

Beyond the Cash Flows: Financial Digitalisation Competency Strategies for Women's Entrepreneurial Success

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ABSTRACT

Women entrepreneurs play an increasingly important role in Malaysia's economic and social development, contributing to household income, job creation, and community resilience. Despite accounting for more than 20% of registered businesses, women-owned enterprises often remain small, financially vulnerable, and concentrated in low-growth sectors. The rise of financial digitalisation through mobile banking, e-wallets, fintech platforms, and e-commerce offers new opportunities for inclusivity and growth, but it also creates challenges for women entrepreneurs who face gaps in digital readiness, financial literacy, and behavioural adaptation. The objectives of this study are: 1) to investigate the challenges faced by women entrepreneurs in steering financial digitalisation; 2) to recommend financial competency strategies that can reinforce their ability to sustain and grow businesses in the digital economy. A systematic review analysis was employed by retrieved the articles published between 2010 and 2024 from Scopus and Web of Sciences databases. The analysis found that women entrepreneurs benefit from financial digitalisation mainly when supported by three interrelated competencies: (1) enhancing digital financial literacy through targeted digital platforms; (2) developing digital financial behaviour to embed sound practices; and (3) integrating financial socialisation to reinforce sustainable decision-making through family, peers, and networks. By moving "beyond the cash flows," this study highlights that access to financial technology alone is insufficient without the competencies to leverage it effectively. The results of this study are expected to contribute to the new body of knowledge on financial competencies, inform policy interventions on women's entrepreneurship, and provide practical strategies for empowering women entrepreneurs as agents of inclusive and resilient economic growth in Malaysia.

1. INTRODUCTION

Women entrepreneurs stand as a dynamic and increasingly critical force in Malaysia's economic development. As of 2015, women-owned SMEs accounted for 20.6% of all SMEs in the country, with their number rising from 127,429 in 2010 to 186,930 (SME Annual Report 2016/2017). Furthermore, based on the Economic Census 2023, released by the Department of Statistics Malaysia (DOSM) in April 2025,

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women-owned establishments (covering MSMEs) contributed 3.6 per cent to the overall economic sectors (GDP) in Malaysia, and contributed around RM89.3 billion in output value (Department of Statistic Malaysia (2025)). The service industry includes retail, food, education, beauty, and hospitality, as well as expanding into digital and online business activities. Beyond economic metrics, women entrepreneurs are involved in contributing through job creation and income generation, especially in rural and indigenous areas (Munir & Watts, 2026; Razak et al., 2024).

Malaysia's strategic frameworks, including the Shared Prosperity Vision (SPV) 2030 and the National Entrepreneurship Policy (NEP) 2030, support women entrepreneurs and are recognised as crucial to achieving sustainable and inclusive growth. The public discourse of promoting women's entrepreneurial involvement by media outlets gradually highlights government-backed initiatives and financing support through agencies such as SME Corp, MARA, and TEKUN. Women entrepreneurs are supported through initiatives such as Program Usahawan Wanita, the DanaNita financing scheme (MARA), and the Women Exporters Development Program under MATRADE.

Even in the aftermath of COVID-19, business recovery in Malaysia is linked to access to financial resources, investment needs, and personal savings. However, women entrepreneurs continue to struggle and lack these resources (Kanapathipillai et al., 2021). Particularly, women entrepreneurs running micro enterprises experience lesser profit margins and lower business survival rates compared to their male counterparts (Dutta et al., 2019). Persistent structural barriers, such as gender bias in finance, limited access to funding, weak entrepreneurial networks, and caregiving pressure, hinder the growth of women entrepreneurs. Apart from these existing challenges, recent data highlights that women entrepreneurs, especially in Malaysia, are less prepared for digital adoption, with limited use of e-commerce, mobile banking, and fintech tools (Md Faudzi et al., 2024; Yusof et al., 2025).

Financial digitalisation is unlocking new pathways, especially for women entrepreneurs, through mobile banking, e-wallets, digital invoicing, and fintech platforms to bypass structural barriers in traditional financial systems (Pawenang et al., 2024). These tools provide immediate access to capital, support cashless operations, and minimise transaction expenses, significantly improving overall liquidity. Moreover, digitalisation, such as social media platforms, helps women-owned businesses to participate and expand in broader markets through e-commerce and diversify their customer base (Hazudin et al., 2021). Importantly, by implementing digital accounting systems and a dashboard, one can strengthen and maintain record-keeping, boost financial clarity, and make smarter financial decisions (Jurniarti et al., 2026; Hasbolah et al., 2021). By bridging geographic and social gaps, financial digitalisation creates pathways for broader financial inclusion, scalable growth, and greater resilience, enabling women entrepreneurs to grow, adapt, and compete throughout Malaysia's fast-changing economy (The Asia Foundation, 2024).

Digitalisation comes with the promise of inclusivity, effectiveness, and wider access to markets, while also exposing women entrepreneurs to emerging vulnerabilities such as digital fraud, disparities in information, and the need for more specialised competencies in financial decision-making. Malaysia's digital ecosystem has significant potential, yet MSMEs, especially those directed by women, are not ready for digital transformation (Yunos et al., 2026; Yeong et al., 2023). For example, several offerings provide digital tools and resources for micro and small women entrepreneurs (Fikri et al., 2024), yet uptake remains elusive. This reflects the gap between potential and capacity, revealing that women entrepreneurs in Malaysia may struggle to navigate these challenges, including poor record keeping, price pressures, a lack of customers, limited financial skills and training, or supplier fraud. All of these factors will impact profit, growth, and sustainability (The Asia Foundation, 2024).

Digitalisation and ICT development are changing the way finance can be accessed and managed, and they present opportunities for women entrepreneurs if they are able to use them alongside the necessary managerial and financial competencies. Research highlights the significance of digital financial competencies in women's business practice and performance, but there is limited focused research in Malaysia (Tanggamani et al., 2024). For example, research indicates that inadequate financial literacy is a significant constraint to the growth of Malaysian women entrepreneurs. Another research examined women

entrepreneurs' financial literacy in the context of microbusinesses and identified the causes of their financial knowledge gaps, which include a lack of training to gain proficiency in digital financial skills such as transactions, strategic budgeting, assessment of financial risks, and procurement of training in digital record keeping, as well as awareness to adequately deal with increased risks of exclusion, mismanagement, and vulnerability of the business (Abdull Rahman et al., 2025).

Studies in other geographical contexts emphasise a stronger connection between financial and digital literacy and entrepreneurial growth. For example, in Indonesia, both financial and digital literacy positively affect SME growth (Rini et al., 2025; Fauzi et al., 2020). Moreover, research in South Sulawesi emphasises that digital financial literacy and inclusion play an essential role in enabling women entrepreneurs, highlighting the importance of these factors in encouraging their success in business (Syahnur et al., 2024). Despite these findings, the understanding of which specific financial competencies are most critical for women entrepreneurs, especially related to digitalisation, remains limited. Arguably, more research needs to be done, especially since micro- and small-scale women entrepreneurs are those most vulnerable within the digital economy and are often underrepresented in existing research. Aligned with the above, this study aims to fill this gap with two objectives:

- i. to examine the challenges faced by women entrepreneurs in adapting to financial digitalisation within the Malaysian business landscape.
- ii. to propose digital financial competency strategies enhancing financial literacy, developing digital financial behaviour, and integrating financial socialisation that enable women entrepreneurs to build resilience and achieve sustainable business success.

The goal for this research is to identify the key financial competencies that contribute to the success of women entrepreneurs in Malaysia. This research carries important implications across various areas, especially for women entrepreneurs, by emphasising specific financial skills, which, beyond cash flow basics, encourage resilience, make smart decisions, and sustain business operations in Malaysia's digital economy. By conceptualising financial competency as a multi-faceted concept within the context of the digital era, this research aims to enrich existing scholarly discussions while addressing gaps related to both research methods and target populations. Besides, this insight gained will help shape more effective financial training, digital literacy programs, and support systems personalised especially for women. This enables women entrepreneurs with strong financial competencies to promote comprehensive economic growth but also helps improve community welfare and contribute to building a resilient and fair business environment, aligned with national goals such as the Shared Prosperity Vision 2030.

2. METHODOLOGY

Firstly, a systematic review of the existing literature focusing on women entrepreneurs, financial digitalisation, and financial competencies was conducted to address the research objectives which aimed to identify the challenges faced by women entrepreneurs in navigating financial technologies and to uncover strategies that can strengthen their financial competencies. Relevant articles were retrieved from two leading academic databases: Scopus (<https://www.scopus.com/>) and Web of Science (<https://www.webofscience.com/>). These databases were chosen because of their comprehensive coverage of high-impact journals in the fields of entrepreneurship, finance, and social sciences. Secondly, a series of keywords was utilised to capture the scope of the study, including "women entrepreneurs in Malaysia," "financial digitalisation and SMEs," "financial digitalisation and financial literacy," "digital financial behaviour," and "financial socialisation among entrepreneurs." The search initially identified 324 articles published between 2010 and 2024. Thirdly, the selected literature was then organised thematically to align with the two main research objectives. First, challenges faced by women entrepreneurs in adapting to financial digitalisation were identified, focusing on gaps in digital readiness, limited financial knowledge, and behavioural barriers. Second, strategies were extracted and synthesised to propose three interrelated financial competencies: (1) enhancing financial literacy through targeted digital platforms; (2) developing digital financial behaviour to embed sound practices; and (3) integrating financial socialisation to strengthen decision-making networks as shown in Fig 1. Finally, this methodological process reveals key

challenges faced by women entrepreneurs when they engage with financial digitalisation and also provides strategies to support them in the Malaysian context. These insights aim to enrich academic discussions and policy development by moving “beyond the cash flows” to competency-based empowerment in the digital environment.

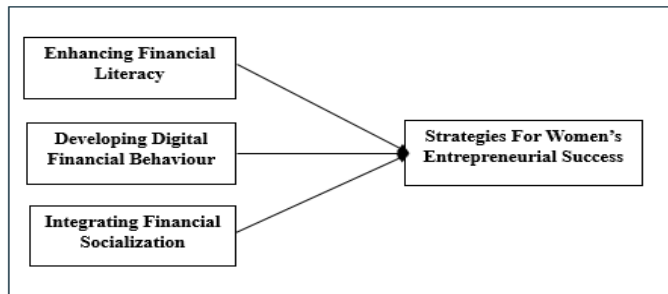


Fig. 1 Conceptual Framework

3. FINDINGS

3.1 *The challenges faced by Malaysian women entrepreneurs in navigating financial digitalisation*

3.1.1 *Limited Digital Financial Literacy*

Despite the advancements in technology, mostly women entrepreneurs, especially those in rural areas with less formal education, still struggle to fully use digital financial tools and are limited by the infrastructure (Ismaeil et al., 2026; Abd Kadir et al., 2023; Cheah et al., 2021; Fadzlyn & Muhammad, 2024). Despite the improvement in digital infrastructure, communities in rural and underserved regions continue to face challenges due to limited digital literacy. Pawenang et al. (2024) and Fadzlyn and Muhammad (2024) noticed that the current interventions often miss the subtle challenges and remain unresolved, and fail to provide solutions that impact vulnerable populations.

Within the wider ASEAN region, women still lean on using cash and traditional payment methods, while mobile money apps and digital wallets remain underused more than by men (Cheah et al., 2021; Widyastuti et al., 2024). These demographic and socio-economic factors can be age, education, or simply the way rural and urban life differ, which influences gender gaps. In addition, Tam and Leetrakun (2020) emphasise the potential of digital inclusion programs, avoid gender sensitivity strategies, and tailor to local conditions and needs.

Although digital technology has made access easier to use, it does not mean it automatically changes into equality. Several studies have found that despite many public funding and development programs provided by the Government and related agencies, most women entrepreneurs, especially in rural areas and those with micro-sized enterprises, still face difficulties and struggle to access the digital economy (Sowmya & Pai, 2025; Cheah et al., 2021; Fadzlyn & Muhammad, 2024; Kamarudin, 2024). In addition, there is a significant gap between gender in digital payments across ASEAN, highlighting not only technical but also institutional, cultural, and social factors, which necessitate policy responses. A qualitative study through in-depth interviews conducted by Abdull Rahman et al. (2025) revealed that most women entrepreneurs in Malaysia are still weak in terms of financial literacy due to a lack of financial training that hinders the effectiveness of financial management, especially in terms of financial record keeping. This also hinders wider adoption of financial digitalisation among them.

3.1.2 *Limited Access to Financial Services*

Even with access to financial support and services, women entrepreneurs in Malaysia still encounter difficulties. While the government’s effort has rolled out many kinds of schemes, such as micro-debit

programs, digital grants, and even targeted funds, those supports rarely reach women who run informal or small-scale businesses (Manual et al., 2024). Gender biases in decision-making within financial institutions required male co-signers or questioned women's credibility as somehow less solid (Bin-Humam et al., 2023). Moreover, much research highlights the uneven enforcement of policies, which often overlooks underserved groups and where the financially excluded are (Abd Kadir et al., 2023). Without approaches that reflect the diversity among women entrepreneurs, many women find it hard to continue their business, even though they face restricted financial resources and engage with formal financial services.

Previous research revealed that Malaysian women entrepreneurs faced challenges in navigating financial digitalisation due to limited access to financial services (Rahman et al., 2025; Awang et al., 2025; Yusof et al., 2025). Quantitative research conducted by Rahman et al. (2025) on 2024 women SMEs in Selangor found a significant association between their financial condition and the readiness of digitalisation adoption in business. This implies that many women entrepreneurs will utilise digitalisation and social commerce if their business is able to generate more income and profit. However, if they do not receive financial support from any agency to help their business, the readiness to adopt digitalisation will be lower. The result of this study is also consistent with the findings of a study by Awang et al. (2025) on 309 women microentrepreneurs in the Klang Valley and Selangor, who found that financial aid is one of the biggest obstacles to financial digitalisation adoption. This study also recommends that more financial assistance should be given to women microentrepreneurs by relevant agencies to strengthen their businesses and become more competitive. Yusof et al. (2025) also acknowledged that one of the main obstacles to women entrepreneurs' success in Malaysia is the lack of financial resources and funding schemes, such as financial loans, grants, and microfinance programs, offered to them, which causes the readiness to adopt financial digitalisation to decrease.

3.1.3 Social and Cognitive Barriers

Beyond the structural hurdle, women entrepreneurs frequently face heavy social and cognitive barriers. Traditional gender expectations often lead women to play it safe and discourage them from making financial decisions (Franzke et al., 2022). Social interactions, combined with fewer connections and a lack of self-confidence, lead to self-doubt, which will hinder women's ability to scale their businesses (Chikh-Amnache & Mekhzoumi, 2024). Apart from that, cognitive barriers lead to financial anxiety and uncertainty about feeling unqualified to manage accounts, especially when there is limited access to financial training and mentorship (Tanggamani et al., 2024). All these factors, including challenging environments where ambition is constantly tested by both external and internal hesitation, prevent women from maintaining and sustaining their businesses.

Moksin et al. (2025) examined the success and failure factors for women entrepreneurs in Malaysia by conducting a qualitative study. The results of the study revealed that social and gendered barriers are significant obstacles to business success among them due to work-family conflict that hinders their decision-making in managing their businesses, as well as the lack of accessible opportunities for upskilling and mentorship. This conclusion is consistent with Azis et al. (2023), who also found that gender bias and socio-cultural barriers are the main obstacles to business success for rural women entrepreneurs in Malaysia, which in turn hinder financial digitalisation and financial decision-making in their businesses. This is due to the stereotype that women only need to focus on domestic responsibility in managing their families and are not involved in business activities, as well as mobility constraints. A case study between developed (Poland) and developing (Malaysia) countries conducted by Ślusarczyk et al. (2023) also exposed that social support plays an important role in women entrepreneurs' managerial skills and business success in both countries. The results of the study found that social support and cognitive abilities such as self-confidence, responsibility, and courage influence the success of women entrepreneurs in Malaysia, while in Poland it is influenced by assertiveness, risk-taking, and responsibility.

4. DISCUSSION

The rapid growth of financial digitalisation has changed rapidly in the operation of businesses, where women entrepreneurs need to keep up by building confidence and strengthening their skills to adapt and enhance their financial literacy in the digital economy. Despite the extensive study on fintech adoption in existing literature, the barriers women entrepreneurs specifically encounter in acquiring financial competencies have been overlooked. To address this gap, the present paper proposes actionable strategies designed for women entrepreneurs in Malaysia. These strategies align with existing recommendations from scholars, policymakers, and industry stakeholders, which are customised in the context of realities faced by women entrepreneurs. These strategies are shaped to suit the needs, capacities, and ambitions of women entrepreneurs to navigate their businesses in a digitalised financial environment.

4.1 Enhancing Financial Literacy through Targeted Digital Platforms

Digital financial literacy is a cornerstone for navigating fintech ecosystems. Through tailored digital tools featuring mobile apps and interactive training, women entrepreneurs can gain practical knowledge, including budgeting, managing credit, investment planning, and risk analysis. Research in Malaysia highlights that women entrepreneurs who engage in structured financial literacy programs experience improved record-keeping and obtain credit access (Noor et al., 2024). Using digital platforms for financial training allows women entrepreneurs, especially in rural areas, who are limited in accessing traditional financial education. Based on a study conducted by Fadzlyn and Muhammad (2024) on women entrepreneurs in Kelantan Malaysia, it proves the importance of digital platforms that are easily, accessible and more user-friendly to facilitate women entrepreneurs, especially in rural areas, who are mostly from less educated backgrounds, to actively use digital platforms and can improve their understanding of financial management. This can then help them in developing their businesses through digital platforms while promoting digitalised financial adoption. This study also suggested that collaboration between fintech companies and financial institutions is very necessary in creating a digital platform that is easier, more efficient, practical and suitable for all groups, especially for those who are not very skilled in using information technology.

4.2 Developing Digital Financial Behaviour

The path to entrepreneurial success is shaped by consistent financial behaviours. Developing and cultivating consistent financial habits like tracking cash flow digitally, using e-wallets for tracking expenses, and financial forecasting can significantly help women entrepreneurs manage their business properly (Kamarudin, 2024). A study conducted by Sari et al. (2024) on women entrepreneurs in South Sulawesi, Indonesia revealed that there is a positive relationship between digital financial behaviours and resilience. This means that the level of resilience increases when women entrepreneurs have good digital financial behaviour and are skilled in managing their business finances and can subsequently reduce vulnerability to more sustainable. Therefore, the role of experiential learning through simulations and mentorship is very important in helping to increase the confidence of women entrepreneurs, especially those in rural areas, to use digital platforms to facilitate their daily business transactions. Pawenang et al. (2024) acknowledged that doing hands-on fintech labs practically provides women entrepreneurs with exposure to digital financial tools like e-wallets, QR payments and invoicing platforms can increase digital financial behaviour among women entrepreneurs.

4.3 Integrating Financial Socialisation

To increase understanding and expertise in financial management is not solely based on formal education alone. This is because the development of financial competencies can be shaped or generated through social interactions and engagement among those around them that can help improve the financial competencies of an individual, including women entrepreneurs. This can be achieved through conversations with families, peer influences, professional networks and peer-learning groups, mentorship programs, or family financial discussions are more likely to adopt sustainable practices (Abdul Malik et al., 2025). Incorporating financial

socialisation into capacity-building programs helps normalise conversations around savings, investment, and managing debt. In Malaysia, existing entrepreneurship networks such as PUNB's Women Entrepreneur Programme illustrate the benefits of peer exchange, yet these efforts need to be expanded and digitally integrated to allow continuous support. A study by Abdullah et al. (2025) on women entrepreneurs in Klang Valley, Malaysia found that leadership development among women entrepreneurs can be enhanced through specific training that focuses on improving digital skills which is also supported by existing entrepreneurship networks and mentoring support programs through digital enhancement.

5. CONCLUSION, LIMITATIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH

Women entrepreneurs in Malaysia face barriers to adapting to financial digitalisation due to limited financial literacy, resistance to behavioural change, and weak social support networks. As the digital economy pushes forward, it widens the gaps, leaving women entrepreneurs unprepared and at risk of being excluded from getting opportunities to grow, reduced competitiveness, and more vulnerability to financial instability. Having access to fintech tools alone does not lead to meaningful progress or resilience in business without having a strong competency. Efforts can also be built through individuals and community levels by helping women entrepreneurs reduce the risk and boost adaptive capabilities. This paper suggests three strategies: (1) enhancing financial literacy through targeted digital platforms, (2) developing digital financial behaviour, and (3) integrating financial socialisation. It is hoped that this proposed strategy can offer a pathway for women entrepreneurs to be more confident in embracing financial digitalisation, which will greatly benefit to ensure that their businesses continue to survive and thrive, especially in these challenging times, by taking advantage of the digital capabilities of technology that can further expand their business market. It is suggested that developing financial competencies involves combining structured digital literacy programs folded into real entrepreneurship training, increasing behavioural change through hands-on experience, mentoring, and trial and error, as well as incorporating financial socialisation, which leverages social opportunities from peers and family. These strategies serve as a blueprint for policymakers, support agencies, and entrepreneurship networks to develop impact interventions that align with women entrepreneurs' needs, capacities, and aspirations. By embracing these strategies, women entrepreneurs can evolve "beyond the cash flows" to become a crucial key for inclusive growth and digital resilience across Malaysia. However, this study is only focused on the digitalisation of financial competency among women entrepreneurs. Therefore, future research could explore the long-term sustainability of women's ventures that adopt financial technologies like crowdfunding and may conduct comparative studies among genders. Furthermore, future research should investigate the impact of holistic interventions that combine financial training with non-financial supports to enhance the new body of knowledge in this area.

DECLARATION OF GENERATIVE AI AND AI-ASSISTED TECHNOLOGIES

This manuscript was developed with the assistance of Gemini (Google) for the purpose of getting the ideas and structuring the initial outline. The tool/service supported the author(s) in synthesising broad concepts, and the authors assume full responsibility for the final version submitted for publication.

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CONFLICT OF INTEREST STATEMENT

The authors agree that this research was conducted in the absence of any self-benefits, commercial or financial conflicts.

AUTHORS' CONTRIBUTIONS

Najwa Dayana Nazri conceptualised the research idea, conducted the analysis and wrote the part of the analysis. Siti Fahazarina Hazudin wrote findings and discussions section. Mohd Aidil Riduan Awang Kader wrote conclusion, limitations and recommendations for future research and act as corresponding author.

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