

# The Role of Entrepreneurial Leadership in MSME Digital Business Development

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## ABSTRACT

Micro, small, and medium enterprises in Medan City face challenges in adopting digital technologies due to limited digital literacy and infrastructure, yet entrepreneurial leadership offers a pathway to overcome these barriers. This study aims to examine the characteristics, challenges, and strategies faced by MSMEs, as well as to analyze the impact of entrepreneurial leadership on digital business development in the digital economy era. Using a descriptive qualitative approach, the research involves in-depth interviews, participatory observations, and documentation with 10 enterprise owners in Medan who have adopted digital tools for at least three years. The findings reveal that proactive, innovative, and adaptive leadership enables these enterprises to use platforms like social media and e-commerce, enhancing market reach and transaction efficiency. However, inconsistent revenue growth highlights the need for sustained content strategies and advanced training, with only half of the enterprises reporting steady turnover increases. Challenges include low digital literacy, unstable internet, and limited human resources. Government and community support, through training and digital networks, strengthens these efforts. The study concludes that entrepreneurial leadership is vital for digital transformation, but success requires ongoing training and collaboration with stakeholders to build a robust digital ecosystem for enterprises in Medan.

**Keywords:** Adaptive Leadership, Digital Business, Digital Literacy, Digitalization, Entrepreneurial Leadership, MSMEs.

## ABSTRAK

Usaha mikro, kecil, dan menengah di Kota Medan menghadapi tantangan dalam mengadopsi teknologi digital karena keterbatasan literasi dan infrastruktur digital. Namun, kepemimpinan kewirausahaan menawarkan jalan untuk mengatasi hambatan tersebut. Penelitian ini bertujuan untuk mengkaji karakteristik, tantangan, dan strategi yang dihadapi oleh UMKM, serta menganalisis dampak kepemimpinan kewirausahaan terhadap pengembangan bisnis digital di era ekonomi digital. Dengan menggunakan pendekatan kualitatif deskriptif, penelitian ini melibatkan wawancara mendalam, observasi partisipatif, dan dokumentasi dengan 10 pemilik usaha di Medan yang telah mengadopsi perangkat digital setidaknya selama tiga tahun. Temuan penelitian mengungkapkan bahwa kepemimpinan yang proaktif, inovatif, dan adaptif memungkinkan usaha-usaha ini untuk menggunakan platform seperti media sosial dan e-commerce, sehingga meningkatkan jangkauan pasar dan efisiensi transaksi. Namun, pertumbuhan pendapatan yang tidak konsisten menyoroti perlunya strategi konten yang berkelanjutan dan pelatihan lanjutan, dengan hanya setengah dari usaha yang melaporkan peningkatan omzet yang stabil. Tantangan tersebut meliputi literasi digital yang rendah, internet yang tidak stabil, dan keterbatasan sumber daya manusia. Dukungan pemerintah dan masyarakat, melalui pelatihan dan jaringan digital, memperkuat upaya ini. Studi ini menyimpulkan bahwa kepemimpinan kewirausahaan sangat penting untuk transformasi digital, tetapi keberhasilannya membutuhkan pelatihan berkelanjutan

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dan kolaborasi dengan para pemangku kepentingan untuk membangun ekosistem digital yang tangguh bagi usaha-usaha di Medan.

**Kata kunci:** Kepemimpinan Adaptif, Bisnis Digital, Literasi Digital, Digitalisasi, Kepemimpinan Wirausaha, UMKM.

## INTRODUCTION

Medan, as the capital of North Sumatra and the largest metropolitan city outside Java, recorded an economic growth of 5.07% in 2024, with a Gross Domestic Product (GDP) of IDR 329.61 trillion at current prices (Arifin et al., 2023). The role of Micro, Small, and Medium Enterprises (MSMEs) is significant in this economy, particularly in the trade and retail sectors, which contribute approximately 26.67% to the city's GDP (Arifin et al., 2023). The accommodation and food and beverage sector, dominated by culinary MSMEs, saw a remarkable 14.5% growth, highlighting their potential to thrive in the digital era if they adopt digital technologies (Boedirochminarni, 2020). However, many MSMEs in Medan face challenges such as limited infrastructure, restricted access to technology, and low digital literacy, which hinder their digital transformation (Indra et al., 2024).

A study by Indra et al. (2024) found that human resource quality, digital marketing strategies, and fintech adoption significantly impact MSME performance in Medan. Despite these insights, many MSMEs, particularly at traditional markets like Setia Budi Morning Market, still rely heavily on offline sales, leading to stagnant or declining income (Fauziah et al., 2025). According to Galib et al. (2024), while e-commerce platforms enhance market reach, the lack of digital literacy among MSME owners limits their ability to fully leverage these tools. This creates a research gap: although the importance of digitalization is widely acknowledged, there is limited understanding of how entrepreneurial leadership drives effective digital adoption among Medan's MSMEs in overcoming these barriers. The slow adoption of digital platforms, such as e-commerce and social media, underscores the need for effective leadership to navigate these challenges (Salsabila et al., 2024; Siregar & Daulay, 2024).

To address these issues, the North Sumatra Provincial Government aims for 20% of MSMEs to go digital in 2024, up from 15% in 2023, through strategies like e-commerce training, digital mindset development, and improved internet infrastructure (Antaraneews, 2024). The Digital Entrepreneurship Academy, held by Center for Human Resources Development and Communication and Informatics Research (*Balai Pengembangan Sumber Daya Manusia dan Penelitian Komunikasi dan Informatika*/BBPSDMP Kominfo) Medan from January to February 2024, trained hundreds of MSMEs in digital marketing, business models, and tools like Google My Business (Damanik et al., 2024). Additionally, sharia-based digitalization training in October–December 2024 covered halal fintech and accounting, supporting Muslim MSMEs (Suginam et al., 2025). In May 2025, Medan will host the Entrepreneur Hub 2025, focusing on digital storefront optimization, product photography, and collaborative networking (Linkumkm, 2025). These initiatives reflect the government's commitment to supporting MSMEs' digital transformation.

Despite absorbing over 97% of Indonesia's workforce, many Medan MSMEs still face uneven digitalization progress (Yusniar et al., 2024). For instance, while Quick Response Code Indonesian Standard (QRIS) adoption is increasing nationally, many small vendors in Medan hesitate to use it due to poor communication about the 0% Merchant Discount Rate (MDR) policy for transactions under IDR 100,000 (Pranata, 2025). Moreover, limited internet access in suburban areas and the underuse of cloud-based management systems further impede digital adoption (Purnomo, 2024). These challenges highlight the need for entrepreneurial leadership that is proactive, innovative, and adaptive to drive digital transformation (Rusliati et al., 2020; Ungureanu, 2021; Chaniago, 2023).

By exploring leadership characteristics, strategies, and their impact on digital adoption, this study seeks to fill the gap in understanding how leaders can effectively guide MSMEs

to overcome digitalization challenges and enhance business performance. Culinary and craft MSMEs, in particular, have significant potential to lead this transformation but require intensive support in digital branding, packaging, and storytelling (Sipayung, 2025). Visionary leadership, as emphasized by Raja et al. (2024), involves not only adopting technology but also fostering cross-sector collaboration with government, fintech, and communities, as seen in initiatives like Entrepreneur Hub (Sembiring et al., 2025). By combining macroeconomic data, field observations, and government policies, this introduction provides a foundation to explore entrepreneurial leadership's role in Medan's MSME digital transformation. The integration of big data analytics, as suggested by Tarigan and Mawardi (2024), and digital leadership strategies (Aminah & Saksono, 2021) can further enhance MSMEs' competitiveness in the digital economy. This study aims to analyze the characteristics, challenges, and strategies of MSMEs and examine the impact of entrepreneurial leadership on digital business development in the digital economy era. This study contributes to understanding how leadership drives digital success in a rapidly evolving economic landscape.

## **LITERATURE REVIEW**

### **Entrepreneurial Leadership in MSMEs**

Entrepreneurial leadership is a dynamic approach that combines innovation, risk-taking, and strategic vision to address business challenges. According to Gupta et al. (2021), entrepreneurial leaders not only manage teams but also seize new opportunities, particularly in rapidly evolving digital markets. This style is vital for MSMEs, as it fosters adaptability and encourages leaders to experiment with new technologies (Renko et al., 2015). For example, leaders who embrace risk can explore platforms like social media or e-commerce to boost their business presence. In Medan, such leaders often adopt tools like WhatsApp Business to connect with customers, reflecting the proactive nature of entrepreneurial leadership (Harrison et al., 2018).

This leadership style requires a clear vision to ensure consistent digital adoption, especially in regions with limited resources (Chaniago, 2023). Entrepreneurial leaders must balance creativity with strategic planning to sustain growth in the digital economy (Aránega et al., 2023; Arabiun et al., 2024). For instance, they may encourage their teams to test new marketing strategies on platforms like TikTok, adapting quickly to consumer trends. Pauceanu et al. (2021) suggest that entrepreneurial leadership drives innovation by allocating resources effectively, even in small businesses with tight budgets. This ability to navigate uncertainty makes entrepreneurial leadership a key driver of digital transformation for MSMEs.

### **MSMEs in the Digital Economy Era**

MSMEs form the backbone of Indonesia's economy, contributing over 60% to national GDP through more than 64 million enterprises. However, transitioning to the digital economy remains challenging due to low digital literacy and limited technology access. According to Yusniar et al. (2024), these barriers prevent many MSMEs from competing in digital markets. In Medan, only about 35% of MSMEs actively use e-commerce or social media for marketing, indicating a slow shift to digital platforms (Salsabila et al., 2024). Traditional markets, such as those in Medan, often lack the infrastructure needed for digital sales, further slowing adoption (Nuzuliati, 2025).

The digital economy offers MSMEs opportunities to expand their reach, but challenges like unreliable internet in suburban Medan persist (Ramadhani et al., 2025). Government initiatives, such as the digital talent scholarship, aim to improve digital skills among MSME owners (Aminah & Saksono, 2021). A shift in mindset is also critical, as many MSMEs remain hesitant to adopt digital tools (Rahayu & Day, 2017). According to Muafi et al. (2025), resilient MSMEs that embrace digital entrepreneurship can achieve long-term sustainability by aligning with consumer trends. These findings highlight the need for targeted support to help MSMEs thrive in the digital era.

### **Digitalization as an MSME Development Strategy**

Digitalization transforms MSME operations by integrating technology into marketing, payments, and inventory management. According to Trauth et al. (2018), adopting digital tools significantly enhances income and operational efficiency for small businesses. In Medan, programs like the Digital Entrepreneurship Academy have equipped MSMEs with skills to create content and use tools like Google My Business (Damanik et al., 2024). For instance, Sipayung (2025) notes that fintech solutions like QRIS streamline transactions, but their success depends on consistent training and awareness. Platforms like Shopee and Tokopedia allow MSMEs to reach wider audiences, though many struggle to optimize these tools due to limited expertise (Galib et al., 2024).

Big data analytics can provide valuable insights into consumer behavior, yet its adoption in Medan is limited by technical complexity (Tarigan & Mawardi, 2024). Cloud-based systems also improve efficiency, but infrastructure challenges hinder their use (Purnomo, 2024). According to Octavian et al. (2025), digital marketing strategies, when guided by strong leadership, enhance MSME competitiveness. Continuous support, such as government-led training and community workshops, is essential to help MSMEs sustain digital growth and adapt to new technologies (Pratama et al., 2024). These strategies highlight the importance of aligning technology with business goals to drive development.

### **Challenges and Support for Digital Transformation**

The digital transformation of MSMEs faces significant obstacles, including low digital literacy and limited human resources. According to Ramadhani et al. (2025), many MSME owners lack the technical knowledge needed to adopt digital business models. In Medan, uneven internet infrastructure further complicates online activities, particularly in suburban areas (Salsabila et al., 2024). A conservative mindset, as Uzzahra and Munawaroh (2025) observe, leads some MSME owners to prefer traditional methods over digital innovations. Government initiatives, like the Proud of Made in Indonesia program, provide training and marketplace access to boost digital capacity (Pratama et al., 2024).

Adaptive leadership is crucial for overcoming these challenges, enabling MSMEs to adopt technology despite limited resources (Pirola et al., 2020). Sharia-based financial tools, such as halal fintech, support Muslim MSMEs in Medan by integrating digital solutions with cultural values (Absah et al., 2025; Suginam et al., 2025). According to Arisandy et al. (2025), community-driven initiatives and government collaboration accelerate digital inclusion for novice entrepreneurs. Continuous mentoring and infrastructure improvements are essential to ensure MSMEs can sustain their digital transformation and compete in the digital economy (Raja et al., 2024). These efforts underscore the importance of a supportive ecosystem for MSME growth.

### **RESEARCH METHODS**

This study employs a descriptive qualitative approach to deeply explore the role of entrepreneurial leadership in the digital business development of MSMEs in Medan City. The qualitative approach is suitable for understanding the experiences, strategies, and challenges faced by MSME leaders in the digital economy, as it allows for an in-depth analysis of their perspectives (Assyakurrohim et al., 2023). By focusing on a case study design, the research examines specific MSMEs that have implemented digital transformation, capturing the nuances of their leadership practices. This approach ensures a detailed exploration of how proactive and innovative leadership drives digital adoption in Medan's unique economic context.

The research is conducted in Medan City, North Sumatra, chosen due to its high MSME population and diverse business sectors, including culinary, fashion, handicrafts, and services. The subjects are MSME owners or managers who have actively engaged in digitalization for at least three years, use digital technologies like social media or e-commerce, and play a direct role in business decision-making. To ensure diversity,

subjects are selected from various sectors, such as culinary and craft MSMEs, to reflect the range of digital adoption practices in Medan (Salsabila et al., 2024). Informants are chosen through purposive sampling, targeting those with relevant experience until data saturation is achieved, estimated at 8–10 participants. Saturation is determined when no new themes emerge from additional interviews, ensuring comprehensive data collection (Hartono, 2018).

Data collection involves multiple techniques to ensure robust findings. In-depth, semi-structured interviews are conducted with MSME leaders to explore their leadership styles, digital strategies, and challenges. Participatory observation is used to examine how digital tools, such as social media or digital payments, are integrated into daily operations. Documentation, including business photos, digital brochures, and marketplace screenshots, provides additional evidence. These methods are triangulated to enhance the credibility of the findings, ensuring a holistic view of digital transformation processes (Lincoln & Guba, 1985).

Data analysis follows the interactive model proposed by Miles and Huberman (1992), involving three stages: data reduction, data display, and conclusion drawing/verification. Data reduction filters relevant information from interviews, observations, and documents. Data display organizes findings into narratives or thematic tables for easier interpretation. Conclusions are drawn and verified to ensure accuracy. The validity of the data is tested using credibility (through source and technique triangulation), transferability (by detailing informant contexts), dependability (via process audits), and confirmability (to minimize researcher bias) (Lincoln & Guba, 1985). The researcher serves as the primary instrument, designing interview guidelines and analyzing data based on entrepreneurial leadership and digitalization literature.

## RESULTS

### Characteristics, Challenges, and Strategies of Entrepreneurial Leadership in MSME

This study explores the role of entrepreneurial leadership in the digital transformation of MSMEs in Medan City, involving 10 MSME actors who have adopted digital technologies. Through in-depth interviews, participatory observations, and documentation, the research uncovers key themes related to leadership characteristics, digitalization challenges, strategies, impacts, and the role of external support. The findings, summarized in four tables, provide insights into how proactive and innovative leadership drives digital business development. These results align with the study's aim to understand how MSME leaders navigate the digital economy in Medan's unique context.

**Table 1.** Characteristics of Entrepreneurial Leadership in Medan MSMEs

No.	MSME Name	Type of Business	Leadership Characteristics	Digital Innovation Carried Out
1	Our Medan Coffee	Culinary	Proactive, risk-taker	Using Instagram Ads, ShopeeFood
2	Dapoer Ucok	Snacks	Visionary, creative	Branding on TikTok, QRIS
3	Mother Hijab	Fashion Muslim	Responsive, agile	Sell via TikTok Shop and Live
4	Wooden Shop	Local Cuisine	Adaptive, consistent learning	Google Maps and GMB are active
5	Lurik Creations	Craft	Experimental, innovative	E-commerce (Tokopedia), WhatsApp Business
6	Angkringan 21	Evening Culinary	Open collaboration, active community	Collaboration with online motorcycle taxis
7	Medan Daster Shop	Clothes	Independent, fast decision making	Live Shopee daily
8	Chocolate Uda	Special Souvenirs	Educating, empowering staff	Using Canva, a local marketplace
9	Medan Gallery	Craft	Strategic, scalable	Instagram Ads & Product Videos
10	Ayam Geprek Juara	Culinary	Customer focus, flexible	Menu digital via Google Form & WA

The first key theme is the characteristics of entrepreneurial leadership among Medan MSME actors. As shown in Table 1, all 10 informants exhibit proactive, innovative, and change-oriented traits. For instance, Our Medan Coffee demonstrates proactive leadership by using Instagram Ads and ShopeeFood to expand its customer base, while Dapoer Uco employs creative branding on TikTok and adopts QRIS for payments. Mother Hijab's responsive and agile leadership is evident in its use of TikTok Shop and live streaming to sell Muslim fashion. Similarly, Wooden Shop's adaptive approach includes active use of Google Maps and Google My Business (GMB). These examples highlight how leaders tailor digital innovations to their business types, such as culinary or craft, reflecting the diversity of Medan's MSME sector (Salsabila et al., 2024). All informants play a dominant role in digital decision-making, showing strong motivation to transform their businesses despite limited capital. This aligns with entrepreneurial leadership theories that emphasize risk-taking and innovation (Renko et al., 2015).

Table 2. Digitalization Challenges Faced by MSMEs

No.	Challenge Type	Frequency of Emergence (out of 10 MSMEs)
1	Low digital literacy	8
2	Do not know content strategy	7
3	Difficulty advertising	6
4	Human Resources Limitations	6
5	The internet is unstable	4
6	Lack of advanced training	5

The motivations and challenges of digitalization form the second theme. MSME actors are driven to digitalize due to pandemic-related pressures, the need to expand markets, and shifting consumer preferences toward online services. However, Table 2 reveals significant obstacles. Low digital literacy affects eight out of 10 MSMEs, while seven struggle with developing effective content strategies. Six informants face difficulties with advertising costs and human resource limitations, and four report unstable internet connections. Lack of advanced training, noted by five MSMEs, underscores the need for ongoing skill development beyond initial workshops (Pratama et al., 2024). These challenges highlight the resource constraints typical of MSMEs in Medan, where digital adoption requires both technical knowledge and infrastructure support. Despite these hurdles, the informants' persistence reflects their entrepreneurial spirit.

Table 3. Leadership Strategies in Digital Business

No.	Action Strategy	MSMEs That Do (n=10)
1	Self-learning technology	9
2	Live streaming for sales	7
3	Collaboration with communities or influencers	6
4	Use e-wallet & QRIS	8
5	Online training from the government/Kominfo	6

Leadership strategies for thriving in the digital ecosystem are the third theme. Table 3 outlines the actions taken by MSME leaders. Nine out of 10 engage in self-learning through platforms like YouTube, while eight adopt e-wallets and QRIS for transactions. Seven use live streaming to boost sales, and six collaborate with local communities or influencers. Six MSMEs also participate in government or Kominfo-led online training, which helps them navigate digital platforms more effectively (Damanik et al., 2024). For example, Angkringan 21 collaborates with online motorcycle taxis, while Medan Daster Shop conducts daily live streams on Shopee. These strategies demonstrate adaptive leadership, as MSME owners delegate tasks, such as content creation, to younger staff or family members. This flexibility allows them to leverage free promotions on marketplaces like Shopee and Tokopedia, maximizing limited resources (Galib et al., 2024).

### **Impact of Digitalization for MSMEs**

The impact of digitalization on MSMEs is the fourth theme, as detailed in Table 4. Nine out of ten MSMEs report increased market reach, while eight note improved transaction efficiency and brand awareness. However, only five experience a consistent increase in turnover, and four report better customer retention. These varied outcomes suggest that while digital tools enhance visibility and operations, revenue growth depends on consistent strategy execution and content quality (Raja et al., 2024). For instance, Ayam Geprek Juara uses digital menus via Google Forms and WhatsApp, improving efficiency but not always translating to higher profits. Observations confirm that digital transformation significantly boosts marketing and transaction systems, but turnover growth varies based on the MSME's ability to maintain consistent digital efforts.

**Table 4.** The Impact of Digitalization on MSMEs (Self-Assessment Results)

No.	Main Impact	MSMEs are Impacted (n=10)
1	Increasing market reach	9
2	More efficient transactions	8
3	Increased brand awareness	8
4	Increased turnover	5
5	Customer retention improves	4

The final theme is the role of government and stakeholders in supporting digitalization. Several MSMEs benefited from training programs by the Medan Cooperative Office and Kominfo, as well as communities like "MSMEs Digital Medan." Table 4 indicates that six MSMEs accessed government-led training, which provided foundational digital skills. However, informants expressed a need for follow-up assistance, advertising subsidies, and access to platform-based digital loans, such as sharia fintech. These findings align with studies emphasizing the importance of sustained government and community support to build a robust digital ecosystem for MSMEs (Pratama et al., 2024). Collaboration with stakeholders is critical for creating a supportive environment that enables MSMEs to sustain their digital transformation efforts.

The findings highlight the pivotal role of entrepreneurial leadership in navigating digital challenges. Leaders who actively seek training, experiment with platforms like TikTok or Shopee, and collaborate with communities demonstrate resilience and adaptability. However, the uneven impact on turnover, as shown in Table 4, suggests that digital success requires not only leadership but also consistent strategy implementation and external support. These results provide a foundation for understanding how Medan's MSMEs can leverage entrepreneurial leadership to thrive in the digital economy.

### **DISCUSSION**

This study reveals that MSME actors in Medan City who embrace digital transformation exhibit entrepreneurial leadership characteristics such as proactivity, innovation, and adaptability. According to Renko et al. (2015), leaders with these traits are adept at identifying opportunities and acting swiftly in uncertain environments. Informants, such as those running Our Medan Coffee and Dapoer Uco, demonstrate this by adopting platforms like Instagram Ads and TikTok for branding, reflecting a willingness to experiment with new technologies. This aligns with Gupta et al. (2004), who emphasize that entrepreneurial leadership drives small organizations to explore digital tools, enhancing business value despite resource constraints. The trial-and-error approach seen in Medan MSMEs, such as using WhatsApp Business or Google My Business, underscores a strong entrepreneurial spirit that supports digital innovation.

However, digital transformation faces significant challenges, including low digital literacy and limited human resources, as noted in the findings. According to Ramadhani et al. (2025), these barriers hinder MSMEs' ability to fully adopt digital business models. In Medan, unstable internet connections and a lack of advanced training further complicate digital efforts, particularly for small vendors in suburban areas (Salsabila et al., 2024). This supports Pirola et al. (2020), who argue that resource constraints demand

adaptive leadership to navigate digitalization challenges effectively. MSME leaders counter these obstacles through self-learning via YouTube and government training, often involving younger staff or family in content creation. This participatory approach reflects transformational leadership tendencies, motivating teams to embrace digital change (Bass & Avolio, 1993).

The impact of digitalization, as seen in increased market reach and transaction efficiency, varies in terms of revenue growth. According to Raja et al. (2024), while digital tools enhance customer exposure, revenue growth depends on consistent content strategies and platform management. Only half of the informants reported consistent turnover increases, highlighting the need for sustained digital efforts. The adoption of QRIS by eight MSMEs aligns with national trends, yet some hesitate due to unclear policies like the 0% MDR for small transactions (Pranata, 2025). This finding echoes Rahayu and Day (2017), who note that e-commerce adoption boosts engagement but requires strategic consistency for financial gains. Collaborative efforts enhance adaptability, supporting Simanjutak and Pasaribu's (2023) view that digital communities foster competitiveness.

The role of stakeholders, including government and local communities, is crucial in building a digital ecosystem. Pratama et al. (2024) highlight that government-led training, like the Digital Entrepreneurship Academy, provides foundational skills, but sustained mentoring is essential for long-term success. MSMEs in Medan benefit from such programs but call for follow-up assistance and subsidies to optimize platforms like Shopee. This aligns with Chaniago (2023), who stresses the need for collaborative ecosystems to support digital transformation in uncertain economic conditions. The collective leadership seen in community networking reflects a broader entrepreneurial approach, enabling MSMEs to respond to changing consumer preferences (Arabiun et al., 2024).

The implications of these findings are twofold. MSME leaders in Medan should prioritize ongoing digital training and community collaboration to enhance digital adoption and revenue growth. Policymakers should focus on providing sustained mentoring and infrastructure improvements, particularly in suburban areas, to support MSMEs. This study contributes to entrepreneurial leadership literature by demonstrating how proactive and adaptive traits drive digital transformation in resource-constrained settings, extending the frameworks of Gupta et al. (2004) and Renko et al. (2015). These insights can guide future research on digital ecosystems in developing economies.

## **CONCLUSION**

This study confirms that entrepreneurial leadership plays a critical role in driving the digital transformation of MSMEs in Medan City. Leaders who are proactive, innovative, and adaptive successfully adopt digital tools like social media, e-commerce platforms, and QRIS to expand market reach and improve transaction efficiency. However, the uneven increase in turnover among MSMEs highlights that digital success depends on consistent strategies, such as maintaining high-quality content and leveraging digital training. The findings show that government and community support, through programs like the Digital Entrepreneurship Academy and local MSME networks, strengthens leaders' ability to navigate digital challenges. These efforts create a supportive ecosystem that empowers MSMEs to thrive in the digital economy, particularly in Medan's diverse culinary, craft, and fashion sectors.

The implications of this study are significant for both MSME owners and policymakers. MSME leaders should prioritize ongoing digital training and community collaborations to enhance their digital strategies and sustain revenue growth. Policymakers can support this by providing follow-up mentoring and improving internet infrastructure, especially in suburban areas. However, this study is limited by its focus on Medan City and a small sample of 10 MSMEs, which may not fully represent the diverse experiences of MSMEs across Indonesia. Future research could explore larger samples or compare urban and rural MSMEs to understand broader digitalization trends.

Additionally, examining specific sectors, such as technology-driven MSMEs, could provide deeper insights into tailored digital strategies.

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