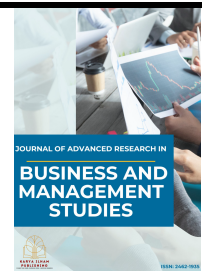




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The Role of Digital Leadership in Shaping Entrepreneurial Resilience and Business Success: A Qualitative Study of Micro-Entrepreneurs in Pahang

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ABSTRACT

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This study investigates the influence of digital leadership on shaping entrepreneurial resilience and business success among micro-entrepreneurs in Pahang, Malaysia. While previous research has primarily focused on small and medium-sized enterprises using quantitative approaches, there is limited qualitative evidence on micro-entrepreneurs practising digital leadership under resource constraints and in semi-rural settings. Applying a phenomenological design, this study conducted semi-structured interviews with six micro-enterprise owners across varied industries, including food and beverages, handicrafts, beauty services, and frozen food. Data were analysed using thematic analysis to identify patterns linking digital leadership practices, resilience strategies, and business outcomes. The findings discover that digital leadership among micro-entrepreneurs remains largely informal, hands-on, and problem oriented. It focused on strategic use of social media, messaging applications, digital payments, and self-initiated learning. These practices enhanced entrepreneurial resilience by enabling rapid adaptation during disruptions, including the COVID-19 pandemic, floods, supply shortages, and rising operational costs. Digital tools were vital for sustaining the company, diversifying products, retaining customers, and reaching markets beyond the local area. In this context, business success was viewed through a broad lens incorporating financial stability, survival, brand reputation, and individual development. The study posits that digital leadership functions as a micro-level dynamic capability, fostering resilience and long-term viability for semi-rural micro-enterprises. These insights suggest that policymakers should champion bespoke digital leadership.

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1. Introduction

The rapid development of digital technologies has significantly changed the way businesses operate worldwide. For entrepreneurs, especially those running small and micro-enterprises, digital tools such as social media, e-commerce platforms, and digital payment systems are no longer optional but essential for survival and growth. In this context, digital leadership has become increasingly important. Digital leadership refers to the ability of business owners or leaders to effectively use digital technologies, encourage digital innovation, and guide their businesses through digital transformation. Recent studies highlight that digital leadership plays a key role in improving organizational adaptability, innovation capability, and long-term business success [26].

At the same time, the concept of entrepreneurial resilience has gained attention in entrepreneurship research, particularly because micro and small enterprises are often more vulnerable to shocks and operate under significant resource limitations [5]. This is particularly important for micro-entrepreneurs, who often face financial constraints, limited manpower, and high market competition. Recent research suggests that digital transformation can strengthen business resilience by improving efficiency, market access, and customer engagement. However, the specific role of digital leadership in shaping entrepreneurial resilience remains underexplored, especially in micro-enterprise contexts [23,27]. Emerging evidence also indicates that digital leadership strengthen the organisational resilience in SMEs [3]. However, the role of digital leadership in shaping entrepreneurial resilience in microenterprises remains poorly understood.

Although many recent studies have examined digital leadership and business performance, most focus on large organizations or, more generally, small and medium enterprises (SMEs). Very limited attention has been given specifically to micro-entrepreneurs, who operate on a smaller scale and face different structural and resource challenges such as limited resources, lower digital literacy, and weaker institutional support [15]. In addition, much of the existing research adopts quantitative methods, emphasizing statistical relationships between digital practices and performance outcomes. There is still a lack of in-depth qualitative research exploring how micro-entrepreneurs understand and practice digital leadership, and how these practices influence their resilience and business success.

Furthermore, in the Malaysian context, and particularly in the state of Pahang, empirical evidence remains scarce. Micro-entrepreneurs play a significant role in supporting local economic development and community livelihoods. Understanding how digital leadership contributes to their resilience and business success is important for designing effective policies, training programs, and support initiatives. However, few studies have examined this issue from a qualitative perspective within regional or rural settings in Malaysia [16,17].

Therefore, this study aims to address these research gaps by exploring the role of digital leadership in shaping entrepreneurial resilience and business success among micro-entrepreneurs in Pahang. Specifically, this study aims to examine the role of digital leadership in shaping entrepreneurial resilience and business success among micro-entrepreneurs in Pahang.

By providing rich qualitative insights from the experiences of micro-entrepreneurs, this study contributes to the existing literature on digital leadership and entrepreneurship. It also offers practical implications for policymakers and support agencies aiming to strengthen the sustainability and competitiveness of micro-businesses in the digital era.

2. Literature Review

2.1 Digital Leadership in Micro-Enterprises

Digital transformation integrates digital technologies into all facets of business, requiring leaders to effectively steer strategic and operational shifts. Some researchers Lathabhavan, *et al.*, [22] argue that entrepreneurs can leverage their limited resources to drive digital innovation. This insight is particularly vital during crises, as highlighted by Lamatao, *et al.*, [21], who found that digital leadership empowers employees and enhances organizational resilience. The other researchers [8] urge a re-evaluation of leadership frameworks to better align with the demands of a digitalized world.

Microenterprises face specific challenges in digital adoption, including resource constraints. Some researchers Vashishth, *et al.*, [39] propose a dynamic capabilities model that emphasises the necessity for organisations to adapt continually. Nazarian *et al.*, [30] discuss the resource-intensive nature of digital transformation and emphasize that leadership and management support are crucial for navigating this complexity.

Research by Gilli *et al.*, [13] stress the importance of a balanced skill set for leaders in micro-enterprises, combining technical knowledge with transformational leadership qualities. Furthermore, Çallı *et al.*, [7] demonstrate that generative leadership and high digital literacy among executives significantly contribute to the digital maturity of micro-enterprises.

In summary, effective digital leadership is indispensable for micro-enterprises aiming to thrive in a digital landscape. By fostering innovation, resilience, and the necessary competencies, leaders can effectively guide their organizations through the complexities of digital transformation. Future research must continue to explore the evolving interplay between leadership practices and digitalization in small business contexts.

2.2 Entrepreneurial Resilience

Entrepreneurial resilience is increasingly recognized as a crucial factor in entrepreneurs' ability to navigate challenges and seize opportunities in a volatile economic landscape. Defined as the capacity to withstand and recover from setbacks, entrepreneurial resilience underpins long-term success in business ventures, particularly under adverse conditions. Recent literature offers significant insights into various dimensions of entrepreneurial resilience, emphasizing the interplay between psychological factors, organizational practices, and external challenges.

One key aspect of entrepreneurial resilience is the role of psychological factors, including self-efficacy and emotional regulation. Alshebami [4] highlights that entrepreneurs with high self-efficacy are better equipped to devise effective strategies to cope with uncertainty and setbacks. This finding aligns with the work of Slim *et al.*, [34], which illustrates how psychological resilience serves as both an antecedent and an outcome of entrepreneurial action, demonstrating a reciprocal relationship that enhances resilience over time. Furthermore, understanding how stress impacts entrepreneurial resilience is imperative, as discussed by Ahmed *et al.*, [1], who argue for a comprehensive approach that integrates stress management with resilience-building techniques.

The context in which micro and small businesses operate also plays a significant role in shaping resilience. For instance, during the COVID-19 pandemic, the unique challenges faced by small enterprises necessitated adaptive leadership strategies. Research by Lamatao *et al.*, [21] underscores the importance of digital leadership in empowering employees to contribute to organizational resilience during crises. By fostering a culture of innovation and adaptability, leaders can enhance their teams' collective resilience, enabling businesses to achieve better performance outcomes even in turbulent times [21].

Moreover, the interplay between personal attributes and organizational practices also affects resilience. Hisni *et al.*, [18] emphasize the importance of digital transformation and marketing capabilities as key drivers of resilience within small businesses. Ensuring that organizations possess robust marketing strategies can facilitate adaptability to market changes, thereby bolstering resilience. This notion is further supported by research from Gu *et al.*, [14], which shows that effective use of information technology is associated with enhanced supply chain resilience and overall firm performance.

In conclusion, entrepreneurial resilience is a multi-faceted construct influenced by psychological factors, contextual challenges, and organizational dynamics. As entrepreneurs face increasing adversity in the current economic climate, fostering resilience through leadership, adaptability, and resourcefulness remains fundamental to sustaining business success. Future research should continue to explore the mechanisms through which resilience can be cultivated and its long-term impacts on entrepreneurial performance.

2.3 Business Success in Micro-Entrepreneurship

Business success in micro-entrepreneurship hinges on a combination of financial literacy, effective management practices, and the utilization of available resources. Micro-enterprises, defined as small businesses often operated by individuals or families with minimal initial capital, play a vital role in local economies. However, their success is frequently challenged by factors such as limited access to finance, inadequate skills, and market fluctuations.

Financial literacy is a critical determinant of business success for micro-entrepreneurs. Eresia *et al.*, [12] emphasize that a strong understanding of financial principles helps micro-enterprise owners make informed decisions on budgeting, pricing, and investment. This knowledge enhances their capacity for strategic planning and correlates with business growth. Supporting this notion, Khaw *et al.*, [25] found that each incremental improvement in financial literacy significantly increases revenue, indicating that educating micro-entrepreneurs in financial management can lead to substantial improvements in their economic viability.

Furthermore, the management of financial resources directly impacts performance, as outlined by Anthanasius *et al.*, [37]. Their study indicates that effective economic and financial management practices are critical for optimizing liquidity and profitability among Mexican micro-enterprises. By implementing sound financial strategies and improving cash flow management, entrepreneurs can enhance operational stability, especially given the irregular income patterns often experienced by micro-enterprises [20].

Access to both formal and informal financing options plays a significant role in fostering business growth. Degryse *et al.*, [11] show that combining formal loans with informal financial sources enables microenterprises to leverage the advantages of both financing avenues, thereby enhancing growth potential. Financial inclusion initiatives are particularly vital, as highlighted by Sungkawati [36], who call for strategies that facilitate microenterprises' access to capital. This access empowers entrepreneurs to invest in technology, diversify their product offerings, and respond agilely to market demands.

Moreover, entrepreneurial competencies, including strategic planning and relationship building, are foundational to the success of microenterprises [35]. By enhancing these skills, entrepreneurs can navigate challenges effectively and seize market opportunities. Programs focusing on capacity building and training have been shown to significantly improve micro-business performance, enabling entrepreneurs to adapt to evolving market conditions while fostering innovation [6].

In conclusion, the success of micro-entrepreneurship is influenced by myriad factors, including financial literacy, effective management practices, access to finance, and the development of critical entrepreneurial competencies. By addressing these areas, micro-entrepreneurs can enhance their resilience and adaptability, securing a more prosperous future within the dynamic economic landscape.

3. Methodology

3.1 Research Design

This study adopted a qualitative research design using a phenomenological approach to explore the lived experiences of micro-entrepreneurs in Pahang. A qualitative design was considered appropriate because the objective of this study was not to test hypotheses or measure variables statistically, but rather to gain an in-depth understanding of how digital leadership is experienced and practiced by micro-entrepreneurs, and how it shapes their resilience and business success.

Phenomenology was selected because it focuses on understanding individuals' subjective experiences and the meanings they assign to them. In the context of this study, the approach enabled the researcher to explore how micro-entrepreneurs interpret digital transformation, how they enact digital leadership in their daily operations, and how these practices influence their ability to overcome challenges. By capturing participants' personal narratives, the study provides rich insights into the relationship between digital leadership, entrepreneurial resilience, and business performance within a specific regional context.

3.2 Participants

A total of six micro-entrepreneurs from Pahang participated in this study. Purposive sampling was used to select participants who met specific criteria:

1. They were owners of registered micro-enterprises.
2. They actively managed their business operations.
3. They had experience using digital tools (e.g., social media, e-commerce platforms, digital payment systems) in their businesses.

The participants represented diverse sectors, providing varied perspectives and enriching the data. The sectors included:

- Food and beverages
- Handicraft and apparel
- Beauty and salon services
- Frozen food and snacks

All participants had been operating their businesses for at least one year and had experienced business challenges, including market competition, financial constraints, and post-pandemic recovery. The diversity in business types allowed the study to capture different ways digital leadership practices are applied across industries while maintaining focus on the micro-enterprise level.

Although the sample size was relatively small, it is consistent with phenomenological research, which prioritizes depth of understanding over breadth. The six participants provided sufficient data to reach thematic saturation, where no new significant themes emerged from the interviews.

3.3 Data Collection

Data were collected through semi-structured interviews, which allowed flexibility for participants to share their experiences in detail while ensuring that key research topics were covered [8]. An interview guide was developed based on the study objectives and relevant literature on digital leadership and entrepreneurial resilience.

The interview questions focused on four main areas:

- The use of digital tools and platforms (e.g., social media marketing, online sales platforms, digital communication tools).
- Business challenges faced, including financial, operational, and market-related issues.
- Strategies used to cope with crises and uncertainties.
- Perceptions of business success and growth.

Each interview lasted approximately 45–60 minutes and was conducted either face-to-face or online, depending on participants' availability. With participants' consent, all interviews were audio-recorded to ensure accuracy. The recordings were then transcribed verbatim. For interviews conducted in Malay, the transcripts were translated into English to facilitate analysis and reporting. To ensure accuracy, the translations were carefully reviewed and cross-checked against the original recordings.

Ethical considerations were strictly observed. Participants were informed of the study's purpose, and their consent was obtained prior to data collection. Confidentiality and anonymity were assured by using pseudonyms instead of real names.

3.4 Data Analysis

The data were analysed using thematic analysis, following the framework proposed by Braun *et al.*, [41]. Thematic analysis is a flexible and systematic method for identifying, analysing, and reporting patterns (themes) within qualitative data. It is particularly suitable for examining participants' perspectives and experiences across a dataset.

The analysis process involved several stages:

1. Familiarisation – The researcher read and re-read the transcripts to gain a comprehensive understanding of the data.
2. Initial Coding – Significant statements and meaningful segments of text were highlighted and assigned codes related to digital leadership practices, resilience strategies, and business outcomes.
3. Theme Development – Related codes were grouped into broader categories and themes.
4. Review and Refinement – Themes were reviewed to ensure they accurately reflected participants' experiences and aligned with the research objectives.

The final themes were organised under three main categories: digital leadership practices, entrepreneurial resilience, and business success. These themes were then interpreted in relation to existing literature to identify similarities, differences, and new insights.

To enhance trustworthiness, the study applied criteria suggested by Braun *et al.*, [42], including credibility, dependability, and confirmability. Several strategies were employed, including careful documentation of the coding process, peer discussion of emerging themes, and the maintenance of an audit trail of analytical decisions. These steps helped ensure credibility, dependability, and transparency in the research process.

4. Findings

The findings are organised into three main themes.

4.1 Digital Leadership Practices among Micro-Entrepreneurs

Most respondents demonstrated digital leadership through every day, practical use of digital platforms, especially for marketing and customer communication. Social media and messaging apps were treated as core business tools, not optional add-ons.

Several respondents used social media selectively, depending on business model and seasonality. For example, a craft entrepreneur relied more on physical presence but used digital promotion during events:

“We are not highly active digitally because we have a physical shop. During handicraft events, we promote through TikTok Live. We have Facebook but use it seasonally, depending on events.” (R1)

Food entrepreneurs described social media and WhatsApp as an integrated pathway for customer acquisition and order conversion:

“When I post on Facebook, it automatically connects to Instagram and TikTok... Customers usually end up contacting me through WhatsApp.” (R3)

Digital leadership also appeared in the ability to self-learn and execute basic digital marketing activities. One service entrepreneur explicitly linked digital tools to business visibility and customer response:

“I learned on my own. I created a Facebook page and ran sponsored ads. I also promote through local Facebook groups and WhatsApp groups.” (R4)

In addition to social media, some respondents used digital tools to improve productivity. AI tools were adopted as practical support for content writing:

“I use ChatGPT to write social media captions by specifying tone and length, which saves time.” (R2)

Digital learning was often supported through government or community-based training, showing that digital leadership at the micro level is frequently built through external programs:

“We learned from... free classes, including NADI weekly sessions.” (R6)

Overall, digital leadership among micro-entrepreneurs was mostly hands-on, informal, and problem-driven, focused on immediate business needs such as promotion, communication, and payment.

4.2 Digital Leadership and Entrepreneurial Resilience

Respondents consistently described resilience as the ability to adapt under pressure, especially during disruptive events such as COVID-19, floods, and economic inflation. Digital tools supported adaptation by enabling continued customer access, flexible promotion, and business continuity strategies.

One respondent experienced severe shock (flood damage and income loss), then rebuilt through formalisation and learning new production techniques:

“During lockdown, we had zero income. A major flood in late 2021 destroyed our sewing machines... We rebuilt by buying a new industrial machine, applying for RISDA support... and learning eco-printing as a second income stream.” (R1)

Others emphasised resilience in terms of continuous learning, especially because digital trends evolve quickly and entrepreneurs often manage marketing alongside production:

“Digital trends change quickly, and time is limited because we also handle production.” (R1)

For food-based businesses, resilience was closely tied to managing trend-driven demand and supply constraints. When products went viral, entrepreneurs faced shortages and had to cope operationally:

“When a product goes viral... raw materials become scarce... suppliers often limit purchases.” (R2)

Rising costs and pricing pressure were recurring resilience challenges for respondents. Several described the tension between maintaining quality and responding to inflation:

“The cost of ingredients keeps changing... I either reduce portion sizes or increase prices... I do not want to lower quality just to compete on price.” (R3)

In response to uncertainty, some entrepreneurs diversified their offerings, including shifting to frozen products to stabilise sales during disruptions:

“Instead of selling daily meals... I introduced frozen products as a backup because frozen items last longer.” (R3)

Resilience was also supported by family and teamwork, especially for micro-enterprises with limited manpower:

“Family support is very strong... Our workers also cooperate well, and teamwork matters.” (R6)

Overall, the data suggest that digital leadership strengthened resilience by enabling faster adjustment in marketing channels, product strategy, and customer communication during volatile periods.

4.3 Digital Leadership and Business Success

Respondents defined business success in multi-dimensional ways. Success included income growth, but it also included survival, customer retention, reputation, and personal development. For some, success was framed as a personal shift in confidence and willingness to expand beyond comfort zones:

“Success is the courage to leave my comfort zone, open a shop, and engage customers directly.” (R1)

For others, success meant survival and continuity, particularly in a difficult economy:

“Success is the ability to survive and sustain the business. Many businesses have closed, so staying open matters.” (R4)

Several respondents highlighted outcomes linked directly to digital practices, especially customer reach and recognition. One entrepreneur described how social media expanded the business beyond local boundaries:

“Customers grew... Digital tools, especially Facebook and WhatsApp, expanded reach.” (R5)

Business success was also measured by repeat customers and word-of-mouth amplification, which digital tools made easier to maintain:

“Success means having regular customers who return and recommend us... Digital platforms also make success easier today. People can contact us easily using WhatsApp.” (R6)

Some respondents viewed success as building a clear brand identity or signature product, even if they did not claim full success yet:

“I do not consider myself fully successful yet, but I am proud to have a signature product, the Bandung Lychee Cake.” (R2)

Finally, success was constrained by structural cost pressures, which shaped how entrepreneurs evaluated growth decisions such as opening a physical shop:

“I do not feel fully successful yet because I am still home-based... overhead costs are challenging.” (R3)

In summary, digital leadership contributed to success primarily through visibility, customer access, and operational confidence, while entrepreneurs evaluated “success” through both financial and non-financial lenses.

5. Discussion and Conclusion

As the 21st century approaches, the ability of businesses to build and maintain digital leadership while maximizing opportunities will likely become a key determinant of success in the marketplace. Therefore, this qualitative study examines the role of digital leadership in shaping entrepreneurial resilience and business success among micro-entrepreneurs in Pahang. The analysis found that digital leadership is a critical capability that helps micro-entrepreneurs navigate environmental uncertainty, complexity, and ambiguity to business success. The findings demonstrate how digital affordances open up new forms of value creation in business. The tremendous shift from an industrial to a knowledge-driven economy, accelerated by the fourth industrial revolution (IR 4.0), has profoundly changed the corporate landscape [29,38].

According to Hokmabadi *et al.*, [19], this transition has introduced both exceptional opportunities and challenges, especially for small and medium-sized enterprises (SMEs) as they maneuver the complexities of digital transformation and global expansion. This is consistent with prior qualitative entrepreneurship research on digital leadership practices [10,32,24,9], entrepreneurial resilience [31,40], and business success [2,33] among micro-entrepreneurs.

Notably, the findings also align with a survey conducted by UNDP Indonesia in collaboration with Universitas Indonesia, which found that the COVID-19 pandemic prompted roughly 44 percent of SMEs to adopt digital marketing strategies while nearly 90 percent of microenterprises utilised social media to advertise their products. In fact, entrepreneurs can run their businesses 24/7 without interruption thanks to digitalization, which provides them with an internet connection [28]. Given the similarities in social, cultural, and economic factors between Indonesia and Malaysia, insights from the Indonesian context offer meaningful implications for micro entrepreneurs in Pahang, Malaysia.

Theoretically, digital leadership not only enhances entrepreneurial resilience by strengthening responsiveness, adaptability, and self-esteem in navigating distribution but also positions micro-entrepreneurs who adopt this orientation to retain loyal customers and adapt to shifting market conditions. In semi-rural areas like Pahang, where micro-enterprises often encounter poor infrastructure and resource-constrained environments, these capabilities seem valuable. Most importantly, the findings provide a comprehensive framework for understanding how digital leadership acts as a micro-level dynamic capability that shapes entrepreneurial resilience and business success among micro-entrepreneurs in semi-rural settings, such as in Pahang State. By

combining these two elements, this study extends the existing literature in both fields, demonstrating their significant impacts on business resilience and independence.

This study serves as a catalyst, providing insight for future research and inspiring deeper exploration of this vital area. The results have real-world implications, indicating that programs proposed to foster entrepreneurial encouragement should emphasize digital leadership training rather than technical know-how alone. This study has significant implications for policymakers, government entities, non-governmental organisations, SME agencies, and scholars, who can collaborate to implement various intervention initiatives. To help micro-entrepreneurs in areas like Pahang become more resilient and sustainable in the long run, policymakers and support agencies should consider mentoring programs, peer-learning platforms, and tailored digital training for the local context. In a time where change is inevitable, digital leadership is not merely a defensive tool but a crucial catalyst for innovation, growth, and competitive advantage in global marketplaces.

Despite its contributions, a couple of limitations should be considered. This study limits the generalizability of the findings as it focused on micro-entrepreneurs in Pahang, Malaysia. Future research should consider mixed-methods or comparative studies across different regions in Malaysia and varying business sizes to further validate and extend the proposed insights. The role of digital leadership in shaping entrepreneurial resilience and business success may be better understood through longitudinal studies.

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