529/1811>
- Irawati, S. A., Wantara, P., & Arfy, W. R. (2024). Culinary MSME transformation: Creative economy development strategy in the digital era to improve family welfare. *Journal of Management Science Studies*, 4(4), 515–522. <https://journal.trunoyo.ac.id/jkim>
- Maradesa, C., & Hullah, A. R. (2025). The application of digital accounting in creating sustainable business in culinary MSMEs in Tomohon City. *Empiricism Journal*, 6(1), 83–90. <https://journal-center.litpam.com/index.php/empiricism/article/view/2723/1829>
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook* (2nd ed.). Sage Publications. <https://vivauniversity.wordpress.com/wp-content/uploads/2013/11/milesandhuberman1994.pdf>
- Organisation for Economic Co-operation and Development. (2021). *OECD digital economy outlook 2021*. https://www.oecd.org/en/publications/oecd-digital-economy-outlook_f0b5c251-en.html
- Pertiwi, D. I., Nurbaiti, & Dharma, B. (2024). Strategies of Muslim fashion clothing traditional traders in the face of business digital transformation. *Ganaya: Journal of Social Sciences and Humanities*, 7(3), 282–290. <https://jayapanguspress.penerbit.org/index.php/ganaya/article/view/3436/1600>

- Putri, F. A., & Abidin, R. (2025). The influence of the industrial revolution 4.0 on the halal creative economy in Pekalongan Regency. *Journal of Sahmiyya*, 4(1), 285–298. <https://publikasiilmiah.unwahas.ac.id/AKSES/article/view/8592>
- Silaban, D. P., Tindi, R. G., & Chandra, V. (2025). Digital marketing in MSMEs in North Sulawesi: A systematic literature review. In *Proceedings of the 8th NCBMA, Universitas Pelita Harapan*. https://www.researchgate.net/publication/392904338_Digital_Marketing_Pada_UMKM_di_Sulawesi_Utara_Sebuah_Tinjauan_Literatur_Sistematis
- Sudiantini, D., Ayu, M. P., Aswan, M. C. A. S., Prastuti, M. A., & Apriliya, M. (2023). Digital transformation: Impacts, challenges, and opportunities for digital economy growth. *Trending: Journal of Economics, Accounting and Management*, 1(3), 21–30. <https://doi.org/10.30640/trending.v1i3.1115>
- Sulaiman, E., Handayani, C., & Widyastuti, S. (2022). Digital transformation of the TOE framework and e-business diffusion innovation for sustainable MSMEs: A conceptual model. *Journal of Business Management and Entrepreneurship*, 8(1), 51–62.
- Sudirwo, S., Raysharie, P. I., Judijanto, L., Rustam, A., Parjono, N., Arjun, M., Kunaifi, A., Hermawan, K. T., Parmadi, D., & Hastuti, D. (2025). *The creative economy: Innovation, collaboration, and transformation*. PT Green Pustaka Indonesia.
- Syafitri, A. D. A., & Nisa, F. L. (2024). The development and role of the creative economy in Indonesia from time to time. *Journal of Business Economics and Management*, 2(3), 189–198. <https://doi.org/10.59024/jise.v2i3.810>
- United Nations Conference on Trade and Development. (2022). *Creative economy outlook 2022*. <https://unctad.org/publication/creative-economy-outlook-2022>
- We Are Social, & Hootsuite. (2022). *Digital 2022 global overview report*. <https://wearesocial.com/uk/blog/2022/01/digital-2022>
- Wuisan, Y. W., Hullah, A. R., & Butarbutar, T. E. (2024). Strengthening digital marketing strategy in culinary tourism MSMEs in Tomohon City. *JASMIEN Journal*, 5(1), 316–324. <https://journal.cattleyadf.org/index.php/Jasmien/article/view/770/524>